

# **SOUTH DAKOTA STATE PLAN FOR ARCHAEOLOGICAL RESOURCES 2018 UPDATE**

by

**Linea Sundstrom, Ph.D.**



*2017 excavations at 39HD115*

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# I. INTRODUCTION TO THE SOUTH DAKOTA STATE PLAN FOR ARCHAEOLOGICAL RESOURCES

## Distribution and Public Comment

The *South Dakota State Plan for Archaeological Resources* is a public document. Comments and suggestions on its content and format are welcome. Updates will appear periodically, but comments can be submitted at any time by contacting either of the agencies listed below. Persons submitting additions to the plan or requests for deletions should send accompanying references. No changes will be made to the factual content of the plan without documentation to validate those changes.

The document can be downloaded from <https://history.sd.gov/preservation/SHPOdocs.aspx>.

Copies of the State Plan are available for review at:

State Historic Preservation Office  
South Dakota State Historical Society  
900 Governors Drive  
Pierre SD 57501  
(605) 773-3458  
<http://history.sd.gov/preservation>

Archaeological Research Center  
South Dakota State Historical Society  
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Rapid City, SD 57709-1257  
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<http://history.sd.gov/archaeology>

## Introduction to the 2018 Edition

It has been 10 years since the last update to the South Dakota State Plan for Archaeological Resources (“State Plan” for short) and 27 years since the original State Plan was written. In that time, changes to cultural resource management policy and procedure, as well as strides in amassing and organizing data on the state’s heritage resources, have vastly changed the picture of South Dakota archaeology

The current update is intended to incorporate the many changes of the last two decades and to provide a document that is easy to understand and use by both cultural resource managers and the public. The ubiquity of computers, improvements in data and graphics software, and portability of

data via electronic media mean that this version of the State Plan can be both more comprehensive and more accessible than its predecessors.

This document owes much to the cooperation and dedication of archaeologists and support staff in South Dakota. It builds on earlier versions by Larry J. Zimmerman, Jeffrey Buechler, R. Peter Winham, and L. Adrien Hannus.

## Definitions

It is necessary to begin with a note on terminology. For all but a small portion of the span of South Dakota history, American Indians were alone in the region. At present, opinion varies as to which term is most appropriate for the indigenous peoples of the Americas: Indian or Native American. The Canadian term *First Nations* has not caught on in the US. I have chosen to use the term *Indian* or *American Indian* in this document for the sake of simplicity and to clarify that the cultures that existed in the Americas before Europeans entered the hemisphere were those of the ancestors of today's American Indians. The term *nation* is used here to refer to distinct ethnically based political units among Plains Indians. It is used as the term *tribe* has frequently been applied in the past. While both *tribe* and *nation* refer to a political entity to which individuals claim membership based on birth, adoption, or ethnicity, the latter avoids the connotation of a political system less developed than those under which colonial powers operated. The exception to my use of the term *tribe* is for federally recognized political units that have retained the word in their official designation, such as the Northern Cheyenne Tribe. At the same time, the word *nation* is intended here to connote a group of people with a shared political identity separate from surrounding groups and capable of forming alliances with other such groups for purposes of trade and warfare. It is not intended to connote political systems similar to those of European cultures.

I have tried to avoid archaeological jargon, but a few terms have no simple substitutes. Archaeologists use the term *lithics* to refer to chipped-stone artifacts and the byproducts of their manufacture: flakes and shatter. A *site* is a place where evidence of past human activity is preserved. An *artifact* is anything made, modified, or moved by people. A *feature* is an artifact that cannot be transported back to the laboratory for study: for example, a fire hearth, a storage pit, or a petroglyph. A *component* is a portion of a site made by, and representing, the same culture. For example, a multi-component site might have a Middle Archaic component, a Late Archaic component, and a Historic component. A *biface* or *bifacial tool* is an implement made by chipping away flakes from both sides of a piece of stone. An unfinished artifact is called a *preform*. Projectile points (spear points, dart points, and arrowheads) are bifaces, as are knives and choppers. A *uniface* or *unifacial tool* is one made by removing flakes from only one side of the stone blank. Such tools are generally used for scraping and include hide-scrapers and push planes. *Chipped-stone tools* are those made by knocking flakes off of brittle stone: projectile points, knives, scrapers, and drills are made this way. The by-products of that process are called *chipping debris* or *debitage*. *Ground-stone tools* are made by grinding or abrading the surface of a granular rock such as sandstone or granite. The most common ground-stone tools in the state are manos, metates, and axes.

*Petroglyph* refers to a marking on a rock surface made when a person removed a portion of the rock surface by pecking, incising, or abrading. A *pictograph* is a rock marking made by applying pigment to the rock surface. *Rock art* is the standard term to encompass both kinds of rock

markings. Some American Indians prefer other terms, because, as they correctly assert, these rock markings were not equivalent to European art in their significance or function. I have retained the term *rock art* here, because it is used in the state site records and for want of a satisfactory substitute. Where possible, I have substituted the term *petroglyph*. A common site type in the Great Plains is a circle of rocks about 4 to 7 meters in diameter. Most of these are simply places where tipi covers were weighed down with stones to keep the cover taut and to keep out drafts. These features are often called *tipi rings*, but the South Dakota records use the term *stone circle* instead. This is to avoid the untested assumption that any such feature represents a tipi location. Finally, archaeologists use the term *burial* to refer to any formal disposal of human remains, whether in the earth or above ground.

The term *cultural resources* includes historic sites, archaeological sites, and traditional cultural properties. The latter are definable, discrete places that particular communities have used, and continue to use, for ceremony, worship, food gathering, and other activities. Such uses are rooted in the community's history and are important in perpetuating the cultural identity of the community (*National Register Bulletin* 38, p. 1). This category has most often been applied to American Indian cultural places identified through consultation with tribal councils and tribal historic preservation offices, but it can apply to any defined group with a historic presence in an area. All other properties classified as cultural resources are historic, often defined as older than 50 years. Some federal agencies use the term *heritage resources* instead of cultural resources.

Some American Indians object to the use of terms such as *prehistoric* and *historic* to refer to the past. They argue that they were not without history before non-Indians brought alphabet-based writing systems to the Americas. They had used their own methods, including oral transmission and picture-writing, to record the important events and trends of the past. Some argue further that depriving Indians of their own traditional histories, or devaluing them in comparison with European systems of writing and discourse, is part of a larger agenda by which native peoples were subjugated and their cultures disrupted. Some researchers prefer terms such as *pre-contact* and *contact-era* in place of *prehistoric* and *historic*. While this preference is acknowledged here, the older terminology will be retained in this document simply because those terms continue to be used in the official state sites records and in most archaeological reports. The discussion of South Dakota's past that makes up most of this document draws on a combination of written documents, archaeological data, and traditional American Indian sources, such as oral accounts, and geographic names. Information that is consistent among multiple sources or that can be empirically verified is given preference over less well substantiated information regardless of its source.

## Structure of the Data

Following the structure of earlier versions of the South Dakota State Plan for Archaeological Resources, this update divides the state of South Dakota into 24 regions and its history into seven major periods. The regions are defined according to a combination of drainage basins and physiographic zones. Physiographic zones are based on major landform types, such as the White River Badlands, Black Hills, Missouri River Trench, and Missouri Coteau. While these reflect the subsurface geology, they are defined on the basis of surface form. Each physiographic zone comprises one or more drainage basins. For the convenience of researchers and public lands managers, some study unit boundaries are placed at county lines, so that a given county lies entirely

within a single region. Each region is discussed separately in the State Plan; however, Part II presents an overview of the archaeology and history of the state as a whole.

Archaeological site records maintained at the Archaeological Research Center, are keyed to the regions used here. Each site is also classified as to age when this is known or can be reasonably estimated. This document uses the same age classification system as the state site inventory. This system recognizes seven age classifications by placing overlapping cultural entities into a single time unit: Late Archaic and Woodland, 1500 BCE–900 CE; and Late Prehistoric and Plains Village, 900–1700 CE. These units are intended to group sites in a general way (**Error! Reference source not found.**). More specific chronological information for each site, and each component of a single site, is also recorded in the Archaeological Research Center site records. Although radiocarbon ages are recorded as years “before present,” archaeologists now know that radiocarbon years may be shorter or longer than calendar years, because of fluctuations in the amount of carbon in the earth’s atmosphere. Calibration charts and tables are used to convert radiocarbon ages to calendar years (Fiedel 1999; Reimer *et al.* 2004). For those readers not familiar with the system, BCE and CE refer to Before Common Era and Common Era. They are equivalent to the BC/AD dating system.

Period	BCE/CE Dates	Radiocarbon Age (Years before 1950)	Calendar Years Before 1950
Paleoindian	Pre-6000 BCE	>8000 BP	>8850 Cal. BP
Early Archaic	6000–3500 BCE	5500–8000 BP	6300 – 8850 Cal. BP
Middle Archaic	3500–1500 BCE	3500–5500 BP	3780–6300 Cal. BP
Late Archaic	1500 BCE–500 CE	1500–3500 BP	1380–3780 Cal. BP
Woodland	1–1000 CE	2000–1000 BP	900–1950 Cal. BP
Late Prehistoric	500–1861 CE	1500–100 BP	140–1380 Cal. BP
Plains Village	1000–1861 CE	1000–100 BP	140–900 Cal. BP
Protohistoric	1700–1861 CE		
Historic	Post-1861 CE		

Table 1. Archaeological periods in South Dakota.

The terms used for the various periods derive from several different systems of terminology; thus, they may seem confusing or illogical to those unfamiliar with their application to Plains archaeology.

The *Paleoindian* category comes from the *Paleo-* (old), *Meso-* (middle), and *Neo-* (new) *Indian* classification proposed by A.G. Smith (1957) and independently by Wormington and Forbis (1965). Plains archaeologists have retained the first of these terms, but have abandoned the other two. *Paleoindian* refers to the period at the end of the Pleistocene (Ice Age) geological period and the transition to the Holocene (modern) geological period. This encompasses the earliest known cultures and human remains in the Americas, including the Great Plains. The second part of the terminology most commonly used by Plains archaeologists today, *Archaic*, comes from Willey and Phillips’s (1957) classification of American Indian cultures into Lithic, Archaic, Formative, and Classic stages. In this instance, the terms referred to stages of development toward urbanized cultures, rather than time periods; thus, the Archaic occurred at different times in different places. Archaic cultures typically did not yet employ agriculture, but had settled into a pattern of intensive

use of plant and animal food sources that would eventually lead to horticulture. In the Great Plains, this term has been standardized to refer to the period from the end of the Paleoindian period (ca. 8000 BP) to the time when the bow and arrow came into widespread use in the region, about 1500 years ago. The *Late Prehistoric* category derives from William T. Mulloy's (1958) division of northern Great Plains chronology into Prehistoric, Protohistoric, and Historic periods, with the Prehistoric further divided into Early, Middle, and Late Prehistoric. Plains archaeologists today have abandoned the cumbersome prehistoric divisions, except for the Late Prehistoric. The latter period extends from the appearance of the bow and arrow weapons system in the region to the time when trade goods of European and American colonial manufacture entered the Great Plains. At the first meeting of professional archaeologists working in the Great Plains, participants opted to use the terms *Protohistoric* and *Historic*, rather than *post-Columbian* to refer to the period of European colonization of the Americas (Guthe 1931). *Protohistoric* is used to refer to the period when European trade goods, including horses, were present in the region, but before permanent settlement of the region by non-Indians. *Historic* refers to the period of permanent non-Indian settlement in the region, sometimes defined as the period for which written documents are available to historians.

The term *Woodland* comes from yet another taxonomic system—that used to describe cultural stages in eastern North America. In northwestern Great Plains, Woodland refers not to a separate period, but to a distinctive eastern-derived cultural pattern that overlaps the Late Archaic and early Late Prehistoric periods. Woodland Pattern cultures are characterized by production of sack-shaped pottery with a smooth or cord-roughened surface: that is, the potter created a rough surface on the pot exterior by pressing it all over with a paddle wrapped in cordage. Woodland people generally lived in simple wattle-and-daub houses organized into small settlements along stream courses. They lived by hunting, gathering, and tending patches of wild plants—the beginnings of horticulture in the northern woodlands, prairies, and plains. Sites of the same age are classified Woodland if they contain pottery and Late Prehistoric or Late Archaic if they do not.

The numerous village sites found in central and eastern South Dakota dating to the last thousand years required a more complex classification system. Archaeologists have used several approaches to classifying these sites. The most formal of these systems was the Midwestern Taxonomic System (MTS), designed for Middle Missouri archaeology (Krause 1977, 1989; Tiffany 1983). The Midwestern Taxonomic System comprises of six taxa: component, focus, aspect, phase, pattern, and base (McKern 1939:301–313). In practice, the system is usually limited to component, focus, and aspect. A component refers to a single site, if the site has just one cultural layer, or to a single stratum or cultural layer of a more complex site. Components with similar traits are grouped into foci. Foci with similar traits were likewise grouped into aspects. A component cannot be a member of more than one focus, and a focus cannot be a member of more than one aspect. The MTS explicitly excludes time and space. Within the logic of the MTS, taxa are formed on the basis of their content, independent of spatial or temporal considerations, which are imposed on the taxa after the latter are defined (Krause 1977:8). MTS has been applied primarily in the central and eastern portions of South Dakota.

In contrast, the Phase-Tradition-Horizon System, developed by Gordon Willey and Philip Phillips (1955, 1958), creates the basic taxa according to the intersection of values along the dimensions of space, time and content. The taxa created by contrastive values along these dimensions are phase, horizon, and tradition. The *phase* is a classificatory taxon, and *horizon* and

*tradition* are integrative taxa (Krause 1977:8). The variable of space is broken into five categories: site, locality, region, subarea, and area. Two categories make up the temporal variable: local sequence and regional sequence. The component, subphase, phase, and culture are all discussed as formal or culture content variables (Zeier 1982:29). Willey and Phillips describe these taxa as follows:

*Phase:* An archaeological unit possessing traits sufficiently characteristic to distinguish it from all other units similarly conceived whether of the same or other cultures or civilizations, spatially limited to the order of magnitude of a locality or region, and chronologically limited to a relatively brief interval of time (Willey and Phillips 1962:22).

*Horizon:* A primarily spatial continuity represented by cultural traits and assemblages whose nature and mode of occurrence permit the assumption of a broad and rapid spread (Willey and Phillips 1962:33). The horizon is characterized by its relatively limited time dimension and its significant geographic spread. It is usually expressed by an art style or a very specific complex of features whose historical uniqueness cannot be mistaken (Willey and Phillips 1955:723–724).

*Tradition:* A primarily temporal continuity represented by persistent configurations in single technologies or other systems of related forms (Willey and Phillips 1962:37).

To correctly apply this system, the research must meet these conditions. First, phases must always have the greatest content. Second, traditions must always have the greatest time depth. Third, horizons must always have the greatest spatial spread. Fourth, traditions and horizons may have roughly equal content but must have less content than any single phase. Fifth, phases and traditions may have roughly equal spatial dimensions but must be less widely distributed than a horizon. Sixth, phases and horizons may have roughly equal time spans but must be less durable than a tradition.

The Willey and Phillips System has met with criticism (Spaulding 1957) and attempts at modification. Notable modifications include Donald Lehmer and Warren Caldwell's (1966) redefinition of *horizon*, their distinction between technological and cultural traditions, and their use of the spatial term *districts*. Later Lehmer redefined districts as *regions* (1971:28–29). Lehmer also added the concept *variant* to the system, as a subcategory of the broad *tradition* (Krause 1969:95, 1977:10; Lehmer 1971:32). Lehmer defined *variant* as “a unique and reasonably uniform expression of a cultural tradition which has a greater order of magnitude than a phase, and which is distinguished from other variants of the same tradition by its geographic distribution, age, and/or culture content” (Lehmer 1971:32).

Archaeologists in South Dakota have applied the Willey and Phillips system unevenly. Two main factors account for this lack of consistency. First, the Willey and Phillips system does not consistently define some of its taxa. Second, many Great Plains archaeologists have substituted the Willey and Phillips *phase* for the *focus* taxon of the MTS without regard for the spatial and content limitations placed on the phase taxon in the Willey and Phillips system (Tiffany 1983:98).

In 1977, Richard Krause presented a paper that revisited Donald J. Lehmer's 1954 response to the limitations of the Midwestern Taxonomic System, discussed Lehmer and Caldwell's (1966) attempt to introduce the Willey and Phillips Phase-Tradition-Horizon System, and reexamined the taxonomic modifications Lehmer introduced in his final synthesis of Middle Missouri prehistory (Krause 1977:5–13).

In a later publication, Krause proposed adding a new midrange classificatory unit, *population*, to the Willey and Phillips System:

Given a commitment to the general theory of evolution currently popular among archaeologists: (1) components may be interpreted as communities; (2) populations may be interpreted as system states, i.e., multicomunity energy, matter, and information exchange climaxes; (3) phases may be interpreted as multi-population system trajectories; (4) traditions may be interpreted as time-durable multi-phase information exchange routes; and (5) horizons may be interpreted as multi-phase matter and energy exchange routes” [Krause 1989:288–289]. Krause noted that “if taxonomic issues continue to be ignored, if the ad hoc labeling practices that are so much a part of our past are continued, the growth of understanding will be inhibited more than stimulated [Krause 1989:289].

In response, Joseph Tiffany proposed that

...one way to clarify the usage of the formal units *phase* and *culture* [in Middle Missouri archaeology] and to provide a constructive means for comparison, would be 1) to treat time as an independent variable by establishing a temporal model for the Middle Missouri tradition, and 2) to leave the definition of spatial units as dependent variables of the formal units of culture and phase. In other words, rather than defining regions independently of content data, as has been done for the Middle Missouri tradition, regions should be defined on the basis of the extent of a particular formal taxonomic unit such as culture. Likewise, the spatial extent of a locality should be determined by the maximum extent of a phase [Tiffany 1983:100].

No attempt is made here to reconcile these various taxonomic systems, except that the term *complex* is used when it is not clear whether a set of related sites comprises a focus, phase, or aspect.

## **Information Sources**

The information presented here comes from a wide range of sources. The primary source is the inventory of site records and reports maintained by the Archaeological Research Center (a program of the South Dakota State Historical Society.). Various laws and regulations require that archaeological research be done in advance of ground-disturbing projects that involve federal assistance, such as highway construction and minerals exploration. Standard methods are used to discover, record, and evaluate archaeological, historic, and traditional-use places. These produce records in the form of maps, site forms, excavation records, and reports. All such records are reviewed by the South Dakota State Historic Preservation Office, another division of South Dakota State Historical Society, to ensure compliance with historic preservation laws and regulations and

are placed into permanent storage at Archaeological Research Center or another qualified repository. Reports on projects involving historic buildings and communities are compiled and archived at the South Dakota State Historic Preservation Office. This practice has produced a detailed data base for archaeological and historic resources in the state, including both the original paper and photographic records and digitized versions of them that can be stored and sorted using computers. The South Dakota State Historical Society and National Park Service have also sponsored overview studies of various geographic areas and site types.

In addition to the records and reports prepared for compliance with laws and regulations, research concerning South Dakota's historic and archaeological resources has appeared in published form. Books, academic journal articles, monographs, and even newspaper articles are another basic source for the information presented here. Other sources of information include formal and informal histories, Lakota and Mandan winter counts (abbreviated chronologies of those groups' histories), and other books and reports on regional archaeology and history. For the earlier periods of state history, archaeological research yields the most important source of information. For the last few centuries of South Dakota history, by contrast, many different kinds of sources are available to use in reconstructing the past. These include historical documents, oral histories, government and church records, and archaeological data.

Reports on regional archaeological surveys are another important source of information for this document. These include overview reports for the White River Badlands Region (Hannus *et al.* 2003), the Upper and Lower Big Sioux Regions (Winham 1990), the Belle Fourche Region, the Lower James Region, the Middle James Region and the Upper James Region. In addition, federal agencies (US Army Corps of Engineers, Custer Gallatin National Forest, Black Hills National Forest, and Nebraska National Forests and Grasslands) have commissioned overview studies of the Missouri River region (US Army Corps of Engineers 2004), northwestern South Dakota (USDA Forest Service 2005), the Black Hills (Rom, Church, and Church 1996) and southwestern South Dakota (Prentiss and Rosenberg 1996). Dissertations and theses are another source of information for South Dakota archaeology. These include studies by Holder (1951), Deetz (1965), Wood (1965), Krause (1962, 1967), Colman (1968), Jantz (1964, 1970), Lyon (1970), Weakly (1971), Kenne (1973), Lin (1973), Nickle (1974), Ahler (1975), Berry (1978), Johnson (1977, 1979), Dietrick (1980), Lass (1980), Orser (1980), Tiffany (1980), Alex (1981), Willey (1982), Symes (1983), Zobeck (1983), Bumsted (1984), Chevance (1984), Puslarich (1984), Hannus (1985), Tratebas (1986), Anfinson (1987), Ramensofsky (1987), Rogers (1987, 1990), Abbott (1989), Sundstrom (1989), Steinacher (1990), Toom (1979, 1992), Rosebrough (1994), Brooks (1995), Galan (1996), Sheveland (1996), Kendall (1997), Dasovich (1998), Dunn (1998), O'Neal (2001), Drennen (2002), Bales (2003), Heimstra (2003), Campbell (2006), S. LeBeau (2009), A. LeBeau (2010), Karnopp (2010), Winter (2010), Weathermon (2011), Patton (2013).

Information from avocational artifact collectors has been included here only when it has been independently verified by professional archaeologists. Earlier versions of the document included more information from collectors; however, much of this has proved unreliable and is not repeated here.

## **Organization of the South Dakota State Plan for Archaeological Resources**

This document is one in a series of documents that form the South Dakota State Historic Preservation Plan. The overall historic preservation plan can be viewed and downloaded at [https://history.sd.gov/preservation/docs/2016-2020\\_HP\\_Plan\\_Final\\_Dec4\\_2015.pdf](https://history.sd.gov/preservation/docs/2016-2020_HP_Plan_Final_Dec4_2015.pdf) (*right click to open*). The state plan document addresses research and management issues in a practical format that can easily be updated and amended. The State Plan includes an introductory section that gives background information on the planning process, the legal basis for cultural resource management, preservation goals and policies in South Dakota, and an overview of the state's history and cultural resources. This is followed by a discussion of several topics identified in earlier versions of the state plan as critical to effective research and management, and a list of research questions pertinent to the state as a whole. The main document is organized by historic contexts, each summarizing an archaeological period, an archaeological region, or a property type. A historic context synthesizes information about a related set of historic resources. A context discusses archaeological units related by geography, time, form, or function.

South Dakota has been divided into 24 archaeological regions (Buechler 1984a). These regions correspond to major drainage basins and environmental zones. The regions thus group together sites that are geographically clustered and similar in their environmental setting. This document lists the archaeological periods and property types known for each archaeological region, as well as a series of research questions for each. This information allows archaeological regions to serve as management units for planning.

## **History of the State Plan Document**

This document is the second major revision of the Management Plan for Archaeological Resources in South Dakota, also referred to as the State Plan. The management planning process began early in the 1980s with funding from the South Dakota State Historic Preservation Center (now, South Dakota State Historic Preservation Office) to initiate what was then called the Resource Protection Planning Process (RP3). The National Park Service initiated the RP3 program as a comprehensive heritage resource management process to identify and organize information about a state's cultural resources (archaeology, history, and architecture). This would enable resource managers to make reliable decisions and recommendations about the identification, evaluation, and protection of cultural resources (US Department of the Interior 1980:1).

University of South Dakota Archaeology Laboratory personnel under the direction of Larry Zimmerman prepared some draft statements and outlines for RP3 between 1981 and 1983. These drafts explained that the document would be organized by geographic regions roughly corresponding to drainage basins and by time periods. In 1984, archaeologists from the Archaeological Research Center, South Dakota Historical Preservation Center (State Historic Preservation Office, US Army Corps of Engineers, US Forest Service, Augustana College, and Dakota Research Services set a framework for the first state-wide cultural resources management plan. Based on this framework, Jeffrey Buechler of Dakota Research Services drafted the first management plan.

South Dakota was divided into 24 study units or regions that generally correspond to drainage basins. Within each region the cultural resources were then assigned to time periods. These periods corresponded to major cultural ages: pre-5000 BCE, Paleoindian; 5000–3500 BCE, Early Archaic; 3500–1500 BCE, Middle Archaic; 1500 BCE–900 CE, Late Archaic-Woodland; 900–1700 CE, Late Prehistoric and Plains Village; 1700–1861 CE, Protohistoric; and post-1861 CE, Historic. This system avoided problems caused by use of competing taxonomic systems and placed the data into manageable units even when knowledge was insufficient to define specific phases or complexes within the larger periods. The draft document was distributed for comment in 1985–86. Most of those commenting called for additional detail, but some objected to the structure of the document. One problem was that the regional study units conformed more to management needs than to historical reality; similarly, some archaeologists felt that assigning exact time spans to various cultural developments obscured regional differences in the timing of various developments such as adoption of the bow and arrow and the time of first non-Indian settlement. Other archaeologists called for special site types, such as burials and rock alignments, to receive separate discussion apart from the regional and time period summaries.

A group of 11 archaeologists met in 1986 to resolve these problems. Much of their discussion centered on how to structure the State Plan, what terminology to use, and how to define and label important cultural developments. The participants decided to change the term *study unit* to *archaeological region*.” In order to accommodate both banks of a drainage within one region, such boundaries were moved one mile to the east or south. The participants also agreed to update the draft document on an individual basis rather than through meetings. Each participant was to update the discussion of one or more archaeological regions to address the comments received. They were to decide on a specific format for updating all archaeological regions by the end of 1987. They were to define phases, provided professional archaeological publications documented them or the participant could define such phases from research in the region. The updates were also to note which sites in each region were in the National Register of Historic Places.

Lack of funding, increasing demands on the archaeologists in the state, and personnel shifts halted progress on the updates. Eventually the Archaeological Research Center received a grant to update the document and subcontracted with the Archeology Laboratory of Augustana College to complete the project. A draft of the State Plan was circulated to over 25 institutions and individuals in October 1989. In 1990, authors R. Peter Winham and L. Adrien Hannus revised the document to address colleagues’ comments. The revisions focused on standardizing the formats used, clarifying the role of the document in the National Park Service planning process, identifying areas for future work, basic editing, and providing an updated bibliography.

By 2007, cultural resource managers again called for revision of the State Plan. In the intervening years, archaeologists had completed many large- and small-scale projects. Large portions of the public lands within South Dakota had been formally inventoried. New information and new methods of analysis, based on Geographic Information Systems analysis, boosted knowledge of the state’s archaeology and other cultural resources. New historic context documents provided overviews of various aspects of South Dakota’s heritage. New policies and regulations governed cultural resource management. It was, literally, time to rewrite history. The Bureau of Land Management, recognizing the need for current information to use in preparing environmental impact statements and in evaluating the significance of sites lying within federal project areas, contracted with the Archaeological Research Center to update the State Plan. The Archaeological

Research Center contracted with Linea Sundstrom of Day Star Research to update those portions of the State Plan relevant to Bureau of Land Management resource management activities and to write a summary of the state's cultural resource regulations and data for use in preparing environmental impact statements. The 2008 update included the archaeological regions west of the Missouri River and the two central Missouri River regions.

The current version updates the 2008 version and adds the remaining archaeological regions.

## **Purpose of the State Plan**

The State Plan is designed to define goals, both general and specific, relating to the management of archaeological resources; to set priorities for meeting these goals; and to present realistic measures to attain them. It describes known archaeological resources in the state and a summary of past cultural resource activities, such as surveys, excavations, and collections research. This information is presented in three sections of the document. Sections IV, V, and VI discuss a series of archaeological contexts: that is, summary discussions of particular periods, regions, and site types. Contexts are a means of placing information about a particular site or set of sites into a larger framework. They allow the resource manager to see how the site or sites contribute to an understanding of human history in the state. Section IV includes information on the various temporal periods used in South Dakota's archaeology. Section V reviews various types of archaeological sites in the state. Section VI presents information specific to each of South Dakota's 24 archaeological regions. Section VI also describes the extent of previous work in a specific region and the chronological range of known sites in that region.

The State Plan is a public document. Its purpose is to enable preservation planning and to help cultural resource managers identify, analyze, and determine the historic significance of groups of related archaeological resources. Upon establishing a site's significance, cultural resource managers can plan for site preservation. The State Plan can also aid cultural resource managers in promoting responsible use of archaeological resources in research and public education.

Historic preservation and cultural resource management personnel should use the State Plan to guide their decisions and actions. This includes individuals, businesses, and colleges that provide cultural resource management (CRM) services to assist agencies or companies in compliance with federal and state historic preservation laws and regulations. The results from cultural resource management projects provide much of the State's cultural resource database. The State Plan will help resource managers to make informed recommendations about cultural resources. Academic institutions and individual researchers studying South Dakota archaeology can use the State Plan for general overview of topics related to their research and as a starting point for building a research bibliography. Applicants for federal and state assistance, permits, licenses and other approvals can use the State Plan to make a preliminary assessment of the cultural resources in their proposed project area. The plan is not intended as a set of guidelines for such agencies and individuals with regard to meeting criteria for review and compliance with laws and regulations.

The State Plan should be consulted and used whenever any of the following activities are undertaken:

- Archaeological resources survey.

- Archaeological resources evaluation for National Register eligibility.
- National Register nomination preparation.
- Preparation of State Historic Preservation grant applications.
- Preparation of historic preservation planning activities.

In summary, this document provides cultural resource managers and the public access to information compiled by the South Dakota State Historical Society. This allows researchers and cultural resource managers to understand how preservation decisions are made and to apply the plan to the archaeological resources with which they are concerned. The State Plan presents archaeological resources as a coherent whole rather than as individual pieces. Putting the resources into historic context allows cultural resource managers to set goals and to outline methods and priorities for achieving them. Such planning allows researchers and resource managers to organize material, goals, and priorities and to present them in a comprehensive way to outside funding agencies, decision-making bodies, and the public. In short, a well formulated plan shows that researchers and resource managers understand their material in terms of goals, actions, and recommendations.

## **The Legal Basis for Historic Preservation in South Dakota**

Various laws, regulations, and policies inform management of cultural resources on public lands. These establish cultural (sometimes referred to as “heritage”) resource management practices. The most important of these, followed by their legal citations, are:

*Federal Antiquities Act of 1906 (54 USC 320301-320303 and 18 USC 1866(b)).* Prohibits excavating, removing, damaging or destroying historic and prehistoric items, ruins, fossils, or monuments on federally controlled land. Provides for a permit system for excavating and collecting by qualified researchers from museums and universities on condition that the project be done for the public benefit and the data be placed in a public repository.

*Historic Sites Act of 1935 (54 USC 320101-320106).* Provides for protection of historically significant archaeological sites, buildings, and objects through restoration, reconstruction, rehabilitation, and preservation of resources of exceptional value to understanding US history.

*Reservoir Salvage Act of 1960, as amended by Archeological and Historic Preservation Act of 1974 (54 USC 312501-312508).* Intended to preserve archaeological data that would otherwise be lost to federal dam construction and other federal projects.

*National Historic Preservation Act of 1966, as amended (54 USC 300101 et seq).* Intended to preserve historical and archaeological sites in the United States through the establishment of various preservation programs.

*National Environmental Policy Act of 1969 (42 USC 4321 and 42 USC 4331-4335).* Mandates that federal agencies assess the environmental impacts of a proposed federal action. The assessment includes impacts on historic and cultural resources

*Executive Order 11593, Protection and Enhancement of the Cultural Environment, (1971).* Requires federal agencies to locate, inventory, and nominate to the National Register of Historic Places all potentially eligible historic properties under their jurisdiction.

*Federal Land Policy and Management Act of 1976 (P.L. 94-579; 90 Stat. 2743; 43 USC. 1701).* Requires formal land-use planning for federally administered lands. This is to take into account future uses, as well as natural and cultural values, and to ensure sustained yield of resources and management of federal lands for multiple uses.

*American Indian Religious Freedom Act of 1978 (P.L. 95-431; 92 Stat. 469; 42 USC. 1996).* Provides for Native Americans to have access to their sacred places and requires that federal agencies consult with interested American Indian (or Native Hawaiian) religious practitioners on any undertaking that affects such places.

*Archaeological Resources Protection Act of 1979 (16 USC. 470aaa –mm).* Prohibits unauthorized excavation on federally administered lands; establishes standards for authorized excavation; sets civil and criminal penalties for damage to archaeological resources; and requires agencies to identify archaeological sites.

*Abandoned Shipwreck Act of 1987 (43 USC. 2101–2106).* Asserts US government ownership of shipwrecks on or imbedded in submerged state lands. Ownership of such sites reverts to the state for their management in most cases, but is retained by the US government for sites on public lands. Tribes hold title to shipwrecks on Indian lands. To implement this law, the National Park Service was charged with preparing guidelines for state and federal agencies regarding management of shipwreck sites.

*Native American Graves Protection and Repatriation Act of 1990 (25 USC 3001-3013).* Requires agencies to consult with appropriate Indian tribes (including Alaska Native villages and Native Hawaiians) before excavation or removal of human remains, associated grave goods, or items of cultural patrimony, and provides for the repatriation of such items to descendent tribes. A 1992 amendment extended the provisions of NAGPRA to cultural items and properties of religious or cultural importance to Native American groups. NAGPRA also requires agencies to consult with tribes before issuing excavation permits for federal or tribal land.

*American Battlefield Protection Act of 1996 (54 USC 308101-308103).* Encourages protection, planning, and interpretation at historic battlefields and provides limited funding for citizens, agencies, and state and local governments toward that goal.

*Executive Order 13007, Providing for American Indian and Alaska Native Religious Freedom and Sacred Land Protections, (1996).* Requires federal agencies to accommodate American Indian access to, and ceremonial use of, sacred sites on federally administered lands, to avoid affecting the physical integrity of such places, and to keep their locations confidential.

*Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, (2000).* Requires federal agencies to consult with Indian tribes on policies that have implications for tribes and to avoid imposing unfunded mandates on Indian tribes.

*Executive Order 13195, Trails for America in the 21st Century, (2001).* Promotes development and enhancement of recreational trails.

*36 CFR Part 800, Protection of Historic Properties.* Authorizes the Advisory Council on Historic Preservation's "Section 106" regulations, requiring federal agencies to identify historic properties, assess effects of federal undertakings on them (including indirect effects such as noise and view obstruction), and resolve any adverse effects. This applies to historic properties listed in, or eligible for listing in, the National Register of Historic Places.

*36 CFR Part 60, National Register of Historic Places.* Authorizes and expands the National Register of Historic Places, as well as clarifying the nomination and listing process.

*39 CFR Part 63, Determinations of Eligibility for Inclusion in the National Register.* Provides criteria for determining National Register eligibility.

*43 CFR Part 7, Protection of Archaeological Resources.* Establishes uniform procedures for implementing the provision of the Archeological Resources Protection Act of 1979.

*South Dakota Codified Law 1-19A-11.1.* Requires the State, or any political subdivision of the State, to notify the Office of History of projects that have the potential to damage, destroy or encroach upon properties listed in the State or National Register of Historic Places. *South Dakota Codified Law 34-27-22 through 34-27-28.* Prohibits the sale, barter, or display for profit of human skeletal remains or associated funerary objects from the state. Prohibits disturbing burials or removing anything from them. Requires any person finding a burial to report the find immediately to a law enforcement officer. Directs law enforcement personnel to notify landowners and the coroner of any such discovery. This applies to remains found on or in any land, private or public, in South Dakota. Requires notification of the state archaeologist within 15 days of discovery of such remains.

*South Dakota Codified Laws 34-27-31 through 34-27-32.* Requires state-supported educational institutions and museums to contact the state archaeologist within 15 days of discovery or acquisition of human remains or associated funerary objects from South Dakota. Requires the state archaeologist, in consultation with the Office of History, to identify the remains and objects within one year of this initial contact. If the remains have a direct relationship to a tribe, the state archaeologist notifies the tribe and to return the remains to the appropriate tribe upon their request. If the remains are not associated with a known tribe, or if the appropriate tribe does not request their return, the state archaeologist is responsible for their final disposition. This applies to remains found on or in private and public lands in South Dakota.

In addition, some federal agencies have developed alternative procedures in consultation with the State Historic Preservation Office and the Advisory Council on Historic Preservation to implement Section 106 of the National Historic Preservation Act through the development of programmatic agreements.

The complete texts of the federal laws and regulations listed above are available online at [www.nps.gov/subjects/historicpreservation/laws.htm](http://www.nps.gov/subjects/historicpreservation/laws.htm). The Advisory Council on Historic Preservation maintains a summary of historic preservation case law at [www.achp.gov/pubs.html](http://www.achp.gov/pubs.html) (*right click to open web pages*).

## Standards for Preservation Planning

The basic legal instrument for evaluating and protecting historic properties is the National Register of Historic Places, administered by the US Department of the Interior, National Park Service. The State Plan is designed to meet specific National Park Service standards: to facilitate statewide planning and protection of resources; to respond to the needs of its users; and to outline intelligible approaches to attaining the stated goals.

The Secretary of the Interior's *Standards for Preservation Planning* (48 CFR, No. 190, Part IV) define preservation planning as:

...a process that organizes preservation activities (identification, evaluation, registration and treatment of historic properties) in a logical sequence. Preservation planning is based on the following principles: Important historic properties cannot be replaced if they are destroyed. Preservation planning provides for conservative use of these properties. To make responsible decisions about historic properties, existing information must be used to the maximum extent and new information must be acquired as needed. Preservation planning includes public participation. Preservation planning can occur at several levels or scales [US Department of the Interior 1983:4471644717].

Two Documents, *South Dakota State Plan for Archaeological Resources* and *Historic Contexts for Historic and Architectural Resources in South Dakota* (South Dakota Historical Preservation Center 1989) provide information essential for implementing the National Park Service comprehensive preservation planning program. Five areas of activity are recognized as constituting planning:

1. Identification or survey.
2. Evaluation (determining the historic significance) of resources.
3. Registration or listing in the National Register of Historic Places.
4. Documentation or more thorough recording and analysis.
5. Treatment, which can be a wide range of preservation activities from development plans to restoration.

The State Plan for Archaeological Resources is most useful in carrying out the activities of identification, evaluation, and registration.

## Significance and Evaluation

Central to the planning process is determining the historic significance of any given cultural resource. The following *evaluation criteria* are used to determine the significance of cultural resources and their eligibility for listing in the National Register of Historic Places (36 CFR Part 60.4):

The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and

(a) that are associated with events that have made a significant contribution to the broad patterns of our history; or

(b) that are associated with the lives of persons significant in our past; or

(c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

(d) that have yielded, or may be likely to yield, information important in prehistory or history.

*Criteria considerations:* Ordinarily cemeteries, birthplaces, or graves of historical figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original locations, reconstructed historic buildings, properties primarily commemorative in nature, and properties that have achieved significance within the past 50 years shall not be considered eligible for the National Register. However, such properties will qualify if they are integral parts of districts that do meet the criteria or if they fall within the following categories:

(a) A religious property deriving primary significance from architectural or artistic distinction or historical importance; or

(b) A building or structure removed from its original location but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with a historic person or event; or

(c) A birthplace or grave of a historical figure of outstanding importance if there is no appropriate site or building directly associated with his or her productive life; or

(d) A cemetery which derives its primary significance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events; or

(e) A reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived; or

(f) A property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own exceptional significance; or

(g) A property achieving significance within the past 50 years if it is of exceptional importance [36 CFR Part 60.4].

Archaeological sites are most often evaluated under Criterion D, "...have yielded, or may be likely to yield, information important in prehistory or history." The key word is "important" (Butler 1987). Cultural resource managers, field archaeologists, and federal and state agency personnel initially evaluate a site's importance, or lack thereof, to an understanding of state or regional history. Ultimately, it is the responsibility of the federal agency to determine if a site meets any of the National Register criteria and to consult with the State Historic Preservation Office or Tribal Historic Preservation Office. If the federal agency and State Historic Preservation Office or Tribal Historic Preservation Office disagrees with the determination of eligibility, an official determination can be obtained from the National Park Service. These determinations affect future research, because they largely determine which sites will be preserved and available for later studies (McGimsey and Davis 1977:29). This research potential is generally the most important factor in evaluating archaeological sites.

Understanding the research potential of a site requires a grasp of current research problems, trends in research and techniques for analysis, and how archaeological sites form and change over time. For example, what is observed during a surface survey does not necessarily reflect the significance of a site. A single flake in a plowed field may represent the first disturbance to an otherwise pristine buried site; conversely, a dense surface artifact scatter may be all that remains of a once large, complex site. The latter has little research potential, because it is impossible to separate materials from different periods, but the former would be a highly significant cultural resource.

The potential for well preserved, historically significant buried archaeological deposits is great in many areas of South Dakota. It is important that site evaluations be based on examination of deposits below the surface. This can be accomplished through small-scale excavations or study of portions of the site with subsurface exposures, such as gullies or even animal burrows. It is also important that field archaeologists understand how sediments are deposited and eroded. Test excavations must extend to the level of bedrock or glacial deposits too old to contain archaeological materials. It is not enough simply to dig until the artifacts run out, because archaeological deposits are often separated by sediments that do not contain artifacts or features. For example, in an area subject to flooding or landslides, an archaeological deposit may be covered by flood deposits or large amounts of hill slope sediments; later archaeological deposits may then form on top of the non-archaeological sediment layer.

## **Statewide Goals for Archaeological Resources and Site Preservation**

Earlier versions of the South Dakota State Plan for Archaeological Resources list a series of goals regarding archaeological resources and preservation of archaeological sites in the state. These goals overlap somewhat with those set by the South Dakota State Historic Preservation Office, but specifically address archaeology. An assessment of progress toward each since 1991 follows the list.

- To preserve significant cultural resources within each defined archaeological context.

- To promote academic research about South Dakota's cultural resources by encouraging expansion of undergraduate and graduate degree programs in archaeology, anthropology, and cultural resource management in the state.
- To educate the public about the past, through cooperation with museums and cultural heritage centers.
- To continue improving criteria for evaluating site preservation goals.
- To continue expanding American Indian interest and direct involvement in archaeology.
- To disseminate information about the cultural resources of the state widely and professionally.
- To promote the South Dakota Archaeological Society and its associated chapters and expand avocational participation in the preservation process.
- To increase resources (money and people) available to address preservation goals.

*Preservation of Sites from Each Context.* This goal has been attained only by chance. The decision to preserve any given site has rested on its information potential (National Register Criterion D), but this has been determined largely outside the larger context of South Dakota and regional archaeology. In general, sites with intact buried deposits, features, and datable materials have been considered for preservation without regard to their age or location. A particular problem in this regard is the ubiquitous site: stone circles, homesteads, and railroads. Because these sites are so common, the tendency has been to devalue their historic significance, rather than considering whether they deserve preservation as examples of a larger historic trend. At the same time, archaeologists have determined as National Register eligible most sites with a high degree of integrity and information potential and have recommended their preservation by avoidance or further investigations designed to mitigate the loss of information resulting from their disturbance or destruction. Although looting and vandalism continue to threaten the state's archaeological resources, successful prosecutions and out-of-court settlements have raised public awareness of preservation laws (*South Dakota Archaeological Society Newsletter* June-Sept 2011, pp. 2–3).

*Academic Programs in Anthropology and Archaeology.* South Dakota colleges and universities still have few opportunities for students to earn degrees in anthropology or archaeology. The University of South Dakota offers a bachelor's degree in anthropology, as does Augustana College. Northern State University offers a certificate program in public history, which includes some training in archaeology. The state still lacks graduate programs in anthropology, archaeology, or cultural resource management. The South Dakota Archaeological Society and the USDA Forest Service have active and highly successful programs to involve volunteers in archaeological survey, excavation, and laboratory analysis.

*Tourism and Public Education.* A goal was to include historic preservation and public education in tourism strategies. Since 1991, additional opportunities for tourists to experience South Dakota's past have been developed. Fort Sisseton State Park and Fort Pierre Chateau present both documentary history and archaeology in their interpretive materials. The Mitchell Prehistoric

Indian Village allows tourists to view an archaeological excavation, a village site, and a reconstructed earth lodge, as well as to participate in hands-on educational activities. An informational kiosk was constructed for Ft. Pierre Chateau and another may be developed at the Movie Draw Site in Custer State Park. Pipestone National Monument, the Jeffers Petroglyphs, the Vore Buffalo Jump, and the Hudson-Meng Site are open to visitors just outside state lines. Although these resources are not within South Dakota, their close proximity promotes an understanding of cultural resources that carries across state lines. The state's tourism web site lists opportunities for tourists to participate in archaeological excavation projects. The Journey Museum in Rapid City includes an archaeology exhibit, as well as interactive exhibits about the history and native cultures of the Black Hills. The bicentennial of the Lewis and Clark expedition boosted interest in South Dakota history. The South Dakota Department of Tourism has developed tourist information specific to that theme, including tours, brochures, children's activity books, and trip planners.

South Dakota state parks have developed new interpretive materials on prehistoric sites, American Indian cultural history, the Lewis and Clark Expedition, and other aspects of the state's history. Visitor centers at Bear Butte, Fort Sisseton, Lake Poinsett, Farm Island, Adams Homestead and Nature Preserve, Custer State Park, Hartford Beach, Lake Herman, Oakwood Lakes, Spirit Mound, West Whitlock, Shadepill Reservoir, Randall Creek, and other state parks encourage visitors to explore state and regional history.

An important development is what might be called history-oriented service tourism. Under programs such as Passport in Time, sponsored by local offices of the US Forest Service and the Bureau of Land Management, volunteers spend between one and several weeks working on archaeological surveys, excavation, historic building restoration, historic research, or processing artifacts. Project planners usually arrange for educational programs, field trips, and social events for the volunteers, as well as providing accommodation (camping) and training. Such programs have proved highly successful in western South Dakota. Other programs, such as Earthwatch, that require a participation fee have occurred on a much more limited basis in South Dakota. The South Dakota Archaeological Society sponsors volunteer projects each year, as well. SDAS members are the core of these project crews, but other interested members of the public are invited to participate, as well. SDAS has several active chapters: Middle Missouri, Sioux Falls, Vermillion, Northern Hills, Northeastern Periphery.

A partial list of SDAS projects since 1991 follows:

- 1992–1993 Piedmont Brick Factory
- 1993 Various sites in Harding County along the Sheep Creek Drainage
- 1994 Bloom Village, Hartford Beach Village, Sheep Creek Drainage Late Archaic sites
- 1995 Licking Bison, Chappel Creek Snake Effigy, Hartford Beach
- 1996 Licking Bison
- 1997 Fort Pierre Chouteau, Licking Bison, Hartford Beach
- 1998 Licking Bison, Fort Pierre Chouteau

- 1999 Licking Bison, Fort Pierre Chouteau, Fort Galpin
- 2000 Hartford Beach, Fort Pierre Chouteau, Licking Bison, Movie Draw Rock Shelter
- 2001 Movie Draw Rock Shelter, Chinatown Deadwood, Fort Pierre Chouteau
- 2002 Hartford Beach Village, Chinatown Deadwood, Movie Draw Rock Shelter, Hamburger Mammoth; Minnesota High School Class Excavation and Mapping
- 2003 Hartford Beach, Chinatown Deadwood, Brookings Mammoth, Movie Draw Rock Shelter
- 2004 Brookings Mammoth, Chinatown Deadwood, Hartford Beach, 39HN931, Fort Sully I
- 2005 Westport Site, Fort Sully I, Burgduff Site (Cody bison kill site), Stone Circle Complex, Harding County, Burg Site, Treasure/Crystal Cave
- 2006 Westport Site, Treasure/Crystal Cave, Moss Agate Creek Survey and Testing
- 2007 Westport Site, Cache Salvage Butte County, Fort on Centennial Prairie
- 2009 Gunderson Site, Fort James (Time Team TV Series)
- 2010 Gunderson Site, Fort James (Time Team TV Series)
- 2011 Counce Clovis Site (Fall River County), Fort James
- 2012 Counce Clovis Site (Fall River County), Fort James, Schultz Mammoth (39MD900), Bloom Village
- 2013 Schultz Mammoth (39MD900), Rice Cut Bank (39BT39)
- 2014 Schultz Mammoth (39MD900), Rice Cut Bank (39BT39), Deadwood Rotary Park, Archaeology Camp at Fort Galpin
- 2015 Rice Cut Bank (39BT39), Fort Sisseton, Archaeology Camp at Fort Galpin Great Oasis Village (39ML9), Harding County Survey
- 2016 Archaeology Camp at Fort Pierre II, Harding County Survey
- 2017 Archaeology Camp at Fort Pierre II, Harding County Survey

The SDAS and its local chapters also sponsor public lectures that highlight various aspects of archaeological research and the state's history.

*Evaluating Site Preservation Goals.* No steps have been taken toward this goal.

*Expanding Native American Interest and Involvement in Archaeology.* A more formalized program of tribal consultations has resulted in greater input from the Native American community into preservation policies and management decisions regarding individual sites. Eight of the nine tribal governments in South Dakota have established Tribal Historic Preservation Offices, which allows them to assume all or part of the functions of the State Historic Preservation Office with respect to tribal lands. A multi-year project in Wind Cave National Park directed by Jennifer

Galindo involved students from Sinte Gleska as crew members and Lakota elders as consultants on site and landscape interpretation (Galindo 2004).

*To Disseminate Information about South Dakota Archaeology.* Considerable progress has been made toward this goal. Archaeology Week has proved a popular means for the public to learn about archaeology through hands-on activities. The South Dakota Archaeological Society has expanded its outreach efforts through its newsletter, journal, and public presentations. The State Historic Preservation Office co-sponsors with the US Army Corps of Engineers a three day archaeology camp for kids. The Archaeological Research Center has initiated a series of publications dedicated to making the results of important excavation projects widely available. The Journey Museum in Rapid City includes an exhibit about the archaeology of the region.

*To Promote the South Dakota Archaeological Society and Other Avocational Opportunities.* Much progress has been made toward this goal. Membership in SDAS has remained steady at about 250 over the past decade. Active SDAS chapters include: Middle Missouri, Sioux Falls, Vermillion, Northern Black Hills, and the Northeastern Periphery. Since 1992, SDAS members have had the opportunity each year to participate in at least one, and as many as six, field projects. Others have participated in laboratory work such as processing and cataloging artifacts. Volunteers have helped with a wide variety of excavation projects: the Piedmont Brick Factory, Sheep Creek Sites, Bloom Village, Hartford Beach Village, Licking Bison, Fort Pierre Chouteau, Fort Galpin, Movie Draw, Deadwood Chinatown, Brookings Mammoth, 39HN931, Summit Spring, Westport, Fort Sully I, Burgduff, Stone Circle Complex, Burg, Treasure Crystal Cave, the Butte County Cache, 39PO79, Gunderson Site, and Centennial Prairie fortification. SDAS members have helped with the annual Island in the Plains Archaeological Symposium since 1992, as well as assisting with all aspects of the 2007 Plains Anthropological Conference. Local chapters host public lectures throughout the year.

Custer Gallatin National Forest, Black Hills National Forest, and Nebraska National Forests and Grasslands have sponsored many fieldwork opportunities in South Dakota under the national Passport in Time (PIT) program. These include: rock art surveys in the Cave Hills; survey and excavation projects in the Cave Hills, Slim Buttes, and Short Pines; an oral history project in the Slim Buttes area; survey and testing along Moss Agate Creek in southwestern South Dakota; rock art recording in the Black Hills; and excavation projects on historic and prehistoric sites throughout the Black Hills.

*To increase resources for historic preservation in South Dakota.* Regarding the Archaeological Research Center, this goal has not been achieved. In real money terms, and as a percentage of the state budget, funding for the Archaeological Research Center has remained about the same.

## **Current Assessment of South Dakota's Archaeological Preservation Program**

South Dakota possesses cultural resources of local, national, and international significance. Sixteen properties are National Historic Landmarks; 45 properties are listed in the South Dakota Register of Historic Places; and 1236 properties are listed in the National Register of Historic Places. Significant cultural resources are distributed throughout the state. Certain cultural resources lend themselves well to public education and tourism and are easily accessible, such as

the Mitchell Prehistoric Indian Village and Forts Sisseton, Randall, and Sully. Fort Pierre Chateau will soon have additional interpretive materials. The Missouri River area of South Dakota contains many large prehistoric horticultural villages. Archaeologically, it is a highly significant region for the study of sedentary villages as a way of life. South Dakota has a small but strong core of public support for preservation activities, such as Archaeology Days. Historical projects are generally favorably received, and the legislature is disposed to assisting preservation through tax incentives and enabling statutes. Federal and state agencies, local governments, and mining companies have cooperated in preservation projects. Many South Dakotans are aware of historic preservation issues and are willing to lend their support to preservation efforts. The South Dakota State Historical Society has many resources to assist with heritage protection.

Since the 1990–91 State Plan update, the South Dakota Legislature has passed laws outlining rules and procedures for preservation of historic property in the state. One set of laws protects burials, human remains, and funerary objects from being disturbed, looted, or sold (SD Codified Law 34-27-22 through 34-27-28, 34-27-31 through 34-27-32). Another requires state agencies to notify the Office of History of projects that have the potential to damage, destroy or encroach upon properties listed in the State or National Register of Historic Places (SD Codified Law 1-19A011.1)

Major advances have been made in archaeological research and resource management since the 1990–91 State Plan. Professional research on geomorphology (the study of the formation of surface features and soils), prehistoric archaeology, excavation and survey techniques, boulder alignment, mounds, and rock art have filled in many of the blanks in South Dakota history. High-accuracy mapping devices and Geographic Information Systems software have greatly increased the accuracy and accessibility of archaeological data.

The compliance review process in South Dakota, as elsewhere, has benefited from better guidance and training from the National Park Service and the Advisory Council on Historic Preservation. Many Indian tribes now have Tribal Historic Preservation Officers, and government-to-government consultations on federal projects that involve cultural resources of interest to American Indians are now standard practice. Under the Native American Graves Protection and Repatriation Act, agencies have a standard procedure for the treatment of human remains and associated grave goods. NAGPRA has given American Indians control over the disposition of their ancestors' remains. Since South Dakota had process for consultation and repatriation of human remains as early as 1972, NAGPRA has had the effect of taking away state and local control of the process and complicating what had been a simple and workable compromise between cultural resource managers and Indian tribes; however, this federal law brings a more uniform process to the treatment of human remains and more closely follows the wishes of today's American Indian communities. The Archaeological Research Center has expanded its curation facilities and has established detailed guidelines for site records and curation of artifacts, notes, records, and photographs. Some portions of the archaeological collections from the W.H. Over Museum in Vermillion have been transferred to the Archaeological Research Center for conservation and curation.

## II. HISTORIC AND CULTURAL RESOURCES IN SOUTH DAKOTA

### History of Archaeology in South Dakota

The following discussion relies heavily on *A History of South Dakota Archaeology*, by Mary Keepers Helgevold (South Dakota Archaeological Society 1981). Readers are referred there for more detail on pre-1980 developments in how researchers approached the state's archaeological record.

South Dakota is rich in archaeological material. Despite its importance to understanding Great Plains prehistory, archaeological study of the state has historically been sporadic and unsystematic. The history of archaeological study of the area can be divided into five stages. The first, from about 1874 to the early 1900s, was a period of sporadic and rather disorganized exploration and initial description of the archaeological resources of the state. The second, from about 1910 to 1946, was devoted to compiling basic evidence on prehistoric life in South Dakota, generally motivated by curiosity, a desire to accumulate specimens for local and state museums, and to provide jobs for young laborers under government relief programs such as the Works Project Administration. Salvage archaeology related to hydroelectric dam construction dominated the next stage of South Dakota archaeology. This was a period of continued exploration and description under the auspices of the Smithsonian Institution and the National Park Service, culminating in attempts to develop new classification systems for the information collected or to apply classification systems that had been developed for other regions of the Great Plains. The fourth stage of archaeological study of the project area, beginning about 1971 and continuing to the present, comprises a large number of small projects conducted to satisfy the requirements of the National Historic Preservation Act of 1966 and subsequent federal legislation. The fifth and most recent stage began around 1978 and continues to the present. More problem-oriented approaches, as opposed to description and classification, were employed in archaeology projects in the state in this period. The most recent stage also saw the development of studies that attempted to draw together large bodies of archaeological information into comprehensive statements about the prehistory of all or portions of South Dakota.

The first archaeological explorations in South Dakota were undertaken incidental to expeditions sponsored by the federal government and natural history museums to gather information about this relatively unexplored portion of the West. The first descriptions of Indian ruins in what is now South Dakota are in the journals and reports of the Lewis and Clark Expedition. William Clark included abandoned villages on his maps of the Missouri River (Thwaites 1904–05:134–137). With one exception, Clark attributed these to the tribes still living in the region at the time. Other travelers to the region also noted the abandoned villages and fortifications. These included Prince Maximilian, Carl Bodmer, and Carl Wilhelm (Helgevold

1981:5–6). In 1855, Lt. G.K. Warren travel to the Fort Pierre area to scout a location for a military fort. He noted the abandoned villages along the river, and attributed them to the Arikaras. The fortifications, he speculated, were actually natural features caused by wind-blown sediments (Warren 1922:187). A decade later, geologist Ferdinand Hayden concurred with this opinion, believing the area had been uninhabited until recently (Hayden 1867:28–29). While surveying for a road in 1857, William H. Nobles noted numerous campsites and fortified villages near the Missouri and James rivers (Nobels 1912:197). Military physician A.I. Comfort carefully excavated mounds in northeastern South Dakota in the late 1860s; he identified some as burial mounds and some as house remains and attributed all to American Indians (Comfort 1869:160). This conflicted with the current popular assertion that an extinct race of “Mound Builders” had created these and other sites.

The Black Hills Expedition of 1874, led by Lt. Colonel George A. Custer, purportedly was undertaken to assess the natural resource potential of the Black Hills, which was Indian land at the time. In fact, the real purpose was to investigate rumors of rich gold deposits. In his report, the expedition naturalist, William Ludlow, mentioned the presence of old campsites and trails in the vicinity of Red Canyon in the southern Black Hills (Ludlow 1875). At the time, the government was mainly interested in these in reference to finding a militarily defensible trail into the interior Black Hills, and Ludlow made no attempt to establish when or by whom the remains were made. Col. Richard I Dodge also observed recently abandoned camps, trails, and a “medicine lodge” when he explored portions of the Black Hills in 1875 (Dodge 1996).

In the White River Badlands, rich and conspicuous fossil deposits had drawn the attention of scientists from the early days of non-Indian exploration. By the 1840s, universities and museums had begun to launch collecting expeditions into the area (cf. Leidy 1847; Prout 1846, 1847). Geologists soon noticed hearths eroding from the younger terrace exposures. These were reported as possible means of dating the buried soils exposed in the terrace banks. The earliest published report on Badlands archaeology described a soil one to three meters below surface in a creek terrace near Wounded Knee. This contained pottery, chipped stone artifacts, and seven hearths (Sheldon 1905). The presence of hearths in terrace banks along the upper White River was noted as early as 1891 (Barbour and Schultz 1936).

In the eastern part of the state, surveyor Frank H. Nutter recorded the locations of mounds on the Sisseton Reservation (Nutter 1880:422–427). Henry Montgomery of the University of Toronto Museum studied these and other mounds in northeastern South Dakota in 1883 (Montgomery 1906:640–651), as did William McAdams along the James River in 1886 (McAdams 1886:156–158). Geologist J. E. Todd recorded some boulder effigies near the Missouri River during this period (Todd 1886:1–4, 1912:204–214). From 1881–1895, Theodore Haynes Lewis (T.H. Lewis) of the Minnesota Historical Society recorded mounds and village sites in eastern South Dakota, as part of an ambitious project to record all ruins throughout the Minnesota-Dakota-Iowa region funded by Alfred James Hill, a wealthy Minnesotan. Lewis recorded at least 502 mounds in eastern South Dakota, as well as several boulder effigies (Lewis 1889, 1891, 1898). Several mounds were partially excavated during this period as historians and archaeologists debated the Mound Builder theory, but little was published about them (Helgevoel 1981:9–14). As armchair theorizing yielded to professional excavation projects, the Mound Builder theory gradually gave way to recognition that these ruins were from the ancestors of living Indians (Thomas 1894; Will and Spinden 1906).

After this time of speculation and grand theorizing, South Dakota archaeology settled down to more scientifically-based inquiry. In 1913, self-educated naturalist William H. Over (W. H. Over) took on the task of establishing a museum at the University of South Dakota to showcase the state's natural and archaeological history. (This museum was referred to as the University of South Dakota Museum or simply the "state museum," until 1949, when it was renamed the W.H. Over Museum.) Over quickly gained expertise in archaeology, both by investigating sites himself, including surveying the Missouri River banks from a homemade boat, and by visits from and correspondence with professional archaeologists from nearby states and the Smithsonian Institution. He conducted excavations at many of the village sites, as well as mound sites in southeastern South Dakota and at Ludlow Cave in the northwest. Despite very limited funding, Over began the first systematic attempt to construct a pre-settlement history of the state. He anticipated the later "direct historical approach" to archaeology (Strong 1940) by insisting that historic Arikara and Mandan village sites were the key to interpreting older ruins along the river. He also pioneered research into the Arikara-Pawnee schism, recognizing from language, material culture, and house types that these groups were closely related. Archaeology in the interwar period was hampered by a lack of funding. Drought and local depression in 1910, followed by the dust storms and economic collapse of the 1930s left the state impoverished. Undaunted, Over turned his efforts to public education, using speaking engagements, newspaper articles, and radio interviews to educate the public about the state's rich archaeological heritage and to implore the legislature to pass laws to protect these resources. As a highly intelligent non-academic, Over could span the gulf between the growing professional archaeological community and amateurs who were fascinated by the ruins in their own backyards. With the help of W.D. Strong of the Smithsonian, Over organized the first Plains Anthropological Conference, held in Vermillion in 1931. Over's avid letter-writing and plans for the conference continually drew attention to the complex and intriguing problems of Middle Missouri archaeology in what Waldo Wedel later termed one of the four major archaeological complexes north of Mexico (Wedel 1947:14).

Over attended professional archaeological conferences and encouraged academics to visit South Dakota. William E. Myer of the Smithsonian's Bureau of American Ethnology investigated a possible ancestral Omaha village site near Sioux Falls in 1921 (Myer 1922:117–123). Two years later Matthew Stirling of the US National Museum excavated four sites along the Missouri River (Stirling 1924:66–71). Alfred Bowers of the Logan Museum at Beloit College in Wisconsin excavated burial mounds near Ft. Sully in 1930 and 1931. Reuben Keyes of Iowa worked with Over to study the Mill Creek culture of northwestern Iowa and its relation to proto-Mandan sites on the Missouri River in South Dakota (Helgevoold 1981). In 1932, Strong excavated the Leavenworth Site at the confluence of the Grand and Missouri rivers (Strong 1933: 73–76). In 1938, Over received Works Progress Administration funding for archaeological work in the state, and appointed Elmer E. Meleen to supervise excavations at the Firesteel Creek village at Mitchell in 1938 (Meleen 1938). Later Works Progress Administration funding paid for surveys along the Missouri, James, and Big Sioux rivers, Thomas Creek in Harding County, Sand Creek in Hand County, and portions of the Black Hills. These surveys were followed by excavation of a few sites: Twelve Mile Creek on the James River, Brandon village and Split Rock Creek mounds on the Big Sioux, Thomas Riggs and Bonesteel villages on the Missouri River, and a group of rock shelters on the Cheyenne River in the southern Black Hills. A crew from Columbia University under Albert C. Spaulding excavated at the Arzberger and Buffalo Pasture village sites near Pierre in 1939 and 1940 (Spaulding 1956).

Professional archaeology's interest in South Dakota spilled over into the west-river area. Several reports on archaeological material in terraces of the White River were completed in the 1930s and 1940s (Barbour and Schultz 1936; MacClintock *et al.* 1936; Schultz 1938; Schultz and Stout 1945; Champe 1946). Folsom-Plano materials found with broken bone and hearth features were reported from the White River (MacClintock *et al.* 1936). Other researchers noted the presence of Woodland and Central Plains Tradition pottery in the area (Strong 1940:387; Champe 1946). Along with thousands of artifacts unearthed in the windstorms of the 1930s, these finds confirmed that the state's history extended back many millennia.

Not surprisingly, Over conducted the first formal archaeological explorations in the South Dakota Black Hills. Relying on the help and observations of local informants, Over identified prehistoric stone quarries, rock art, and a possible village in the Black Hills (Over 1924, 1934, 1941, 1948). Also relying on local reports, E.B. Renaud of the University of Denver made brief mention of southern Black Hills sites in his reports on archaeological reconnaissance of the western plains (Renaud 1936). The following year, Renaud's principal Black Hills informant published a short description of archaeological remains in the area (Buker 1937).

In 1938, Over and the University of South Dakota Museum, with Works Project Administration funding, excavated 14 rock shelters in the southern Black Hills (Meleen and Pruitt 1941). Both ceramic-producing and non-ceramic groups had occupied these shelters. Unfortunately, the field notes and most of the artifacts from this project were lost and no complete report was ever prepared. These early studies showed that archaeological remains were present in the area, that these included diverse site types, and that at least some of the sites were prehistoric. The studies were too limited in scope and geographic extent to allow many other conclusions. The assumption that the interior Black Hills were never occupied prehistorically persisted in spite of these early studies, and few professional archaeologists bothered to question this assumption.

During Over's tenure at the University of South Dakota Museum, 1913–1949, South Dakota and the central Great Plains went from archaeological backwaters to the region where a generation of innovative archaeologists would cut their professional teeth on the complex problems of Plains Village archaeology. At the same time, much of the material collected during professional projects ended up in museums in the East (Helgevoid 1981:31–34). Over fought this trend, but without much success.

The second period of archaeological research in the Black Hills saw a frenzy of fieldwork under salvage archaeology programs administered by state and federal agencies. Dominated by projects conducted by the Smithsonian Institution-River Basin Surveys program and the National Park Service, the period from 1946 to 1969 was a time of continued exploration and, more importantly, the first comprehensive attempts to define and classify the various cultural complexes represented by archaeological remains in the state. Construction of hydroelectric dams on the Missouri and other rivers necessitated recovery of information from hundreds of sites that would soon be destroyed or inundated. The Smithsonian Institution and National Park Service cooperated to administer the River Basin Surveys program in South Dakota, which involved not just survey, but major excavation projects. Most of this work focused on the village sites of the Missouri River. Some 85 major sites were excavated and many more surveyed and recorded.

The South Dakota legislature, meanwhile, provided funds from 1947–1959 for a state archaeological commission to excavate sites endangered by dam construction. The total funds for all 11 years was about the same as what the National Park Service spent excavating a single site. The commission excavated only 12 sites. Some of these excavations proved unsatisfactory and had to be redone later (Helgevold 1981:53). Prominent among the state-sponsored excavations were those at LaRoche (39ST9), Scalp Creek (39GR1), Ellis Creek (39GR2), Thomas Riggs (39HU1), Spotted Bear (39HU26), and Rosa (39PO3). The commission issued reports on each of their projects (Hurt 1952, 1953, 1954, 1959; Meleen 1948).

In 1971 Donald J. Lehmer published a comprehensive study of Middle Missouri archaeology based on Smithsonian Institution-River Basin Surveys reports as well as state-funded salvage excavation project (Lehmer 1971). This outlined two major traditions: Middle Missouri and Coalescent, which loosely corresponded to the pre-Mandan and pre-Arikara traditions that Over and other local researchers had long recognized. Each tradition was broken down into periods (Initial, Extended, Terminal) and local phases, based largely on house types and ceramics. Lehmer's classification system is still used, with some important modifications (Figure 1; Henning and Toom 2003; Johnson 2003; Tiffany 2003, 2007).

The reservoir salvage period was perhaps the busiest for South Dakota archaeology, but several major problems and disputes arose from it. First, despite Over's best efforts, state legislation, and federal agency agreements to the contrary, most of the material excavated from the sites went to the Smithsonian, to the regional River Basin Surveys office in Lincoln, Nebraska (now the Midwest Archaeological Center), or to the excavators' home universities. Over and other historians and archaeologists in South Dakota felt that the state's archaeological heritage had been plundered (Helgevold 1981). Second, time and budget constraints meant the vast majority of sites and their contents were destroyed or inundated. Generally, excavations covered only 10 percent of a site, and the upper levels of some sites were simply bulldozed away to get to the lower levels. A third problem is that the Smithsonian Institution-River Basin Surveys program was terminated in 1969, even though the excavators had failed to complete much of the analysis and report-writing. Archaeological data had been saved from the bulldozers only to languish in the basements of museums and universities far from their place of excavation. Finally, archaeologists focused on some areas at the expense of others. As Helgevold (1981:55–58) points out, the area of the Missouri south of Fort Randall dam is very poorly known, because the little work done there was never completed and reported. Lehmer (1971) simply omitted this reach from his Middle Missouri culture subarea; however, this did not solve the bigger problem of fitting data from that reach into the larger picture of Plains Village archaeology.

Based on surveys and excavations at Angostura and Keyhole reservoirs, on the southern and northwestern perimeters of the Black Hills, respectively, Smithsonian archaeologists defined a series of complexes. These complexes could be arranged chronologically. Although radiocarbon dates were not yet available for the area, a clearer outline of area prehistory began to emerge (Bauxer 1947; Beaubien n.d.; Hughes 1949; Hughes and White n.d.; Wheeler 1950, 1957; Mulloy 1954). Hughes and Wheeler proposed a basic sequence for the area, largely extrapolated from better-known areas of the northern plains, thus providing a framework for subsequent research. While some revision has been necessary, their sequence for the west river region has generally stood the test of time.

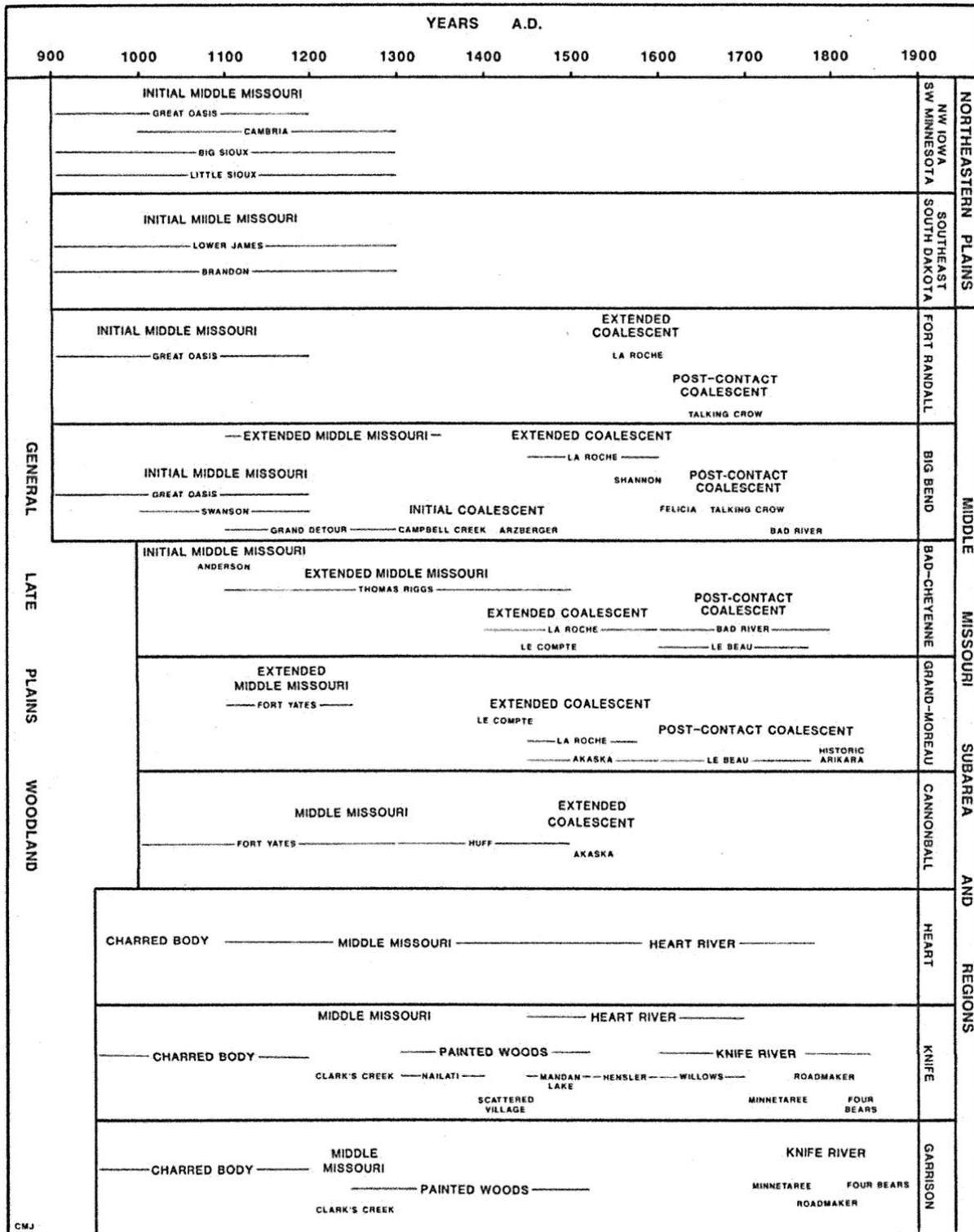


Figure 1. Cultural chronology of the Middle Missouri subarea (C. Johnson 2007:14).

Other federal projects in western South Dakota during this period included investigations in the White River Badlands for the National Park Service. In 1953, Paul Beaubien surveyed the north unit of Badlands National Park, recording about 30 sites (Beaubien 1953). These were generally surface scatters of chipping debris, bone, or ceramics. In 1958, Dee Taylor conducted salvage excavation of sites within the National Monument that were threatened by Park development (Taylor 1961). Taylor discovered evidence of Plains Woodland period use of the area at the Pinnacles site. Excavations at the Johnny site at Cedar Pass indicated connections to Plains Village tradition complexes better defined for the Missouri River area. Based on his investigations in the White River Badlands, Taylor developed a cultural sequence comprising six periods: Early Hunters, Hunters and Gatherers, Hunter and Collectors, Plains Woodland (450–800 CE), Early Plains Village (800–1300 CE), Late Village (1300 CE –contact), and Post-Contact (Taylor 1961). The first of these corresponds to the Paleoindian period; the second to the Middle Archaic; and the third to the Late Archaic defined for other regions of the Great Plains.

The next period of archaeological study, beginning about 1971 and continuing to the present, has been dominated by cultural resource management (CRM) projects. In 1969, the University of South Dakota Museum hired John S. Sigstad as curator of archaeology. Sigstad revived the now defunct archaeological commission, of which he was a member by virtue of his position at University of South Dakota. As the only archaeologist on the commission (the other members were Dayton Canaday, director of the South Dakota State Historical Society, and Robert Wilson, director of the South Dakota Geology Museum), Sigstad became the de facto state archaeologist. The National Environmental Protection Act (NEPA), passed in 1969, required cultural resource surveys are part of environmental impact assessments. Sigstad was charged with doing this work, in addition to his museum duties, and was allocated a small amount of state funds through 1973 for travel and other expenses (Helgevold 1981).

By 1973, meeting the provisions of NEPA clearly necessitated an official, fulltime state archaeologist. The state legislature dissolved the archaeological commission and established the state archaeologist position, with a small budget to set up an office, known as the Archaeological Research Center. At the same time, a Historical Preservation Center was also established, both under the direction of the South Dakota State Historical Society. The latter office was charged with reviewing all reports submitted for review under federal and state preservation laws. Both offices were initially housed at the University of South Dakota in Vermillion, but Sigstad moved the Archaeological Research Center west to an old cavalry post, Fort Meade, where two large barracks buildings owned by the state would provide ample space for labs and storage of collections. The Archaeological Research Center was later moved to its current offices in Rapid City. In 1974, the state legislature approved a law to protect antiquities on state and private lands (South Dakota Session Laws 1974, Chapter 11).

Cultural resource management (CRM) projects dominated this period of South Dakota archaeology. CRM archaeology arose in response to several new federal and state antiquities protection laws and regulations. In particular, the National Historic Preservation Act of 1966 (54 USC 300101 et seq.) and the National Environmental Policy Act of 1969 (42 USC 4321 and 42 USC 4331-4335) outlined procedures for protection of historic resources affected by projects using federal resources. These projects were specifically designed to identify and evaluate sites that might be eligible for inclusion in the National Register of Historic Places. Survey and site evaluation projects were conducted by federal and state agencies, including the US Army Corps

of Engineers, US Forest Service, Archaeological Research Center, Tennessee Valley Authority, Bureau of Reclamation, Bureau of Land Management, National Park Service, and private consultants under contract to the forenamed agencies. The federal agencies placed supervisory archaeologists within their local and regional offices and began to hire seasonal or permanent staff archaeologists to conduct fieldwork and analysis work. The University of South Dakota established an archaeology laboratory to conduct CRM work, soon followed by South Dakota State University and Augustana College. Many other projects involving federal lands or funds were conducted by private consultants hired directly by private companies in advance of planned projects. Local and regional CRM companies sprang up to meet the demand for environmental studies. Reports of these projects number in the thousands. While the number is far too many to list here, major studies are included in the regional summaries presented in Section VI.

In western South Dakota, numerous surveys were conducted to assess the archaeological potential of areas slated for mining exploration and logging. Highways, irrigation systems, picnic grounds, catchment dams, and the like prompted archaeological survey throughout the state. These surveys resulted in the discovery of thousands of previously unrecorded sites and, more importantly, gave the first realistic picture of the distribution and diversity of archaeological remains in the state. CRM archaeologists discovered a wide variety of sites. Most were artifact scatters, representing either special activity areas or larger campsites; many historic sites were found as well. These surveys established that prehistoric sites were present throughout the state and that the entire Great Plains culture sequence, from Paleoindian to Historic, was represented.

Most of the CRM survey reports were descriptive rather than analytical, but all contained information on site morphology, artifact types, and environmental variables. This information would prove invaluable both to future CRM efforts and to the more analytical studies to follow. A few survey projects went beyond the basic site descriptions to include analyses of settlement patterns in regard to distance to water, proximity of natural resources, topographic position, and ecological zonation. Other studies examined tool to debitage ratios as a potential indicator of site function. These were important forays into more analytical studies of area prehistory.

Test-excavation projects followed some of the CRM surveys. Many were done by Archaeological Research Center personnel; in the east, the archaeology laboratories at the University of South Dakota and Augustana College did many projects. While many of the sites were of limited value, others contained intact buried deposits and materials that could be dated or linked to specific Indian nations or language groups. These testing projects served to reiterate the diversity and complexity of South Dakota archaeology, as well as to protect the important sites from unmitigated destruction.

The large amount of data collected during the CRM period of archaeological research in South Dakota spurred an interest in more analytical, problem-oriented studies. The CRM data was largely undigested, but it was sufficiently complete and systematic to allow the formulation of research questions. With the most intense period of CRM projects behind them, archaeologists could adopt a somewhat more studied approach to the archaeology of the state. This period of problem-oriented research, from about 1977 to the present, has included five kinds of studies: intensive excavation of potentially important sites; what can be termed “thematic” surveys aimed at discovering particular kinds of sites; reinvestigation of previously studied sites; syntheses of previously collected data; and multidisciplinary research initiatives.

While area archaeology got off to a slow start, the era of CRM exploration and the more recent problem-oriented studies have resulted in the accumulation of a substantial body of data as well as many reports and publications on South Dakota prehistory and history. Because these raise as many questions as they answer, interest in the archaeology of the state continues to grow.

Two other important developments happened during this period of South Dakota archaeology. First, Indian tribes and individuals protested the excavation, analysis, and long-term storage of their ancestors' remains. This led to a series of painful, but ultimately productive, meetings, public hearings, and legislative actions. Perhaps more significantly, it brought archaeologists to realize that human remains are important to Native people. Whether or not any particular archaeologist agrees with the Indians' grievances or with the policies implemented to address them, he or she is now aware that these remains are not just specimens. Second, it was during this period that local and state archaeological societies began to grow and flourish. These organizations have been important in promoting and conducting archaeological research in the state. Their volunteer hours and funding, along with historic preservation grants administered by the State Historic Preservation Office, have assured that research, as well as CRM work, continues in South Dakota. Interestingly, both of these occurred early in the period, during the early 1970s, when South Dakota archaeology was in a brief lull between the reservoir salvage archaeology days and the boom in CRM work. Although much remains to be done to satisfy Indian demands for more control over their ancestral history, it is fortunate that the dialog began when archaeology in the state was regrouping and redefining its mission.

## **Historic Overview of South Dakota**

Historic preservation policy rests on an appreciation of the complex history of South Dakota, the Great Plains region, and the nation. South Dakota exhibits extreme physiographic diversity, with such varied landscapes as the Black Hills, Badlands, and Cave Hills in the west; the Missouri River Trench in the central area; the James and Big Sioux River valleys in the east; and the prairie pothole region of the northeast. Prehistoric human groups developed special patterns of living for each of these unique environments. South Dakota was home to diverse life-ways over some 14,000 years. Archaeology tells the story of human creativity in adapting to frequently harsh and unpredictable environments, revealing the successes and failures of human groups in the past. This section is intended as a brief summary. For more information about specific periods, places, and site types, including bibliographic references, the reader is referred to the more detailed discussions that follow in Sections IV and V.

Human history in what is now South Dakota began with the Paleo-Indian period, dated at 13,500 to 9000 radiocarbon years ago. Recent recalibration of radiocarbon dates against ice-core records indicates that Clovis-era radiocarbon dates are about 2000 years too young. In other words, radiocarbon dates of 12,000 radiocarbon years before present (BP) correspond to a calendar date of about 14,000 years ago (Fiedel 1999). Radiocarbon dates of 10,500 BP indicate an actual age of about 12,000 years. Radiocarbon dates of 9000 BP correspond to a calendar age of about 10,000 years. By 8200 BP, the difference shrinks to about 800 years, so that such a date indicates an actual age of about 9000 years (Fiedel 1999). This research also indicates that the ranges of some cultural complexes need to be shortened. In other words, while the span of permanent human occupation of North America is longer than previous estimates, Clovis and other early complexes have a

shorter duration than radiocarbon dates indicated and do not overlap to the degree previously thought. The abbreviation BP (before present) is used here to indicate radiocarbon ages.

The earliest Paleoindian period in the state includes the Clovis and Goshen complexes, dating from about 11,300 to 10,700 BP. If earlier cultures existed in South Dakota, no clear record of them has yet appeared. Clovis and Goshen people lived by hunting mammoth, *Bison antiquus*, and other Ice-Age animals. By 10,500 BP when the subsequent Folsom complex had become widespread, the mammoth was extinct, and people focused their attention on bison. These three complexes suggest small, nomadic groups with highly developed chipped-stone tool technologies, but few sites other than animal kill sites have yet been excavated in the Northern Great Plains. Apart from their most visible activity—hunting and butchering large animals—archaeologists know little of the life-ways of these pioneer Plains dwellers.

The later Paleoindian period includes a large number of complexes, recognized primarily by their distinctive projectile point types, dating 10,500 to 7000 BP. These include the Agate Basin, Hell Gap, Alberta-Cody, Scottsbluff-Eden-Cody, and Frontier complexes, the latter including Angostura, Jimmy Allen, Pryor Stemmed and Lovell Constricted projectile point types. These complexes represent nomadic bison hunting groups based in the open plains, as well as groups with more diverse food sources and smaller territories. Some of these moved from high to low altitude areas with the seasons and used a wide variety of plants and animals.

The trend toward regional diversity continued throughout the subsequent Archaic period, 1500 to 8000 BP. The Early Archaic (5500 to 8000 BP) marks the transition from the relatively moist and mild climate of the terminal Pleistocene to the much drier and more extreme climate of the Holocene. Bison were evolving into a smaller form and pronghorn were thriving in the dry western basin and range country. All Great Plains groups still relied heavily on hunting, but were increasingly developing seasonal migration patterns and technologies that allowed them to use a greater diversity of resources. Sites dating to this period are rare, due at least in part to the instability of the land surface during this dry time. Large, side- or corner-notched dart points used with an atlatl (spear-thrower) characterize Early Archaic sites.

By the Middle Archaic period (3500 to 5500 BP), local groups appear to have been moving through well-defined territories according to a seasonal schedule of hunting and foraging activities. These groups had developed effective technologies for storing meat and plant foods, which probably allowed them to winter over in pit houses, at least during severe weather (Larson 1997). Middle Archaic sites are abundant in western South Dakota and include periodically re-used campsites, bison kill sites, and several kinds of burial sites. During this period, the climate returned to moister conditions and sedimentation increased. The erosional forces that apparently removed much of the Paleoindian and Early Archaic record lessened or stopped, and the Middle Archaic record is well preserved throughout most of the state. In the Northwestern Plains, the Middle Archaic is represented by the McKean Complex, which includes middle-sized basally notched dart points of various styles.

The Late Archaic period (1500 to 3500 BP) saw the development of several new cultures in the state. At first, the Pelican Lake Complex and other, unnamed complexes held sway. These were similar to the McKean Complex that preceded them. Later in the period, the Besant Complex appeared. This was a bison hunting based culture. It may have derived in part from Eastern

Woodland groups that had migrated up Great Plains rivers during what is known there as the Woodland period. These immigrants may have initiated the long-standing pattern of eastern Missouri River-based tribes traveling west in summer and fall to hunt and obtain resources such as tool-stone and eagle feathers. The earliest sites with features indicating use of tipis or similar portable structures date to the Late Archaic period. Appearance of these stone circle features coincides with a renewed emphasis on bison hunting. At this time, continued moist, mild conditions permitted bison populations to increase.

Woodland Pattern cultures along the major rivers overlap with the Late Archaic and Late Prehistoric transition period in western South Dakota, about 1000 to 2000 BP. The Woodland groups probably lived in small, semi-permanent settlements, perhaps in simple wattle-and-daub houses. They lived by gathering plant foods, by hunting waterfowl and deer, and probably by tending patches of edible plants. They made pottery and constructed large and small mounds, some containing burials, throughout eastern South Dakota. These groups would eventually develop into, or merge with, the larger, complex village farming sites of the Plains Village tradition. The Plains Village tradition in South Dakota varied over time and space, but was generally characterized by clusters of earth-covered timber houses, each housing several nuclear families, a plaza for public gatherings, and agricultural fields on the river bottoms owned by extended matrilineal family groups. Many of the villages were fortified to ward off attacks by enemy raiders seeking the valuable dried corn supplies there. Farming provided much of the diet, as well as items for trade. Large hunting parties ventured west from the villages in late summer to get the year's meat supply. These groups also trapped fish in the rivers near the villages. Various villages and nations merged and split into separate groups as their populations fluctuated and threats from enemy raiders increased or abated. This flexible political organization allowed the Plains Village groups to survive droughts, enemy assaults, and rapid population expansions. These groups emerge in historic times as the Mandan, Hidatsa, Arikara, Ponca, and Omaha.

The Late Prehistoric period saw the introduction of the bow and arrow in the northern Great Plains, beginning about 1500 years ago. Nomadic bison hunting was the rule during this period, with groups living in small, dispersed tipi camps throughout most of the year and gathering into large interband encampments in summer for trade and ceremonies. After 800 B.P., farming groups expanded into the Middle Missouri River region from the middle Mississippi and lower Missouri rivers. These groups alternated between large earth lodge villages in the summer months and small tipi camps in sheltered locations in winter. Their principal subsistence activity was farming of corn, beans, and squash. For part of the summer and fall, large hunting parties would travel far to the west into what is now northwestern South Dakota in search of bison and other resources, while other members of the group remained behind at the village to tend the crops. These Middle Missouri settlements were part of the Plains Village Tradition. Their sites are characterized by large, semi-permanent villages, large earth lodges; cache pits for storing corn, dried meat, and other supplies; and many distinctive types of pottery. Some of the villages have defensive structures such as stockades, moats, and bastions.

During the Late Prehistoric and Protohistoric periods, the ethnic makeup of the project area underwent a series of changes. Between the early fifteenth and late eighteenth centuries CE, western South Dakota was controlled sequentially or concurrently by the Mandan, Hidatsa, Arikara, Crow, Naishan Dene (Kiowa Apache), Eastern Shoshone, Arapaho, Cheyenne, and Lakota. The last three of these groups entered the area in the late eighteenth century, after the

introduction of the horse. Formerly farming peoples from the upper Midwest, they abandoned settled village life for nomadic, equestrian bison hunting. By the mid-nineteenth century, the Lakota dominated the area, but many other groups still lived there. The Hidatsa, Mandan, Arikara, and Ponca were based in earth lodge villages along the Missouri, James, and Big Sioux rivers and the lower reaches of their tributaries. Parties from these nations visited western South Dakota on a seasonal basis for hunting and eagle trapping. By 1849, non-Indians had also begun moving through the Great Plains along the emigrant trails and were starting to encroach on lands claimed by the American Indian nations. Wars resulted from these episodes of ethnic expansion, some between American Indian tribes, and others between alliances of tribes and the Euroamericans.

Non-Indians began to explore what is now South Dakota in the mid-1700s. By 1800 French and Spanish traders had begun to establish posts along the Missouri River, trading metal tools and other factory goods for pelts and bison robes. Traders had reached the Black Hills by the time the Lewis and Clark Expedition passed through central South Dakota in 1804. The fur trade flourished for the first half of the nineteenth century. By then, the Indians were well armed with weapons of European and American manufacture and well supplied with horses from the Southwest. The Indians now fielded formidable forces of mounted warriors. While their main focus was intermittent raiding and horse-stealing from enemy Indians, they quickly adapted their tactics to controlling white emigrant parties and military forces dispatched to protect them.

By 1857, the fur trade was over, the Dakotas and Poncas were on reservations, and the first white settlements reached eastern South Dakota. A period of rapid town-building ensued east of the Missouri, but western South Dakota remained closed to white settlement for another two decades. Dakota Territory was carved out of the much larger Nebraska Territory in 1861 and again reduced in size to present-day North and South Dakota in 1868.

The Dakota War of 1862 began when a group of Dakota under Little Crow attempted to resist confinement to reservations and the resulting economic collapse that had brought the band to starvation and to drive white settlers from southern Minnesota. They killed around 490 white settlers and in turn lost 71 of their own, with another 277 arrested and 38 executed—the largest public execution in US history. Although the revolt was quickly suppressed, some 25,000 settlers fled the region. Some of the refugees and the Indian prisoners ended up in eastern South Dakota.

During the 1860s, the Lakota and their allies in the west succeeded in limiting white settlers to the Oregon Trail and defeated the military forces intent on keeping trails open to the new Montana gold fields. The 1868 Treaty of Fort Laramie established the Great Sioux Reservation in the western part of what is now South Dakota. The treaty was short-lived because rumors of gold in the Black Hills led to public agitation for the US government to open western Dakota to exploration and settlement. Following the 1875–76 gold rush and the US Government's taking the Black Hills in 1877, settlers flooded into western South Dakota.

Although western South Dakota had been open for non-Indian settlement since 1877, most of the area outside the Black Hills remained open range until about 1890. Large cattle companies brought in Texas cattle; other outfits ran sheep. By 1884, some 700,000 to 800,000 cattle grazed the western South Dakota ranges (Lee and Williams 1964), but severe winters in the late 1880s killed many thousands. By 1890, open-range cattle driving ended, but large cattle outfits continued to operate ranches in the area (Lee and Williams 1964).

In 1890, some Lakota on the Pine Ridge Reservation began following the Ghost Dance Religion. This was based on the belief that, by performing rituals, American Indian tribes throughout the west could affect the removal of white settlers, reunite all American Indians with their deceased relatives, and return to their former ways of life (Mooney 1896; Utley 1993). The Ghost Dance ended in tragedy at Wounded Knee, near Pine Ridge, where US soldiers killed nearly 200 Lakota men, women, and children.

South Dakota attained statehood in 1889. Eastern South Dakota experienced a series of booms and busts from 1890 to 1940. New settlers, often immigrants from Europe, were lured by promises of rich farmland nearly free for the taking, only to be hit by droughts that ruined all possibility of profitable farming. The eastern part of the state ultimately developed a pattern of small hamlets supplying mid-size wheat farms with larger cities and towns serving areas comprising several counties.

In eastern South Dakota, most land was plowed for wheat and other grain crops. Agriculture remains the principal industry, although tourism and light manufacturing are important in some communities.

In the west, most of the land remained in public ownership, with several large Indian reservations lying west of the Missouri. Forest Reserves were established in the Black Hills, Cave Hills, Short Pine Hills, and Slim Buttes, with grasslands units in the southern portion of the state west of the Missouri. National Parks and monuments were established in the Black Hills (Wind Cave and Jewel Cave) and the Badlands. Large tracts of state land were reserved for Custer State Park in the Black Hills and the state antelope preserve in Harding County.

Cattle ranching continued as the main private enterprise in western South Dakota. As family ranches replaced the large outside cattle interests, towns like Buffalo and Belle Fourche were established as market centers. The main period of town building in northwestern South Dakota took place after 1910. Cattle and sheep ranching remain the principal industries in the area today, although oil and gas extraction are gaining importance.

At this writing, there are approximately 19,000 archaeological sites in South Dakota. These sites generally represent hunting and animal processing, temporary residence, tool-stone gathering and working, mounds, earth lodge villages, homesteading, stock-raising, eagle trapping, and religious activities. Pre-contact sites are categorized as artifact scatters, hearths, villages, fortifications, burials, bison or antelope kill sites, eagle-trapping pits, tool-stone procurement and tool manufacture, rock cairns, rock shelters, stone alignments, rock art, stone circles, vision quest locales, and timber lodges. Contact-era and recent sites are categorized as farmsteads, roads, railroads, foundations, depressions, alignments, burials, cairns, cabins, trading posts, school foundations, town sites, dams, dumps, earthworks, fence-lines, forts, mines, quarries, industrial sites, monuments, and wells or cisterns.

The distribution of archaeological sites of the Prehistoric and Protohistoric periods is geographically patterned. Woodland and Plains Village sites, including mounds, are largely confined to the major rivers of eastern and central South Dakota. Stone circles (also known as tipi rings) and artifact scatters that represent campsites and food processing areas occur in valleys, on toe slopes, and on mesa tops. Bone beds from game drives occur in deep soils of draws, alluvial

fans, and toe slopes. Vision quest markers, cairns, and eagle-trapping pits occur on the rimrocks, while rock art is common in the overhangs below the rim and on other more resistant sandstone outcroppings. Localities with deeper soils, including alluvial fans, valley floodplains, mesa tops, and rock overhangs often contain buried, deeply stratified sites that have the greatest scientific potential for both archaeological studies and research on past environmental conditions. The entire post-glacial period is represented, but sites dating to the Late Archaic and Late Prehistoric (including Plains Village) periods are by far the most common. This probably is because earlier sites have been lost to erosion.

Historic sites are more evenly scattered throughout the state, with farmsteads more common in the east and ranches in the west. Mining sites are found primarily in the Black Hills. Ethnically, American Indian-related sites are found throughout the state, with historic-era sites concentrated on the reservations. From 1879–1910, large numbers of Norwegians, Swedes, Danes, and Finns settled throughout the state, with concentrations in the southeastern and northwestern counties. About one-third of the white settlers in South Dakota were Scandinavian. German-Russians came between 1873 and 1885, settling in the north central and southeastern counties. Among them were Mennonites and Hutterites who formed colonies in Turner, Hutchinson, and Bon Homme Counties. Germans from Germany arrived at about the same time, but dispersed throughout the state. Czechs, Bohemians, and Dutch settled in an area of south central South Dakota straddling the Missouri River.

This brief overview only skims the surface of South Dakota's rich history. To bring the depth of understanding this complex history deserves, the state's heritage resources must be preserved for future study and public education. The knowledge, understanding and insights to be gained from investigating the past are compromised each time development, vandalism, or erosion destroys or damages a cultural resource. Protection of these diverse and irreplaceable resources is a complicated task. Given the state's limited economic base and small population, South Dakota's approach to protecting cultural resources must be practical, efficient and comprehensive. Administrative practices, promotional activities, research projects and protection strategies must be effective and well planned. Efficiency means the careful allocation of resources to basic requirements and to long-range endeavors with superior potential. It also means supporting individuals, agencies and institutions in their efforts to preserve important historic resources.

## **Property Types**

A wide variety of archaeological remains attest to South Dakota's long and complex history. These are grouped into categories referred to as property types. The National Park Service defines a property type as:

...a grouping of individual properties based on a set of shared physical or associative characteristics. Physical characteristics may relate to structural forms, architectural styles, building materials, or site type. Associative characteristics may relate to the nature of associated events or activities, to associations with a specific individual or group of individuals, or to the category of information about which a property may yield information. Property types can be based upon our predictions of what resources likely existed at a given place and time in history and our expectations of what their likely condition is today. However, most frequently they

are based on information about known properties [US Department of the Interior 1986:8].

Defining property types for archaeological resources is complicated. The material remains observed at these sites have been transformed by both cultural and natural actions. One approach to the problem is through the methods of settlement archaeology. The notion of settlement type is readily translated into the property type definition required for the National Register (Dobbs n.d.:31). Most investigators in the Upper Midwest have adopted an analytical method to delineate settlement types. They examine the proportions of various kinds of artifacts and features found at sites and sometimes employ edge-wear analysis on artifacts from excavated contexts. Some researchers have developed settlement types based on quantitative descriptions of debris profiles from various sites (e.g. Dobbs 1984; Dobbs and Shane 1982; Kvamme 1988; see also O'Brian and Lewarch 1981). These types have proved useful in settlement studies but do not always include a clear statement about site function. Benn (1987:26–28) has defined seven distinct settlement types: resource procurement station, single occupation bivouac, multiple occupation bivouac, temporary base camp, seasonal base camp, mounds, and unknown function sites. The development of methods and procedures for delineating settlement types for each historic context should have a high priority as the planning process is implemented (Dobbs n.d.:31–32).

South Dakota recording forms employ a series of site or property types. These types are:

- alignment (drive lines, medicine wheels, petroforms);
- artifact scatter (lithic scatters, chipping stations, etc. Generally thin deposits, can be buried; can include aboriginal and/or historical material);
- burial (cemetery, ossuary, single burial, but not mound);
- cabin (remains of sod hut, dugout, log cabin, etc.);
- cairn (pile of rocks, does not include farmers' rock piles);
- dam (earth, stone, or concrete dam);
- depression (can include collapsed root cellar, dugout remains, etc.);
- dump (refuse pile or area);
- earth lodge village (note the term earth lodge);
- earthwork (miscellaneous earthworks);
- farmstead (farm or ranch building, outbuilding ruins, can include groups of cabins, foundations, depressions, etc.);
- faunal/paleontological (bone bed or fossils with no direct evidence of cultural association);
- fort (historic military or civilian fortification; complex type which can include other types such as foundations; overlaps with trading post type);
- foundation (isolated building foundation);
- hearth (isolated aboriginal firepit or hearth);

- industrial (mines, quarries, sawmills, flumes, etc.);
- isolated find (single tool or few [less than 10] artifacts with no possibility of buried or other remains);
- kill (jump, impoundment, surround);
- mine (historic mine or quarry, may include structural features);
- monument (marker other than grave);
- mound (burial mound, linear, temple);
- nonfarm ruins (house and outbuildings, livery stables, etc.; a complex type that may include depressions, foundations, cabin, etc.);
- occupation (similar to artifact scatter but possibly multicomponent, contains features, some depth apparent. Usually has National Register of Historic Places potential.)
- quarry (aboriginal quarry or lithic source);
- railroad (railroad bed and track);
- road (old wagon trail, roadbed, etc.);
- rock art (petroglyphs, pictographs);
- rock shelter (cave, shelter, overhang);
- stone circle (tipi rings);
- townsite (can be town or similar complex of structures, possibly containing depressions, foundations, etc.);
- trading post (trader's post or fort; complex type which can include other types such as foundations; overlaps with fort type);
- village (any large habitation site with dense remains, features, animal bone, etc., and more than one house feature, such as a house pit or tipi ring)
- traditional cultural property (a place or historic site that plays a significant role in a community's historically rooted beliefs, customs, and practices)

## Historic Contexts

Historic contexts refer to sets of historic resources, such as archaeological sites, related to a single concept, such as bison hunting, homesteading, or population movements. A historic context, as defined here, is a document that defines and analyzes a set of related resources or cultural units occurring in a specific, limited time and space. The key elements are a conceptual framework and geographic and chronological limits.

Several of the contexts presented here are based on single artifact types, specifically projectile points. Projectile points are important because the various types have limited distribution in time and space, so that they serve as markers of specific archaeological cultures. A long-term goal is to define these narrow, artifact-based contexts more fully as cultural manifestations. Each context that proposes to pertain to a archaeological culture, such as Clovis, Avonlea, Initial Middle

Missouri or Dakota/Lakota, will eventually be defined in terms of age, spatial distribution, array of site types, typical artifact assemblages, subsistence practices, settlement patterns, technology, linguistic affiliation (language group), and other attributes as revealed by archaeological research.

This document includes only those historic contexts referring to the prehistoric period. For historic period contexts, including architectural resources, see the website of the State Historic Preservation Office, <https://history.sd.gov/preservation/SHPOdocs.aspx> (*right click to open*). The following historic period contexts, inventories, and multiple property nominations to the National Register were completed as of 2017:

#### Historic Contexts:

- Architectural History in South Dakota
- Churches in South Dakota
- Federal Relief Construction in South Dakota, 1929-1941
- German-Russian Folk Architecture in Southeastern South Dakota
- Historic Bridges of South Dakota
- Historic Mining Resources in the Black Hills and South Dakota DRAFT
- Homesteading and Agricultural Development
- Indian Housing in South Dakota
- Post-World War II Architecture in South Dakota
- Schools in South Dakota
- South Dakota's Railroads
- South Dakota State Plan for Archaeological Resources
- Steel Water Towers Associated with South Dakota Water Systems, 1894-1967
- The History of Agriculture in South Dakota: Components for a Fully Developed Historic Context

#### Inventory - Nomination Forms:

- Architecture of Finnish Settlement in South Dakota
- Czech Folk Architecture of Southeastern South Dakota
- Forest Avenue Historic District, Vermillion
- German-Russian Folk Architecture in South Dakota
- Historic Resources of Harding and Perkins Counties, South Dakota
- Historic Hutterite Colonies Thematic Resources
- Historic Resources of Rural Butte and Meade Counties in South Dakota

- Historic Resources of the Northern and Central Townships of Yankton County, South Dakota
- Yankton Commercial Historic District

#### Multiple Property Documentation Forms:

- 19th Century South Dakota Trading Posts
- Common Farm Barns of South Dakota, 1857-1958
- County Courthouses of South Dakota
- Federal Relief Construction in South Dakota, 1929-1941
- Historic Bridges in South Dakota, 1893-1942
- Historic Resources of the North End Neighborhood of Watertown, South Dakota
- Historic Stone Arch Culverts in Turner County, South Dakota
- Lustron Houses in South Dakota
- Ranches of Southwestern Custer County, South Dakota
- Rural Architectural and Historical Resources of Brown County, South Dakota
- Schools in South Dakota
- South Dakota's Round and Polygonal Barns and Pavilions

## Statewide Research Topics

Academic research and reports done for cultural resource management suggest many questions regarding those aspects of South Dakota history that can be studied through archaeology. Most of these concern the life-ways and culture history of the state's former inhabitants. Some focus on understanding the natural environments in which those past cultures developed and operated. Researchers most often approach recent history through written documents; however, archaeology can provide a more complete view of the recent past, especially regarding peoples and activities that were outside of the mainstream or that were intentionally omitted from documents.

An article and responses to it explored a perceived paucity of theory in Plains archaeology (Mitchell 2006, 2007; Bleed 2007; Roper 2007). By this the authors mean that the historic emphasis in Plains archaeology on culture history, as opposed to culture process, continues to shape archaeological studies in the region. This emphasis on culture history and ethnicity arose from the direct historical approach taken by early Plains archaeologists such as William Duncan Strong and Waldo Wedel, and their ethnographer colleague, George Will, who included archaeological investigations in his research on Mandan history. The Smithsonian Institution-River Basin Surveys projects that followed continued this emphasis on pushing the history of known ethnic groups back in time. As Roper (2007) points out, this has led to the mistake of interpreting all archaeological remains in terms of historical documents and ethnography, which assumes that these cultures were essentially static over many centuries. This version of the South Dakota state plan for archaeological resources includes both culture-historical and processual research questions, as well as some that lie outside either of these categories. As long as most

research takes place in the context of cultural resource management, and the resource management process involves linking known ethnic groups (i.e. federally recognized Indian tribes) to specific sites, the culture history approach will likely continue to dominate Plains archaeology. This is not necessarily detrimental, because a firm grounding in ethnography and contact with knowledgeable native informants can only help archaeologists in improving their understanding of artifacts, features, cultural landscapes, symbols, and the like.

The following research topics apply to South Dakota archaeology statewide:

- 1) Life-ways of Prehistoric Populations in South Dakota
  - a) Subsistence strategies.
    - i) What is the link between site distribution and distance to permanent sources of water? Did settlement and subsistence patterns change with shifts in the availability of water?
    - ii) What kinds of special resource procurement activities are visible in the archaeological record, for example, gathering water plants, picking berries, capturing eagles, gathering medicinal plants and minerals, hunting mountain sheep, snaring rabbits, and quarrying tool-stone? Can we find ways to trace activities that are invisible or poorly represented in the archaeological record?
    - iii) Did the resource base affect house types and settlement patterns? For example, do areas with stationary food resources such as plants and waterfowl tend to contain more permanent house structures and larger villages than areas where bison and other herd animals were the principal food source?
    - iv) How extensive were trading areas during different time periods? What goods or commodities were traded in and out of various regions?
  - b) Technology
    - i) Did tools become more specialized through time or were they generally multipurpose? What economic, social or spiritual considerations have affected this?
    - ii) Do isolated ecosystems, such as the Black Hills, foster development of unique tool types?
    - iii) What kinds of ceramics appear in western South Dakota? Do these indicate trade, migrations, or development in place?
    - iv) What house types preceded the Plains Village earth lodges and the Late Prehistoric tipi?
    - v) How did tool-stone availability affect life-ways? For example, in areas with little local tool-stone, were people more likely to engage in long distance travel or trade?
  - c) Chronology
    - i) Refinement of projectile point chronologies.
    - ii) Development of new dating methods.
    - iii) Development of models of interaction between contemporaneous ethnic groups.
    - iv) Establish a data base of calibrated radiocarbon dates for the state. How are dates distributed through time? Does this suggest that some areas were abandoned during some periods?
  - d) Social Organization and Interaction
    - i) In a given study area, did the social organization systems change through time? If so, how are the changes best explained?
    - ii) Did task specialization develop and, if so, in what tasks or functions?

- iii) What archaeological evidence can be found for large-scale shifts in group size? For example, on the Missouri River, what is the time depth of the pattern of village-based groups coalescing and splitting?
- e) Trade Networks
  - i) What imported items are present in archaeological sites in South Dakota?
  - ii) What is the relationship between the Missouri River villages and urban centers to the south? What was the relationship between farming villages on the rivers and nomadic hunting communities in other areas of the state and region?
  - iii) Did the pattern of trade centers at the Missouri River villages hold throughout the Plains Village period?
  - iv) What goods or commodities were traded? Did this change over time?
  - v) How did goods and commodities move through space?
- f) Territoriality
  - i) How are artifact typology and territoriality related? Do projectile point and ceramic types reflect group identity?
  - ii) What are the likely effective sizes of territories of farming-hunting groups versus hunter-forager groups? How can these be determined through archaeological research?
  - iii) Did groups' territories overlap?
  - iv) How were territories established and maintained?
  - v) Were important resource areas neutral ground, as is indicated by ethnographic accounts of Pipestone, Minnesota? If so, where were these? What archaeological evidence can be brought to bear on this question?
  - vi) Was rock art used as a territorial marker? If so, which types and how did it function to maintain territory?
- g) Settlement Patterns
  - i) Can seasonal use patterns be identified through time in a given study area, and if so, what are they and how do they change?
  - ii) Does a basic patterning in site location and function exist and can it be identified?
  - iii) Did settlement shift according to season, as is indicated ethnographically for both semi-permanent and nomadic groups? Did Plains Village groups live in earth lodges year round or use smaller shelters during winter?
  - iv) For a given study area, can any prehistoric or protohistoric trail systems be identified? What are their attributes, locations, and how can they be found?
  - v) Do settlement patterns indicate networks of political organization?
- h) Site Distribution
  - i) Does site distribution change with changing environmental conditions, for example the shift from a mosaic to a uniform regional vegetation pattern during the Paleoindian period and the dry conditions of the Early Archaic period?
  - ii) Does site distribution reflect warfare and defensive concerns? If so, how did this operate?
  - iii) Where are site densities highest and lowest? How is this best explained?
  - iv) Were some areas uninhabited during some or all of the state's history? If so, why?
  - v) How is site distribution related to resource availability? What resources or combinations of resources most influenced site distribution?
  - vi) How is site distribution related to topographic features, such as springs, streams, high ground, rock shelters, and flat areas?

- vii) How is site distribution related to environmental zones?
- viii) How has erosion affected site distribution?
- i) Cultural Change and Transition
  - i) What do various changes in the archaeological record indicate about culture change?
  - ii) What triggers the appearance of new complexes?
  - iii) What is the relationship, if any, between warfare and trade, and culture change?
  - iv) Which changes in archaeological complexes are abrupt and which are gradual? What does this suggest regarding causes and effects of such transitions?
  - v) How are changes in subsistence related to other aspects of culture, such as site locations, social organization, settlement pattern, and belief systems?
- j) Range of Variability
  - i) Do various attributes of archaeological complexes vary in step with each other, or do some stay stable while others change?
  - ii) Refine definitions of projectile point, ceramic, and tool-kit classes to better fit variability.
  - iii) How do outlying cultures vary from those in the main culture area? What do these variations say about the relationships between outliers and nuclear sites and the cultures that produced them?
- k) Demography
  - i) For a given study area, what were the relative populations in each period and how were they distributed?
  - ii) What factors limited or otherwise controlled population through time?
  - iii) What were the population dynamics of the Indian nations in South Dakota over time?
  - iv) What impact did disease have on those Indian nations?
  - v) Do we have a biased view of pre-contact history because of disruptions to native population structure caused by introduced diseases?
- l) Political, social and ideological structures.
  - i) How are belief systems and political structure expressed in the archaeological record?
  - ii) Is there evidence for different ethnic or linguistic groups coalescing in prehistoric times?
  - iii) How does village organization reflect social organization patterns?
- 2) Environmental Studies
  - a) Paleoenvironmental reconstruction, especially where deep deposits exist, as in the Badlands, the Sandhills, the Missouri River terraces, and Holocene loess-covered uplands.
  - b) How did Pleistocene extinctions affect human populations?
  - c) What is the potential for relict late Pleistocene resources?
  - d) Studies that use a variety of independent proxy data to reconstruct past climate and environmental zones.
  - e) What was the effect of Altithermal climate change on cultural systems? Did some areas escape the dry and highly variable climate conditions of this period?
  - f) What were the effects of environmental factors such as soil, sandstone outcrops, and tool-stone resources on site distribution?
  - g) How did environment influence subsistence, technology, belief systems, and settlement patterns?
  - h) What is the potential for development of dendrochronological sequences, geomorphological dating, and use of microfaunal analyses to track climate change?

- 3) Taxonomic Review and Revision
  - a) Examine taxonomic systems to determine if they are adequate.
  - b) Redefine the Middle Plains Archaic, especially in eastern South Dakota. Is it a local development?
  - c) Are Woodland populations adapting to Archaic influences, or are Archaic populations adapting to Woodland influences, or both? Can these questions be determined archaeologically?
  - d) Are Besant and Pelican Lake contemporary or sequential?
  - e) Reexamination of Woodland-Sonota relationships.
  - f) Do Terminal Middle Missouri sites exist in South Dakota?
  - g) Is the taxonomic structure adequate to respond to cultural transition (for example, Initial Middle Missouri to Extended Middle Missouri, relationships between Late Woodland/Great Oasis/Initial Middle Missouri)?
- 4) Recent History and Life-Ways
  - a) How were the locations of fur-trade posts and early military posts determined? What trade goods were imported and exported, or kept for the trader's own use? Did Indian nations' settlement patterns change as trading posts and military forts were established? What structures and material culture made up posts and forts? How were the dead disposed of? How much of traders' and soldiers' provisions were locally acquired versus imported? What do material items from various structures reveal about social hierarchies? What was the economic and health status of slaves and other servants at the posts and forts? Did French, Canadian, English, and Scots traders retain ethnically distinct material cultures? How did conditions and material status change as traders acquired Indian wives? Did this result in more mixing of Indian and European items? What is the evidence for women's and children's presence at the forts and posts? From how large a territory did traders acquire furs and other items for export?
  - b) How were early trails and roads established? To what extent was transportation by boat, as opposed to walking or horses. What was the form and function of stations along the trails? What were their social structure, demography, and source of necessities?
  - c) What was the social status and demography of early Euro-American settlements? How did this vary between mining camps, military forts, homestead boom towns, and Indian agencies?
  - d) How were towns established, which areas were considered more desirable and therefore more expensive, did ethnic groups tend to form clusters or disperse throughout towns and cities? Were commercial districts divided by business type, ethnicity, or prosperity? How did company towns such as Lead differ from planned towns from the homestead era? Which towns had areas for illegal or disreputable business, such as saloons and brothels, and where were these located in regard to legitimate businesses and residential districts?
  - e) What items were brought to homesteads as opposed to purchased locally or produced by the homesteader? What items did immigrants bring from their former homes? What was the process by which such items were saved or discarded over time? What was the range of economic and social status among first and later generation immigrants?
  - f) What structures made up a typical homestead? How did the homesteads of serious homesteaders differ from those who intended to sell out as soon as they proved up? How did the diet and economic status of homesteaders change over time?

- g) How did diesel and gasoline-powered farm equipment replace horse-driven equipment? Did this lead to greater prosperity for those homesteaders who stayed, or did it entrap them in debt and a lower economic status?
  - h) What was the health status of early Euro-American settlers? To what extent was medical care available to them? To what extent did they rely on patent medicines for their health needs?
  - i) What is the material legacy of federal works projects such as the Civilian Conservation Corps and Works Progress Administration? How were Civilian Conservation Corps camps organized? What items did Civilian Conservation Corps men receive from outside and what items did they purchase or make themselves?
  - j) How did American Indian settlements change under the reservation system? What material evidence is there for either resistance to Euro-American patterns of housing and settlement or acceptance of it? What items did Indians bring with them to boarding schools, asylums, farm schools, and the like? How did Indians adapt Euro-American house forms, such as cabins, to their cultural values and needs?
- 5) Miscellaneous
- a) Provisions for the completion of descriptive analyses of excavated, but unpublished, materials.
  - b) Compilation of reliable comparative collections.
  - c) Quantification of diagnostic indicators such as projectile point style, ceramic variability, etc.
  - d) Skeletal biological research is viewed as a contribution to the resource base of the state.
  - e) Subsistence patterns. What was the level of dependence upon maize during the Woodland period? Do Great Oasis skeletons, as compared to the earlier Woodland samples, reflect the addition of a substantial maize component? Spatial and temporal variation in cranial and postcranial morphology provides information concerned with human adaptation and environmental response. Key questions concern population movement as a factor in postcranial variation, and reduction in size and skeletal mass as a consequence of transition from pre-agriculture to agriculture. Regional and temporal patterning in skeletal pathology. Burial customs are poorly known for the entire state.
  - f) Ethnohistoric research to provide Native American views of the contact period.
  - g) Isolated artifacts and features.
    - i) Are isolated finds clustered around campsites or other site types?
    - ii) Do small artifact scatters represent resource procurement locations or tool-stone reduction areas?
    - iii) Do different isolate types (points, flakes, scrapers, etc.) occur in different environmental zones or topographic settings?
    - iv) To what extent can specific isolated finds be related to specific locations?
    - v) Does the distribution of isolated projectile points change through time and does this reflect changes in procurement strategies or land use patterns?
  - h) Many, if not most, activities took place away from houses, be they earth lodges, tipis, or trading posts. How can archaeologists study settlements to get a more complete picture, including outbuildings, gardens, trails, corrals, gaming grounds, and shrines, rather than focusing exclusively on houses?

### **III. CRITICAL TOPICS IN SOUTH DAKOTA ARCHAEOLOGY**

Earlier versions of the State Plan identified several topics requiring special attention. Some are related to management practices, some to research, and some to both. An overview of each of these topics is included here as a reference point for archaeologists working in South Dakota.

#### **Native American Sacred Sites, Traditional Cultural Properties, and Human Remains**

Many places that are sacred to Native Americans exist in South Dakota. Some of these sites lack any obvious signs of human use, such as items made or left by people. They include hills, springs, caves, large glacial erratics, and other natural landscape features that Native American groups currently hold or previously held sacred to their cultural traditions, as well as some culturally modified places, such as those with petroglyphs and pictographs. Some of these sites would also be considered traditional cultural properties for purposes of formal evaluation of sites for inclusion in the National Register of Historic Places under federal law (National Historic Preservation Act of 1966 [Public Law 89-665]). At present, traditional cultural properties are not recorded as archaeological sites in South Dakota unless they contain artifacts or features.

When a federal undertaking is involved, the historic preservation process must afford federally recognized tribes the opportunity to provide information about places within a project area that hold historic or traditional significance to the tribe or its members. This information then guides resource management decisions. In recognition of the sovereign status of federally recognized tribes, this process is frequently referred to as government-to-government consultation, meaning that cultural resource management decisions involve both federal agency officials and officials from federally recognized tribes with a current or historic interest in the place or places in question.

Whether or not federal regulations apply, discussions with American Indian tribal historians are needed to determine current attitudes and beliefs about such places. The archaeological community within the state has an ethical and legal responsibility to accommodate the interests and concerns of American Indian tribal preservation personnel, tribal leaders, and individuals. The legal basis for this includes the American Indian Religious Freedom Act of 1978 (P.L. 95-431; 92 Stat. 469; 42 USC. 1996), the Native American Graves Protection and Repatriation Act of 1990 (25 USC 3001-3013), Executive Order 13007, Providing for American Indian and Alaska Native Religious Freedom and Sacred Land Protections, (1996), Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, (2000), and South Dakota Codified Laws 34-27-31 through 34-27-32, which call for tribal consultations when human remains are discovered in the state. Tribal representatives and archaeologists should work together closely to choose the best action to recommend for each identified sacred site or traditional cultural property.



*Figure 2. Places where ancient markings are visible on the rocks are considered sacred by Plains Indians, 39PN108 (L. Sundstrom photo, 2016).*

Human remains are of special concern. Because of insensitive treatment of human bones and grave goods by anthropologists in the past and because of traditional beliefs about the importance of leaving them in place, many American Indians are dismayed when a project is likely to disturb human remains. Archaeologists can help federal and state agencies early in project planning to identify places where human burials are likely to exist. In many cases, this will allow changes in the project plans to avoid disturbing any graves. Although the Native American Grave Protection and Repatriation Act (NAGPRA) provides for repatriation of human remains and associated grave goods, most Indians prefer not to have the graves disturbed in the first place. To the extent that archaeologists can predict or discover the location of graves, they can be important allies in preventing damage to them. For example, archaeological surveys undertaken ahead of construction projects may identify burial mounds in the area expected to be affected by a project. In most cases, burial mounds have been plowed down nearly to the level of the surrounding surface, but they may contain human bones just under the surface. It has proved impossible so far to avoid all disturbance of human burials caused by construction projects or by erosion along the major drainages, particularly along the Missouri River. When such activity unearths human remains, or archaeologists discover them while surveying in advance of a construction project, the provisions of NAGPRA and state burial laws come into play.

Most agencies have “standard operating procedures” guidelines on file in case they or visitors to public lands encounter human remains. These documents outline exact procedures, including determining the exact location of the find and any items a visitor might have removed, contacting

the county sheriff, and contacting tribal representatives. Prompt action and proper procedure help insure that human remains are treated respectfully and according to state and federal law, as well as documenting exactly what actions were taken. This helps prevent the bad feelings that arise when misinformation arises about how archaeologists or land managers handled human remains.

When human remains or associated funerary objects are discovered accidentally, the person encountering such remains is legally required to contact law enforcement. If law enforcement personnel determine that the remains or objects are not part of a crime scene or related to a missing person case, they contact the state archaeologist. That office then visits the place the remains were found and examines the remains. If that office agrees that the remains are not linked to a missing person or criminal activity, it takes over responsibility for the remains and applies the provisions of NAGPRA in caring for them. Specifically, the state archaeologist's office determines the tribal affiliation of the remains, if any. A report of the discovery, its location, and likely affiliation is published in the Federal Register to allow interested Indian tribes to become involved in the repatriation process. The state archaeologist and the appropriate tribal representatives then work together to determine what to do with the remains. In practice, this usually means returning the remains to the most closely associated tribe, or another tribe that the associated tribe designates, and the tribe overseeing their reburial. For remains that no tribe claims for repatriation or that cannot be linked to a historic tribe, the state archaeologist's office is responsible for deciding what to do with the remains. In current practice, such remains are either returned to another tribe for reburial or reburied in a place previously agreed upon through consultation with interested tribes. A federal NAGPRA Review Committee oversees this process and mediates any points of disagreement between the various parties.

All state agencies and institutions that receive federal funds are subject to NAGPRA and are expected to follow its provisions in caring for and repatriating human remains. In practice, most small museums and universities call on the state archaeologist for assistance with this. While NAGPRA applies only to Native American and Native Alaskan remains, it is important to know that all human burials and human remains are protected from looting, removal, sale, and the like under state law. South Dakota Codified Law 34-27-22 through 34-27-28 prohibit disturbing human burials or removing anything from them. This means that even if a site is found not eligible for special protection under either NAGPRA or listing in the National Register of Historic Places, project planners still must avoid disturbing any graves there. The state maintains cemetery plots for burying unclaimed non-Native human remains. To date, no Native American remains have gone unclaimed.

## **Geomorphology**

Geomorphology or the study of landforms has become a standard part of excavation projects in South Dakota. Because archaeological deposits can be deeply buried as soils, wind-borne sediments, or flood deposits build up over them, it is crucial to know which sediments have the potential to contain archaeological deposits and which are too old or too recent to contain archaeological material. Other deposits have undergone periods of erosion or slumping, exposing once-buried artifacts or displacing them. An understanding of the geomorphology of a site or survey area allows archaeologists to know where to find intact deposits and to determine the original setting of displaced materials. In planning excavation projects, knowing the depositional

history of a site can ensure that units are deep enough to encounter all cultural strata, while at the same time avoiding removal of sediments that are too old to contain cultural material.



*Figure 3. Digging a backhoe trench to facilitate geomorphic study of a site, 2006 (ARC photo).*

In general, the portion of South Dakota including and east of the Missouri River trench contains a thick mantle of glacial deposits. In this half of the state, excavations can safely be terminated when glacial till is reached. West of the Missouri, archaeological deposits tend to rest directly on bedrock. Within these broad parameters, local deposition and erosion regimes vary widely. Some areas are subject to rapid cycles of erosion and redeposition of relatively soft parent rock, while others present surfaces that remained stable over hundreds or thousands of years. Archaeological deposits are frequently preserved in stream terraces throughout the state. Determining the age of terrace surfaces and fill allows archaeologists to estimate minimum or maximum ages for archaeological materials on or in terraces. Terrace dates can also provide clues as to the age of rock art panels located above them or partially covered by sediments.

Details of South Dakota's geomorphology as related to archaeological research and site management within the various regions of the state are provided in a study conducted by Joe Artz for the South Dakota Historical Society (Artz 2011).

## Taxonomic Definitions

An ongoing concern for archaeologists in South Dakota is taxonomy. This section provides a brief introduction to taxonomic terms that have been used or are in use in the state. The focus of this discussion is on Middle Missouri taxonomy and it is primarily based on articles by Krause (1977, 1989, 1998), Tiffany (1983, 2007), and Henning and Toom (2003). Krause (1977:5–13; 1998) examined Donald J. Lehmer's 1954 response to the limitations of the Midwestern Taxonomic System (MTS), Lehmer and [Warren] Caldwell's attempt to introduce the Willey and Phillips Phase-Tradition-Horizon System, and taxonomic modifications Lehmer introduced in his final synthesis of Middle Missouri prehistory.

The Midwestern Taxonomic System is composed of six taxa: component, focus, aspect, phase, pattern, and base (McKern 1939:301–313). In practice, the system is usually restricted to component, focus, and aspect. The system is hierarchical. A component cannot be a member of more than one focus, and a focus cannot be a member of more than one aspect. The Midwest Taxonomic System explicitly excludes time and space. Within the logic of the Midwest Taxonomic System, taxa must be formed on the basis of their content before one examines their temporal and geographic range (Krause 1977:8; 1998).

The Willey and Phillips Phase-Tradition-Horizon System, on the other hand, creates the basic taxa by the intersection of values along the dimensions of space, time and content. The taxa created by contrastive values along these dimensions are phase, horizon, and tradition. The phase is a classificatory taxon, and horizon and tradition are integrative taxa (Krause 1977:8). The variable of space is broken into five categories: site, locality, region, subarea, and area. Two categories make up the temporal variable: local sequence and regional sequence. The component, subphase, phase, and culture are formal or culture content variables (Zeier 1982:29).

Currently, most researchers in the Middle Missouri area apply the Willey and Phillips system, but often unevenly. Tiffany notes two reasons for this circumstance. First, the Willey and Phillips system does not consistently define some of its taxa. Second, Great Plains researchers have substituted Willey and Phillips's phase for the focus taxon without regard for the spatial and content limitations placed on the "phase" in Willey and Phillips's (1958:22) definition (Tiffany 1983:98).

Willey and Phillips describe these taxa as follows:

- *Phase*. An archaeological unit possessing traits sufficiently characteristic to distinguish it from all other units similarly conceived whether of the same or other cultures or civilizations, spatially limited to the order of magnitude of a locality or region, and chronologically limited to a relatively brief interval of time (Willey and Phillips 1962:22).
- *Horizon*. A primarily spatial continuity represented by cultural traits and assemblages whose nature and mode of occurrence permit the assumption of a broad and rapid spread (Willey and Phillips 1962:33). The horizon is characterized by its relatively limited time dimension and its significant geographic spread. It is usually expressed by

an art style or a very specific complex of features whose historical uniqueness cannot be mistaken (Willey and Phillips 1955:723–724).

- *Tradition*. A (primarily) temporal continuity represented by persistent configurations in single technologies or other systems of related forms (Willey and Phillips 1962:37).

Krause (1977:9) comments that to adequately use this system:

- Phases must always have the greatest content.
- Traditions must always have the greatest time depth.
- Horizons must always have the greatest spatial spread.
- Traditions and horizons may have roughly equal content but must have less content than any single phase.
- Phases and traditions may have roughly equal spatial dimensions but must have less than a horizon.
- Phases and horizons may have roughly equal time spans but must be less durable than a tradition.

Since the Willey and Phillips System was introduced it has met with criticism (Spaulding 1957) and attempts at modification. Notable modifications include Lehmer and Caldwell's (1966) redefinition of horizon, their distinction between technological and cultural traditions, and their use of the spatial term districts. Lehmer later redefined districts as regions (Lehmer (1971:28–29). He also added the concept variant, defining it as “...a unique and reasonably uniform expression of a cultural tradition which has a greater order of magnitude than a phase, and which is distinguished from other variants of the same tradition by its geographic distribution, age, and/or culture content” (Lehmer 1971:32; Krause 1969:95, 1977:10).

In discussing Middle Missouri taxonomy, Tiffany proposes clarifying the use of the formal units phase and culture and providing a constructive means for comparison by treating time as an independent variable by establishing a temporal model for the Middle Missouri tradition and leaving the definition of spatial units as dependent variables of the formal units of culture and phase. In other words, rather than define regions independently of content data, as has been done for the Middle Missouri tradition, define regions on the basis of the geographic extent of a particular formal taxonomic unit such as culture. Likewise, the spatial extent of a locality should be determined by the maximum extent of a phase (Tiffany 1983:100).

Krause (1989) discusses the implications of adding a new midrange classificatory unit, the population, to the Willey and Phillips system. He proposes that: “...given a commitment to the general theory of evolution currently popular among archaeologists, components may be interpreted as communities, populations may be interpreted as system states (multicommunity energy, matter, and information exchange climaxes), phases may be interpreted as multi-population system trajectories, traditions may be interpreted as time durable multi-phase information exchange routes, and horizons may be interpreted as multi-phase matter and energy

exchange routes (Krause 1989:288–289). Krause ends by challenging Plains archaeologists to systematically address taxonomic issues, because “if taxonomic issues continue to be ignored, if the ad hoc labeling practices that are so much a part of our past are continued, the growth of understanding will be inhibited more than stimulated” (Krause 1989:289).



*Figure 4. Aerial view of the Buffalo Pasture Village site, 39ST6, ca. 1949 (ARC photo).*

In eastern South Dakota, taxonomies developed for adjacent areas work well to describe and classify archaeological data. Some ongoing questions are whether the Great Oasis complex of southeastern South Dakota, southwestern Minnesota, and northwestern Iowa should be considered part of the Middle Missouri Tradition (Tiffany 2003, 2007; Henning and Toom 2003).

In western South Dakota, the main taxonomic confusion arises when Prairie-Woodland cultural developments show up on the plains west of the Missouri River. Should sites containing ceramics similar to those of the Middle Missouri Tradition be classified as Middle Missouri sites? Can a site be classified as Late Woodland, as opposed to Late Archaic or Late Prehistoric, if it does not contain ceramics? Are the Besant and Sonota complexes merely eastern and western expressions of the same culture that used both areas seasonally or sporadically? Early Middle Missouri Tradition projectile points are essentially identical to the Avonlea type found in the Northwestern Plains and attributed to several different ethnic groups, from Athabascans in the

north to Shoshoneans in the west. Because archaeologists in this area use chronologies developed for other areas (Wyoming and Montana High Plains and Eastern Prairies), the data are hard to fit into a single taxonomic system. The more theoretical questions of how archaeological units translate into cultural entities such as communities and nations rarely have arisen in this area, where the term *complex* covers most archaeological entities larger than the single component. Complexes are assumed to have temporal and spatial boundaries, but it is possible to define one on content alone, and, in fact, on the basis of projectile point type alone. Such shallow definitions are falling away as research increasingly fills in the gaps of these cultures. This has led to more realistic complexes that include more than one projectile point style within the same broad pattern of technology, site location, age, and subsistence pattern.

## **Chronology**

Regional archaeological chronologies have been produced for the Black Hills, the Badlands, the Sandhills of southwestern South Dakota, the Sioux Ranger District of Custer National Forest in northwestern South Dakota, the Middle Missouri River area, the James River, the Northeast, and the Big Sioux River area. A general chronological sequence for South Dakota proceeds from the Paleoindian period through the Archaic and Woodland or Late Prehistoric, ending with the Plains Village, Protohistoric and Historic periods. This sequence is too general to describe regional differences. For example, the Missouri River area was home to numerous Plains Village cultures, while very few Plains Village sites occur in western South Dakota. Western South Dakota is more like the Wyoming High Plains in its archaeological history, while the sequence for the eastern Prairie region is a better fit for eastern South Dakota. The Missouri River and James River regions are the only portions of the state for which archaeological chronologies were developed locally. Elsewhere, archaeological finds from South Dakota were fitted to chronologies developed for adjoining regions. This pattern is changing as more information is compiled from within South Dakota. In western South Dakota, Goshen and Clovis sites date somewhat later than elsewhere on the northern Great Plains. This area also has some local cultural developments, such as stemmed projectile points with rounded bases at sites in the higher Black Hills; such artifacts have not been discovered elsewhere in the Great Plains.

Figure 5 illustrates the cultural sequences currently in use in South Dakota and how they correlate in time.



## **IV. HISTORIC CONTEXTS**

### **Definition of Contexts**

A *historic context*, as defined here, applies to any clearly defined area of study, providing it possesses a theme and geographical and chronological limits. The term can apply to an artifact type (e.g., Pelican Lake projectile points), a property type (e.g., stone circles), a manufacturing process (e.g., production of ceramics), or an entire cultural system (e.g., Arikara). Although the potential number of historic contexts under this definition is huge, this document includes only those that refer to the broad archaeological regions and archaeological periods described above. A few historic contexts referring to well defined prehistoric site types are included, as well. These summarize current knowledge about stone circles, rock art, boulder alignments, burial mounds, tool-stone quarries, and the like.

Section IV defines primary contexts for each of the major archaeological periods. Each of these contexts includes a description of the specific archaeological complexes occurring within that period. The following information is recorded for each context and subcontext: overview of current knowledge, environmental setting, temporal and special boundaries, typical property types, location, context definition, condition of sites, research questions, research and management goals, a list of sites with materials related to the context, sites from that context on the National Register, and a bibliography of major publications on the context or subcontext. Contexts for each of the archaeological regions follow the chronology-based contexts. Finally, a series of topic contexts is included for some archaeological property types. The two major sets of contexts thus cover time periods and archaeological regions. These are based on the same set of information but differ in their focus.

### **Paleoindian Period**

#### **Contexts**

The Paleoindian Period includes eight contexts and subcontexts: pre-Clovis, Clovis, Goshen, Folsom (including Midland), Plainview, Early Plano (Agate Basin, Hell Gap, and Alberta-Cody), Late Plano (Scottsbluff-Eden-Cody, Brown's Valley, and Frontier or Parallel Oblique Point Complex), and Unassigned Paleoindian. The Frontier or Parallel Oblique Point Complex subsumes sites with projectile points classified as Angostura, Fredrick, James Allen, and Lusk types, as well as those with Pryor Stemmed and Lovell Constricted projectile points. Because early attempts at organizing Paleoindian materials tended to assign each distinctive projectile point type to its own complex, the number of complexes outstripped real differences in other cultural traits. Today, Alberta is considered an early expression of the Cody Complex and Scottsbluff and Eden are viewed as a later expression of the Cody Complex. Sites with Frederick, Lusk James Allen, and Angostura points make up the Frontier complex (Bradley 1991; Hofman and Graham 1998; Muñiz 2005, Fosha and Parsells 2006). Paleoindian taxonomy is shifting from an emphasis on projectile point forms to a more complete set of cultural traits as the data base grows; this will lead to a

taxonomy that more accurately reflects regional and time differences among the various early cultures of the Great Plains.

## Overview

Some researchers assert that humans entered the New World over 30,000 years ago (Bonnichsen *et al.* 1987). Others propose that people came to the Americas sometime between 30,000 BP and the time for which good archaeological evidence is available, about 12,500 BP (radiocarbon years before present). Some archaeologists use the term *Paleoamerican* for these early populations, because they may represent a different series of migrations from those that brought the ancestors of today's American Indians. The origins, extent, and even existence of such early American populations remains a matter of debate that will not be settled for many years to come (Bonnichsen *et al.* 1987, 2005).

For now, no definite pre-Clovis sites have been found in South Dakota. As in the rest of North America, Clovis, Goshen, and Folsom remain the earliest well-defined archaeological cultures in South Dakota. Lanceolate (leaf-shaped) spear points with a distinctive flake (flute) removed from the proximal base of the projectile characterize the Clovis and Folsom complexes, while Goshen is similar to Folsom except in lacking flutes on the projectile points. All other Paleoindian complexes are characterized by unfluted lanceolate projectile points, with or without stemmed bases. Although Paleoindian peoples hunted large, late Pleistocene (Ice Age) animals, principally mammoth and now-extinct species of bison, they also ate smaller animals, such as deer, mountain sheep, rabbits, turtles, and prairie dogs, as well as wild plants (Hill 2007).



Figure 6. Selection of Paleoindian projectile points from western South Dakota. Left to right: Clovis, Goshen, Dalton, Folsom, Agate Basin, Hell Gap, Frederick-Cody, and Angostura (ARC photo).

## **Environmental Setting**

The North American continental glaciers reached their maximum southern extent at about 20,000 years ago and then began a gradual retreat, interrupted by periods of renewed glaciation (Wright 1987:479). The Paleoindian period coincides with the end of the glacial period and marks the transition from a relatively moist, even climate to the drier, more extreme climate of the post-glacial era. Within the Paleoindian period climate change was rapid and variable; environments were patchier, with wet lowlands interspersed with dry uplands. This created a mosaic of parklands and grasslands unlike the zonal vegetation distribution of today. This environment supported a greater diversity of species than is present in the Great Plains today. The Paleoindian period spans the transition from Rancpotteryholabrean animal species (mammoth, mastodon, long-horned bison, *Bison antiquus*, sabertooth cat, musk ox, camel, ground sloth, short-faced bear, horse, dire wolf, and others) to a less diverse modern fauna.

## **Temporal Boundaries**

Pre-7500 BP (radiocarbon years before present). Paleoindian sites in South Dakota generally date between 9500 and 6000 BCE, or 11,500 to 8000 BP. On the Great Plains, the Paleoindian period extends from 11,600 to 7800 BP (Holliday 1999).

## **Spatial Boundaries**

Paleoindian projectile points occur as surface finds in all regions of South Dakota; however intact buried Paleoindian sites are rare throughout the state. Intact buried components occur in the Black Hills, in the White River Badlands, in the Slim Buttes, along the Missouri River, and near Brookings.

## **Property Types**

Kill sites, butchering sites, open campsites, hearths, food-processing areas, chipping stations, quarry sites, and isolated finds. Animal kill sites, butchering sites, and small camps are the most common types for the Paleoindian period. While large bone beds are highly visible, and thus more likely to be discovered than other kinds of sites, large-game (mammoth and bison) clearly made up a large portion of the diet during this period (Hill 2007).

## **Locational Characteristics**

Activity-related, often by water source. Many Folsom and Goshen sites occur in high altitude or foothills settings. In high energy environments such as the Black Hills and White River Badland that are prone to rapid and intense erosion and redeposition, many early sites have been lost to erosion. In other settings, including stream terraces and alluvial fans, Paleoindian sites are likely to be deeply buried. Of particular interest in locating Paleoindian sites is a widespread buried soil horizon known as the Leonard Paleosol. This soil formed between 11,900 and 8500 years BP, and thus potentially contains Paleoindian archaeological deposits (Fosha and Donohue 2005; Fosha and Holen 2003). Soil formation takes place when the surface is stable (not undergoing erosion or deposition) for long periods. Areas with buried soils thus have a good potential for well-preserved archaeological deposits.

## **Context Definitions**

Most sites are assigned to these contexts on the basis of diagnostic artifacts, usually projectile points. Some sites may be assigned to this context on the basis of stratigraphy, radiocarbon dating, or presence of extinct animals within the archaeological deposits.

## **Condition**

Although Paleoindian artifacts have been found on the surface in most regions of South Dakota, few well-preserved sites have been located. Such sites are likely to be deeply buried or removed by erosion. In many areas, surface inspection alone is not sufficient to evaluate the potential for Paleoindian sites.

## **Voids in Research**

Researchers need to identify areas with a high potential for buried Paleoindian sites and to establish procedures to evaluate and investigate that potential. Very few sites are well preserved and intact; many lack radiocarbon dates. Study of geomorphology (how the surface of the earth changes through erosion and deposition) is essential to identify areas likely to contain intact Paleoindian sites. Archaeological regions that appear to offer the greatest potential for Paleoindian research at this time include the South Fork Cheyenne, Black Hills, White River Badlands, and Missouri River trench.

## **Research Topics**

1. Resolution of typological questions about the relationship of Paleoindian sites to other sites in the Northwestern and Northeastern Great Plains.
2. Evaluation of the potential for deeply buried Paleoindian sites within South Dakota.
3. Environmental studies that address Paleoindian use of various area. The plants and animals of various parts of the state were different at the end of the Ice Age from today's typical species. How did Paleoindian groups adapt to local resources?
4. Basic definition of culture complexes and associations. Many "complexes" are little more than distinctive projectile point types, and it is unlikely that these projectile point types correspond directly to different cultures or ethnic divisions.
5. Address geographic, temporal and functional variations among projectile point types.
6. Address the Folsom-Midland problem. Is there a true Midland complex apart from Folsom?
7. What is the significance of fluted points not conforming to either Clovis or Folsom types?
8. What are the salient differences between Paleoindian and Early to Middle Archaic peoples? Do late Paleoindian complexes in mountain-foothills zones reflect a diverse

economic base more like that of the Middle Plains Archaic than the plains-based, bison-hunting Paleoindian complexes?

9. Was the economy of the Paleoindians dominated by bison hunting? If so, when and where? If so, did the bison-dominated economy of Paleoindians shift to a greater reliance on a wider mix of resources, and, if so, when and why?

## **Research and Management Goals**

1. To identify through geomorphological studies and surveys all areas of the state where intact Paleoindian-age deposits are likely to occur; to test excavate or otherwise evaluate selected (sample) areas to determine whether buried Paleoindian sites are present; to monitor all earthmoving activities likely to encounter Paleoindian deposits.
2. To set National Register of Historic Places evaluation criteria for Paleoindian sites. Paleoindian sites reflect the earliest known human presence in the Americas. In that the peopling of North America is a significant pattern in American history, Paleoindian sites are significant under Criterion A. Even surface sites may prove significant under Criterion D, because so few sites of this period are available for study. All intact Paleoindian sites and components within sites are considered significant at this time. Site significance increases if a site is undamaged and in relation to the diversity of materials present and how long the site was used. Of particular importance are sites that fill in blanks in current knowledge of Paleoindian culture—for example, sites with house features, sites where activities other than hunting and butchering took place, and complex, multiple-component sites that can show how use of an area changed over time. Sites that can provide information about past environments, including plants, animals, and climate, are also highly significant for studies of human adaptation to changing conditions.
3. To nominate to the National Register of Historic Places all eligible Paleoindian sites.
4. To document fully (map, survey, and test-excavate) all Paleoindian sites.
5. To preserve for the long term a sample of Paleoindian sites in South Dakota. This sample should include various periods, complexes, and functional types, such as bison drives, camps, and sites related to trade and religion.
6. To mitigate damage to those Paleoindian sites (and potential Paleoindian sites) that cannot be preserved for the long term. Large-scale excavations, supplemented by specialized study of environmental data, stone tool technology, and geomorphology, may be needed to mitigate the potential loss of information from these important sites.

## **National Register Listings**

None.

## Archaeological Regions

Sandstone Buttes, Grand-Moreau Tablelands, Bad River Basin, South Fork Cheyenne, Belle Fourche, Black Hills, White River Badlands, Sand Hills, Grand-Moreau, Bad-Cheyenne, Big Bend, Yankton, Lower James, Upper Big Sioux, Northeast Lowlands

## Paleoindian Sites (including All Complexes)

39BF2, 39BK19, 39BK100, 39BN65, 39BO51?, 39BT39, 39BU56, 39BU69, 39BU107, 39BU167, 39CK2, 39CL7, 39CO113, 39CU12, 39CU203, 39CU252, 39CU686, 39CU773, 39CU774, 39CU811, 39CU855, 39CU989, 39CU1142, 39CU1182, 39CU1850, 39CU1900, 39CU1968, 39CU2694, 39CU3572, 39CU4135, 39CU4348, 39DE5, 39DE9, 39DE115, 39DV5, 39DW118, 39DW148, 39DW165, 39DW385, 39FA11, 39FA65, 39FA67, 39FA405, 39FA423, 39FA790, 39FA833, 39FA1074, 39FA1151, 39FA1180, 39FA1189, 39FA1277, 39FA1419, 39FA1452, 39FA1700, 39FA1703, 39FA1961, 39FA2510, 39GR30, 39GR31, 39GR102, 39HE6, 39HK70, 39HN163, 39HN373, 39HN928, 39HN976, 39HN998, 39HN1058, 39HU78, 39JK195, 39LA3, 39LA510, 39LA537, 39LA827, 39LA860, 39MD145, 39MD733, 39MD738, 39PE285, 39PN5, 39PN97, 39PN100, 39PN183, 39PN214, 39PN219, 39PN340, 39PN751, 39PN795, 39PN1124, 39PN1306, 39PN1444, 39PN1450, 39PN1590, 39PN1809, 39PN1979, 39PN2757, 39PN2801, 39PN3190, 39PN3216, 39PO77, 39SH33, 39SH80, 39SH85, 39SH101, 39SH129, 39SH207, 39SP67, 39SP254, 39ST185, 39ST222, 39ST228, 39TP1, 39TP2, 39TP3, 39WW15, 39WW53, 39WW119, 39WW203, 39ZB31

## Bibliography

Bamforth *et al.* 2005; Benedict 1992; Bonnicksen *et al.* 1987, 2005; Bradley 1991; Fiedel 1999; Frison 1978, 1991, 1992, 1993, 1996; Frison and Bradley 1980; Frison and Stanford 1982; Hannus 1985; Hill 2007; Hofman and Graham 1998; Holliday 1999; Kooyman *et al.* 2006; Meltzer 2009; Sellet 2001; Stanford and Day 1992; Wheat 1972; Wormington and Forbis 1965.

## Pre-Clovis Archaeological Remains

### Overview

Although evidence for pre-Clovis occupation of the American hemisphere has mounted in recent years (Dillehay 1997; Meltzer *et al.* 1997; Fiedel 1999), researchers have reported only one possible pre-Clovis site from South Dakota. Much of eastern South Dakota was covered by glaciers during this period, and thus lacked habitat suitable for human life. While western South Dakota was not glaciated, large portions of the pre-Middle Archaic landscape in the study area have been either destroyed or deeply buried (Frison 1984; Kuehn 1997; Albanese 1990, 1995, 1996; Sundstrom 1999:63–64, 73; Yansa 2007). Some late Pleistocene sediments have been preserved in terraces along Fall River in the southern and northern Black Hills (Kempton 1980; Plumley 1948), in an alluvial fan in the eastern Black Hills (Fredlund 1996), in a terrace remnant on the Big Sioux River (Fosha 2003), and a high terrace of the Missouri River (Fosha and Holen 2003). A terrace at Hot Springs, South Dakota, has preserved a late Pleistocene sink-hole pond deposit

dated at about 26,000 BP. Known as the Mammoth Site, this has proved to be one of the richest Pleistocene fossil deposits on the continent. Although researchers originally investigated the Mammoth Site as an archaeological site, it contains no evidence of human use (Agenbroad and Laury 1984). Because the Mammoth Site would certainly have attracted human occupation and because it has been meticulously excavated, this lack of archaeological evidence strongly suggests that human occupation of the study area began later. Alluvial deposits in Wind Cave National Park dated between 14,000 and 12,000 BP also lacked any evidence of human occupation of the area (Fredlund 1996). Mammoth remains found in a glacial outwash terrace overlooking the Missouri River dated to around 12,000 BP, but the bones had been redeposited from another location and no artifacts were found with them (Fosha and Holen 2003).



*Figure 7. Left, excavation in progress; right, profile, Brookings Mammoth Site, 39BK100, 2005 (ARC photo)*



Figure 8. Fragmentary mammoth skull, 39BK100, 2005 (ARC photo).



Figure 9. Chipped stone flake found in stratum containing mammoth bone, 39BK100 (ARC photo).

Purported pre-Clovis sites elsewhere in North America have various kinds of projectile points, including small leaf-shaped points and some pointed at each end, but not the fluted projectile points found in Clovis and Folsom sites. The possible pre-Clovis sites have rather simple tool assemblages, but some contain blades or blade cores (Fiedel 1999). Blades are long, narrow flakes struck from specially prepared cores; they are used to create a variety of tools, including bifacial projectile points. If pre-Clovis cultures did exist, archaeologists do not know much about them, such as what people used for shelters or how they organized themselves into groups.

## **Environmental Setting**

At 11,500 BP, ice still covered most of eastern North Dakota. The edge of the Laurentide ice-sheet was at approximately the North Dakota-South Dakota border. Glacial Lake Dakota covered portions of northeastern South Dakota (Clayton and Moran 1982). Since the ice-sheets first thinned and then receded, meltwater saturated the areas near them (Clark 1994; Patterson *et al.* 2003). Ice-margin environments had about 4% less rain- and snowfall than today, because of the effect of the ice-sheet on continental air masses (Bartlein *et al.* 1998); however, lake and stream levels were high from excess meltwater runoff (Holliday 2000). The relatively wet, swampy environment in low areas would have provided a rich habitat for plants, waterfowl, and large and small animals. At the same time, extreme cold in winter limited plant and animals to cold-tolerant species. At 12,000 BP summer temperatures were slightly cooler than today's (about 2° C), but winters were significantly colder (by about 8° C) (Kutzbach *et al.* 1998).

Most of South Dakota had white spruce parkland in low areas, with prairie grasses and herbs in higher areas of the landscape; open areas were more likely to contain stands of trees and generally had cold weather adapted herbs and tall grass species, rather than the short grasses that thrive in western South Dakota today (Fredlund and Tieszen 1997). White spruce dominated, accompanied by a few deciduous tree species that could survive very cold winters. Tundra apparently never developed in ice-margin environments in the northern Great Plains; rather, the eastern portion of the region was quickly colonized by white spruce and herbaceous plants and the west by prairie or steppe vegetation. Mixed grass prairie dominated in the west, indicating a wide range of temperatures and dry conditions away from the ice margins (Fredlund and Tieszen 1997; Barnosky 1989; Yansa 2007). The parkland and grasslands environments would have supported herd animals like mammoth and bison throughout the region, while the many lakes and swamps in the saturated lowlands near the ice-sheet would have supported a diversity of fish and waterfowl species (Yansa 2007).

## **Temporal Boundaries**

Pre-11,500 BP. The only possible pre-Clovis site currently known from South Dakota dates to 12,000 BP.

## **Spatial Boundaries**

A possible pre-Clovis component lies within a remnant terrace on the Big Sioux River near Brookings. With the Laurentide ice-sheet periodically advancing and retreating, all of the archaeological regions were open for human occupation at one time or another; however, very early sites will only be preserved in regions not covered by ice during glacial advances—generally speaking, the region west of or near the Missouri River.

## **Property Types**

The Brookings Mammoth Site (39BK100) contained a possible pre-Clovis component consisting of butchered mammoth bone and a single stone flake. Other site types are not known for this period; however, archaeologists can expect open campsites, hearths, food-processing areas, and kill sites based on other Paleoindian period patterns.

## **Locational Characteristics**

Pre-Clovis sites will consist of evidence for human activity in association with Late Pleistocene plants or animals, within Ice Age sediments, or with radiocarbon dates indicating an age earlier than the Clovis Complex. Assuming that people were present in the Americas during this early period, the earliest of them may have made only simple flake or chopper stone tools, rather than the lanceolate projectile points and blade-flakes found in sites currently dated to the era immediately before Clovis. Because pre-Clovis may have used bone or wooden tools that deteriorate quickly, rather than more durable stone tools for tasks such as butchering, their sites may be difficult to recognize (Benn 1986:24).

## **Context Definition**

At present, the only likely pre-Clovis sites known from South Dakota is the Brookings Mammoth Site, 39BK100. It had a layer of mammoth bone, apparently butchered, with a single stone flake possibly associated with it; this layer dates to 12,500 BP. This layer is below a Clovis-age layer containing stone artifacts, a basin-shaped pit, and a cairn. The lack of more pre-Clovis sites precludes any detailed context definition. If such sites exist elsewhere in South Dakota, archaeologists do not yet know what they look like. Identification of an archaeological site or component as pre-Clovis requires three elements: presence of artifacts (human made objects); presence of datable material, such as obsidian or carbon-bearing organics; and a stratigraphic setting consistent with a pre-Clovis age. The latter simply means that the component or site cannot occur above Clovis-age deposits in a stratigraphic column. Similarly, if the artifacts or features occur with modern, rather than Pleistocene, animal remains the site cannot be pre-Clovis.

The most securely dated pre-Clovis site in the Americas, Monte Verde, Chile, contained large animal bone, many expedient (unshaped) stone tools, and a few thin, leaf-shaped projectile points (Dillehay 1997). It dates at 12,500 to 12,000 BP. Unlike the Clovis and Folsom complexes to follow, Monte Verde projectile points were not fluted (thinned by removing long, narrow flakes from each side at the base of the point). For now, nothing definite can be said of pre-Clovis tool kits, subsistence and settlement patterns, or house types. Some researchers have hypothesized that pre-Clovis cultures had a blade tool technology—that is, the ability to drive long, narrow flakes from stone cores. These long flakes, referred to as blades, then were shaped into bifacial tools such as knives and projectile points. For now, it is not clear what pre-Clovis artifacts look like, but some possibilities are bi-pointed lanceolate projectile points and large and small blades or cores from which they were struck (Fiedel 1999). One can also expect tools made from mammoth ivory.

## **Condition**

As noted, it is unlikely that many pre-Clovis sites could have survived the periods of erosion and deposition that followed the retreat of the glaciers. A few such deposits may be preserved in terrace remnants and glacial outwash fans in protected locations.

## **Voids in Research**

With only one possible pre-Clovis site currently known, any new information about this period is important.

## **Research Topics**

1. In what areas of the state are pre-11,500 BP landforms exposed, buried, or destroyed?
2. When was South Dakota east of the Missouri free of glaciers and suitable for human occupation?
3. Some researchers have argued for pre-Clovis occupation near the margins of glaciers, where meltwater would create a rich environment for plants and animals. Do such areas in South Dakota contain archaeological components that could be of pre-Clovis age?
4. Are pre-Clovis sites on the northern Great Plains essentially like Clovis sites, or does the introduction of fluted points mark the beginning of a distinctly new cultural complex.

## **Research and Management Goals:**

See Paleoindian section above.

## **Sites Listed in the National Register of Historic Places**

None.

## **Archaeological Region:**

Upper Big Sioux

## **Pre-Clovis Site**

39BK100

## **Bibliography**

Pre-Clovis, general: Bonnicksen *et al.* 1987, 2005; Meltzer 2009; Meltzer *et al.* 1997; Dillehay 1997; Fiedel 1999. Pre-Clovis in South Dakota: Fosha and Donohue 2005.

## **Clovis Complex**

### **Overview**

Clovis is the earliest archaeological complex currently known in South Dakota. The Clovis complex represents small groups of nomadic hunters and/or scavengers. Many Clovis sites contain mammoth bone; however, some Clovis hunts targeted extinct species of bison, horse, and smaller game such as pronghorn antelope (Frison 1991; Frison and Todd 1986; Hannus 1985, 1990). Clovis people certainly ate mammoth, but whether they killed these large animals or scavenged their carcasses is not clear. Clovis people made large, thin lanceolate projectile points with distinctive flutes made by striking a long, narrow flake up from the base through the blade of the

point (Bradley 1991; Howard 1990). These points tipped spears or darts. Stone tools at this time were based on a blade technology: a specialized technique of driving off long, thin flakes from the stone cores. Smaller blades, referred to as microblades, occur in some early chipped stone tool technologies, but not in the Clovis culture. Clovis people sometimes cached large sets of chipped stone tools or left them in graves. They also made tools from mammoth ivory and bone. Many Clovis sites contain very few stone artifacts. Clovis house and settlement forms are not known, but groups seem to have moved through very large territories, judging by the diverse stone types used to make their tools. Some researchers suggest that meat and stone tool caches represent a subsistence strategy focused on compiling emergency supplies of food and other necessities. These groups also stayed small and mobile to avoid food shortages (Frison and Todd 1986; Kelly and Todd 1988).

The Sheaman site lies just across the South Dakota line in eastern Wyoming. It contained a single Clovis component (Frison and Stanford 1982:143–157). This included six areas of flake concentration, seven areas of bone concentration (all but one overlapping with the flake concentrations), and an oval area containing red ocher in the form of small nodules intermixed with the soil. This component was exposed in the bank of an arroyo and seems to have originally lain in the bottom of a small swale or arroyo. Charcoal from a natural fire postdating the Clovis occupation was radiocarbon dated to just over 10,000 BP. This was estimated to have occurred about 1000 years after the Clovis occupation.

Artifacts from the site include a Clovis point, four channel flakes (fluting flakes), an ivory projectile point or foreshaft, a modified pronghorn bone, a biface broken during manufacture reworked into a knife, a projectile point preform, six large biface reduction flakes used as tools, a composite side scraper and double-ended burin, two side scrapers, a split cobble tool, several other flake tools, and about 3000 chipping debris flakes. The site also contained several bison bone fragments, some of which had been deliberately coated with red ocher. The site was interpreted as a small spring or summer campsite, possibly peripheral to a larger campsite (Frison and Stanford 1982:156–157).

The Lange-Ferguson site (39SH33) in the White River Badlands (Hannus 1985, 1990) provides a different picture of Clovis life in South Dakota. Here, Clovis people killed and butchered an adult female mammoth and her calf. Most of the artifacts from Lange-Ferguson are made from mammoth bone (Hannus 1990). The site yielded dates of 11,140 and 10,730 BP.

The widespread use of red ocher by Clovis people may have religious implications. The Anzick site in Montana contained an infant burial covered with red ocher and accompanied by a large number of finely crafted stone and bone tools (Owsley and Hunt 2001). This yielded a date of 11,550 BP. Clovis society may have consisted of bands of 20 to 25 persons, including five or six hunters (Frison and Todd 1986). Large piles of mammoth bone at the Colby Site in Wyoming suggest that meat caching was practiced, perhaps with religious activity associated (Frison and Todd 1986).

## **Environmental Setting**

At 11,500 BP white spruce parkland covered the lower portions of the landscape near and east of the Missouri River, while western South Dakota and uplands east of the Missouri supported a

mixed grass vegetation (Yansa 2007; Fredlund and Teiszen 1997; Barnosky 1989). Grassland had begun to shift to warm-season species (Boutton et al 1998). Grasslands were established in the lower portions of the Black Hills by 11,500 BP; the higher Black Hills presumably supported spruce and mixed conifer forests. The northern Great Plains supported a greater diversity of species than at present. At this time, Pleistocene animals such as mammoth, giant bison, camel, horse and even peccary still roamed the study area. Pronghorn and deer much like today's were also abundant (Frison and Stanford 1982). Expanding grasslands provided habitat for grazers, such as bison and pronghorn, but the shortgrass prairie had not yet evolved (Watts and Wright 1966; Fredlund and Jaumann 1987; Barnosky *et al.* 1987; Weedon and Wolken 1990). Near the glacial margins, the water table was much higher than today's, creating lakes and marshes that supported an abundance of fish and waterfowl (Yansa 2007). Stands of spruce occupied wet soils near lakes and streams. This water came from meltwater and buried ice masses; precipitation was low.



*Figure 10. Excavations at Lang-Ferguson mammoth site, 39SH33, 1982 (ARC photo).*

## **Temporal Boundaries**

Dates for the Clovis complex on the southern Great Plains range from 11,600 BP-11,000 BP. Northern Great Plains Clovis dates generally range from 11,200–10,900 BP. In South Dakota, the Lange-Ferguson Site (39SH33) yielded dates of 10,670±300 BP; 10,730±530 BP. A date of 10,910±40 was obtained on a paleosol at the Brookings Mammoth site, 39BK100.

## **Spatial Boundaries**

Surface finds are reported from across the state. Intact Clovis-age components are located in the White River Badlands, along the Missouri River, and on the Big Sioux River. Another Clovis site lies just across the South Dakota line in the Wyoming Black Hills foothills. A Clovis point was found on the bluffs of the James River near Mitchell (Fosha 1994).

## **Property Types**

Open campsites, hearths, food processing areas, kill or scavenging sites, quarry sites, bone beds representing meat caches, chipped-stone tool and blade caches, isolated finds. One prepared burial site is known from Montana.

## **Locational Characteristics**

Intact Clovis sites thus far identified in South Dakota occur in stream terraces, sod tables, and alluvial fans. Mammoth bone occurs throughout the state, even in the higher Black Hills; thus, Clovis sites could be preserved in all areas of the state.

## **Context Definition**

The Clovis fluted point is characteristic of this complex. The points are lanceolate in shape and the flute is typically removed on both sides of the point and extends halfway to three-quarters of the way up the length of the point, with the base and lower portions of the point blunted by grinding. Clovis peoples hunted herd animals, especially mammoth and an extinct form of bison, but also pronghorn. Their settlement patterns and house types are not yet known.

## **Condition**

See Paleoindian introduction. The excellent preservation of the ca. 30,000-year-old Mammoth Site in Hot Springs shows that Clovis-age deposits could be well-preserved given the right conditions; however, many areas of the state, including the higher Black Hills, the White River Badlands, and the glaciated region east of the Missouri experienced widespread erosion and redeposition in the post-glacial period. This means that Clovis and other early Paleoindian sites are unlikely to have been preserved.

## **Voids in Research**

Only two Clovis sites have been excavated in South Dakota. Both of these are sites where mammoths were butchered. We have virtually no information about other aspects of Clovis life in the state. A third site, the Tigerville Mammoth (39PN3216), apparently contained artifacts associated with mammoth bone, but it was destroyed by construction activities before it could be formally investigated (Archaeological Research Center records).

## **Research Topics**

1. Define the range of variation of Clovis projectile points.

2. Identify tool types typical of Clovis assemblages (other than projectile points).
3. Define Clovis social organization and population size.

## **Research and Management Goals**

1. Identify landforms likely to have preserved Clovis-age sediments.
2. Use surface finds of Clovis projectile points to prospect for intact buried sites.
3. Expand knowledge of Clovis culture.

## **National Register Listings**

None.

## **Archaeological Regions**

Black Hills, South Fork Cheyenne, White River Badlands, Upper Big Sioux

## **Clovis Sites**

39CU1142?, 39FA250, 39FA1277, 39FA2510, 39LK100, 39PN128?, 39PN3216, 39SH33, 39SH37

## **Bibliography**

Clovis in the Great Plains: Frison and Stanford 1982; Frison and Todd 1986; Kelly and Todd 1988; Kornfeld *et al.* 2010; Owsley and Hunt 2001; regarding Clovis hunting of horse, see Kooyman *et al.* 2006. Clovis in South Dakota: Hannus 1985, 1990.

## **Goshen Complex**

### **Overview**

A second Clovis-era archaeological complex is recognized for some areas of the Northwestern Plains. The Goshen complex is characterized by unfluted lanceolate projectile points associated with bison and occasionally with mammoth. Some Goshen points are virtually identical to Plainview points, suggesting a link between these two complexes, but the ages of the two complexes do not appear to match (Frison 1996:206). Known primarily from the Mill Iron site in southeast Montana and a sparse assemblage from the Hell Gap site in eastern Wyoming (Frison 1991, 1993), the Goshen complex is poorly understood at present. Although researchers hypothesize that Goshen follows the Clovis complex and predates Folsom with some overlap of each, no stratified Clovis-Goshen sequences have yet been discovered.

The Goshen component at the Hell Gap site in eastern Wyoming lay below a Folsom level. It consisted of a small assemblage of projectile points, tools, and chipping debris (Frison 1993).

Another small Goshen component (originally identified as Clovis) lay under a Folsom level at the Carter/Kerr-McGee site, 48CA12, also in eastern Wyoming (Frison 1984, 1993; Frison 1996:207). Two Goshen points were found in this level, along with another point fragment, a retouched flake, a camel bone, and four probable deer or pronghorn bones. Goshen points have been found in northern Wyoming in association with mammoth bone and in the Middle Park area of Colorado in association with bison (Frison 1993; 1996:207–208). Within South Dakota, Goshen projectile points have been found in the Black Hills, in the South Fork Cheyenne River region, in Harding County in the northwest corner of the state, and on the central Missouri River.

The Goshen complex is better represented at the Mill Iron site in southeastern Montana (Frison 1996). The most reliable dates from Mill Iron cluster around 10,850 BP. This single-component site includes a camp and faunal processing area and a bone bed containing the remains of at least 30 bison and two bones from mammoth. This bone bed appears to represent a holding area for partially butchered animals rather than the actual kill site (Frison 1996). Mill Iron provides evidence for the earliest communal bison hunting in the northern Plains. The site represents a winter bison kill (Frison 1996). Artifacts recovered from the site include 31 projectile points and fragments, and multiple bifaces, retouched flakes, end scrapers, raclettes, graters, and utilized flakes, as well as chipping debris. One distinctive projectile point may have been made as a religious offering rather than a functional weapon.

The Jim Pitts site in the southern Black Hills was a Goshen bison-processing locality. This firmly establishes the presence of Goshen in the Black Hills (Donohue and Hanenberger 1993; Sellet *et al.* 2009). Although the Goshen level at Jim Pitts lies beneath a Folsom level, it was dated to 10,100 BP, considerably younger than other Goshen sites in the region (Frison 1996:214–215). An artifact scatter in the central Black Hills and another in grasslands south of the Black Hills also contained Goshen projectile points; these sites have not yet been excavated. Another Goshen point from the central Black Hills lacked associated buried deposits. An artifact collection from Harding County in northwestern South Dakota contains several Goshen and Folsom projectile points from a single site; however, the exact location of this site is not known (Sellet 1999). Apart from bits of information on stone tool technology, hunting, and butchering, little is known of Goshen cultures in South Dakota.

## **Environmental Setting**

During the Goshen period in eastern South Dakota, precipitation continued to be quite low and winter temperatures began to rise. At the same time, regional water tables were dropping as glacial meltwater began to dry up (Yansa 2007). During this interval, spruce parkland developed into deciduous parkland along rivers and lowlands. Grasslands covered the stream divides and “knobs” east of the Missouri River and much of the area west of the river. The northern Great Plains was a mosaic of diverse habitats created by various stages of plant succession following the retreating Laurentide ice-sheet. Spruce or spruce-deciduous parkland persisted along the ice margins in northeastern and north central South Dakota until about 9900 BP. Southwest of this was a zone of deciduous parkland in the wetter bottomlands and grass on the higher elevations. Shrinking meltwater lakes created large areas of shoreline and mudflat vegetation. West of the river, grasses adapted to dry, hot conditions increasingly replaced the cold weather adapted species. In the Black Hills ponderosa pine forest increasingly encroached on the spruce forests established during the glacial advance.



*Figure 11. Paleoindian projectile points from 39CU1142 (ARC photo).*



*Figure 12. Excavations at 39CU1142, 1992 (ARC photo).*

## **Temporal Boundaries**

11,340 BP-10,760 BP. Radiocarbon dates from the Jim Pitts site suggest a later age for Goshen in western South Dakota.

## **Spatial Boundaries**

Western South Dakota and Missouri River Trench.

## **Property Types**

Bison kill and butchering sites. Potential for wider range of types similar to other Paleoindian contexts.

## **Locational Characteristics**

Goshen sites have been found in mountain, foothills, and plains zones in western South Dakota, but current information about this complex is too incomplete to reveal clear locational patterns. It is possible that some projectile points classified as Plainview or Angostura are actually Goshen; however, this does not change the site distribution pattern from various settings in and around the Black Hills.

## **Context Definition**

The Goshen Complex marks the Clovis to Folsom transition. In some regions, Folsom follows Clovis directly, but in the Northwestern Plains, the Goshen Complex overlaps both Clovis and Folsom. Goshen projectile points are intermediate in form between Clovis and Folsom types. These have been reported from Wyoming (Frison 1978:23), eastern Montana (Frison 1996), western South Dakota (Jim Pitts, 39CU1142), and Missouri River (Travis II, 39WW15). The Mill Iron site (24CT30), located on the Montana-South Dakota border, produced unfluted Goshen points dated to 11,340 BP (Frison 1996).

## **Condition**

Like other early Paleoindian sites, the few known Goshen sites were preserved by chance when a stream terrace, point bar, or alluvial fan escaped erosion because of its uniquely protected local topography. Some projectile points have been found on the surface with no associated burial component, suggesting that the sites from which they came were removed by erosion. The Jim Pitts Site was very shallow, with thousands of years represented by less than 100 cm of sediment. This condition makes separation of various components difficult and muddies the view of individual cultures. The Mill Iron Site in Montana contained only one component, so this was not a problem; however, such sites cannot answer questions of how one cultural expression succeeded another.

## **Voids in Research**

See Paleoindian introduction.

## **Research Questions**

1. What is the temporal and spatial extent of the Goshen Complex in South Dakota?
2. What is the nature of the Clovis-Folsom transition, especially in regard to social organization, settlement pattern, and cultural heterogeneity?
3. Why does Goshen occur as intermediate between Clovis and Folsom in some areas of the Great Plains, but not all? Is Goshen a specialized mountain-foothills adaptation?

## **Research and Management Goals**

See Paleoindian introduction.

## **National Register Listings:**

None. The Jim Pitts Site (39CU1142) was declared National Register of Historic Places eligible, but most of it has subsequently been removed by archaeological excavation and highway construction.

## **Goshen Sites**

39CU1142, 39CU1306, 39CU2694, 39FA1277, 39PN2757, 39SL45, 39WW15

## **Archaeological Regions**

Black Hills, South Fork Cheyenne, Bad-Cheyenne, Grand-Moreau

## **Bibliography**

Goshen in northern Great Plains: Frison 1984, 1991, 1993, 1996; Kornfeld *et al.* 2010. Goshen in South Dakota: Donohue 2003; Donohue and Hanenberger 1993; Fosha 1997; Sellet *et al.* 2009

## **Folsom-Midland Complex**

### **Overview**

Following the transition to modern climatic conditions and the extinction of the mammoth, the Folsom complex replaced Clovis and Goshen in the Great Plains and elsewhere in North America. Evidence for Folsom period occupation of the study area includes isolated finds from western South Dakota, two sites east of the Missouri River near the Big Bend, and one from northeastern South Dakota. Buried sites occur in the lower elevations of the Black Hills (39CU1142 and 39FA1603), in the White River Badlands (39SH101), near the mouth of the White River (39TP3), and in northwestern South Dakota (39HN931 and 39HN1357). The first four of these are campsites where people made chipped stone tools; the function of the other site is not known (Sellet 1999).

Little is known of the Folsom complex in South Dakota. At the Sewright Site, 39FA1603, one test unit exposed a deeply buried feature containing chipping debris and a Folsom projectile point. At the Jim Pitts site, 39CU1142, Folsom points occurred in poorly separated early Paleoindian levels with evidence of bison processing. None of the other Folsom sites in the state have been formally investigated.



Figure 13. Chipping feature at 39FA1603 with Folsom projectile point at bottom center, 2006 (ARC photo).

A more complete picture of Folsom life comes from sites in Wyoming and Colorado, including the Agate Basin site (Frison and Stanford 1982), an overlook used in bison hunting in the western Black Hills (Hofman and Ingbar 1988), a redeposited Folsom tool assemblage in the northwestern Black Hills (Kornfeld 1988), and Folsom components at Hell Gap (Irwin-Williams *et al.* 1973) and Carter/Kerr-McGee (Frison 1984). The Hanson Site in the Bighorn Basin provides evidence of a foothills-adapted Folsom variant (Frison 1991, 1992). Analysis of stone tool technology from the Hanson Site suggested that people planned for temporary shortages of raw materials as they moved into areas with poor or unknown resources (Ingbar 1986, 1992). The Mountaineer Site in Colorado's Gunnison Basin contained a structure probably used as a house (Stiger 2006). This and sites in the Colorado Rockies indicate that Folsom people occupied high altitude areas as well as plains and foothills (Stanford and Day 1992).

The Agate Basin site complex in the southwestern Black Hills foothills contains two Folsom components (Frison and Stanford 1982). These yielded radiocarbon dates of 10,665 and 10,780

BP. The Folsom component at the Brewster locality contained a scatter of bison bone, a concentration of bone fragments, and a shallow basin hearth (Frison and Stanford 1982; Agogino and Frankforter 1960). Associated artifacts were a bone awl or projectile point fragment, two Folsom projectile points, and several scrapers, flake tools, and bifaces. Red ocher was present throughout the soil matrix.

A second Folsom component at Agate Basin was more extensive (Frison and Stanford 1982). This occurred as two discontinuous deposits. Stone artifacts and bison, rabbit, pronghorn, and canid bone formed a dense scatter across the two areas. The upper component contained several concentrations of bone, three hearths, and three concentrations of small flakes. This upper level also contained the remains of two possible structures. The better defined of these was a circular area about three meters in diameter marked by a “barely perceptible” change in sediment color and texture. This feature contained a hearth and a concentration of flakes and stone tools. Among the artifacts found there were several bone needle fragments, unfinished stone projectile points, and antler tools that may have been used in fluting the projectile points. Just outside its perimeter was a bison rib stuck into the underlying sediments like a peg. An identical bison rib “peg” was found alongside the second proposed structure. These structures were thought to be for special activities such as shamanism or equipment storage rather than habitations. This level also contained large amounts of red ocher, as well as fluted and unfluted Folsom points, scrapers, graters, serrated flakes, flake and blade tools, bifaces, cobble tools, anvils, hammerstones, abrading stones probably used in hide processing, and a grinding slab used to pulverize red ocher. Several finely incised bison ribs were also found in this level.

Several small Folsom sites have been found in the northwestern Black Hills. A Folsom site in the western foothills was identified as a bison hunting overlook (Hofman and Ingbar 1988). Situated on a prominent butte on the Cheyenne-Belle Fourche divide in northeastern Wyoming, this site contained a small number of chipped-stone tools and flakes. Another possible Folsom component in the northwestern Black Hills, 48CK840, consisted entirely of redeposited artifacts (Kornfeld 1988). These included chipping debris, a utilized flake, a retouched flake, a scraper, a hammerstone, a core, and a biface, as well as an unfluted projectile point that could be either Goshen or Folsom. A third site in the northwestern Black Hills, 48CK1317, contained a Folsom projectile point, a point base with a channel scar on one side, and several bifaces, scrapers, and pieces of fire-cracked rock, along with a scatter of chipping debris (Noisat 1990). This site was located on a ridge top overlooking the confluence of two streams.

The Folsom level at the Carter/Kerr-McGee site in the Powder River basin contained broken bison bone, smaller amounts of deer bone, and a fire hearth in a shallow depression (Frison 1984). Charcoal from the hearth was dated at 10,400 BP. Artifacts included a fluted Folsom projectile point, broken projectile point preforms (unfinished tools), and channel flakes, as well as side scrapers, end scrapers, graters, retouched flakes, and a chipping debris assemblage dominated by small pressure flakes. A set of tools found together, comprising three stone tools and two bone tools, may have served as a butchering kit. The tools and chipping debris were of local stone and from sources to the west in the Big Horn Mountains. Like many Clovis and Folsom sites, red ocher was ubiquitous in the Folsom level of Carter/Kerr-McGee.

The Hanson Site in the northern Bighorn Basin indicated both hunting and gathering for this period. The site contained both fluted and unfluted projectile points (Frison 1991; Frison and

Bradley 1980). This suggests that the Midland projectile point type, which is essentially an unfluted Folsom type, can be subsumed under the Folsom type. As at Hell Gap and Agate Basin, the site had features suggesting small living structures. These were three circular areas of hard-packed sediment. Like other area Folsom sites, Hanson contained large amounts of red ocher, and like the Agate Basin site, it contained the remains of a bone needle. The site yielded dates of 10,700, 10,300, and 10,080 BP. Folsom sites elsewhere date to between 10,850 and 10,375 BP (Frison 1978).

Folsom people made circular structures by placing poles into the ground as supports. The Folsom level at Hell Gap contained two circular alignments of postmolds forming an enclosure about two meters in diameter and a third about four meters in diameter (Irwin-Williams *et al.* 1973). The Mountaineer Site in western Colorado contained the remains of a circular structure with an exterior hearth, and possibly a windscreen (Stiger 2006). This structure was 4–5 meters in diameter, and probably was constructed by setting up aspen poles tipi style, anchoring their ends with large rocks, and covering this base with smaller branches and mud daubing. The structure had a hearth inside it and another outside with several dark stains around it, perhaps from support poles for a windscreen. The Folsom component contained over 35,000 artifacts, including several hundred stone tools. The stone tools and debris were mostly of local material. It appeared that the shelter had been cleaned out from time to time by removing stone and bone debris. A pile of quartzite near the shelter may have provided an emergency supply of tool-stone. The shelter contained several hundred bone fragments and an anvil that had been used for smashing bones open. Some bone was from bison or elk, but smaller animals were also represented. This site, along with several others in the Rockies, shows that some, if not most, Folsom groups were mountain-based, stayed in one place for extended periods, returned to former habitations repeatedly, and participated in small scale subsistence activities. The bone smashing feature hints at production of pemmican, a development that allowed people to have more regular patterns of movement and longer stays in one place.

Folsom may mark the beginning of what might be called a true Northwestern Plains cultural pattern--one that would persist in various forms until the Protohistoric period when horses were widely adopted by native populations. This is essentially a pattern of small, independent groups, probably based on family ties, pursuing a seasonal round of subsistence activities within a constricted territory. Larger groups probably assembled once or twice a year for communal hunts and otherwise dispersed into smaller camps. No evidence exists for such seasonal aggregation in Clovis times; thus, Clovis social organization probably was essentially different from that of the post-Clovis period. Post-Clovis people appear to have reused some sites, suggesting that their movements were repetitive and predictable (Bamforth *et al.* 2005; Stiger 2006). Folsom also marks the first distinct dichotomy between mountain-foothills adapted groups and plains adapted groups (Husted 1965; Frison 1992). The mountain-based groups appear to have had small, localized territories, within which they hunted and foraged for a wide range of plants and animals. The plains groups were much more mobile, following bison herds through large territories. Both had well defined territories (Ellis 1989; Hayden 1982). Alternatively, these two patterns could represent groups with large territories who roamed the open plains during part of the year and built up stockpiles of food and other necessities that permitted them to stay in one place for most of the winter. This dichotomy between highly mobile, temporary occupation of the plains and more localized, long-term stays in high elevation areas persisted throughout the Paleoindian period.

## **Environmental Setting**

The Folsom culture coincides with the transition from Pleistocene to modern conditions. Environmental trends from the Clovis and Goshen periods continued. In eastern South Dakota, regional water tables continued to drop as the ice-sheet receded and meltwater lakes dried under a dry precipitation pattern (at least 4% lower than today's). Deciduous trees replaced spruce along lakes and streams while uplands remained in grass. These diminishing wet areas formed something of an oasis pattern in eastern South Dakota with pockets of water and trees dispersed throughout prairie lands (Yansa 2007). In the west, grasslands had replaced parklands and forest, except in the higher Black Hills, and conditions were trending toward warmer and drier (Fredlund and Tiezsen 1997). Prairie vegetation included more modern species, as slow migrators arrived to colonize the drier portions of the landscape. In the east, deciduous parkland persisted in the bottomlands, but increasingly gave way to prairie. Extensive wetlands, created as lakes and ponds receded, supported sedges and mudflat plants that provided good winter forage for bison. Mammoth, camel, and horse were extinct or rare. By 10,000 BP, summer temperatures were about the same as today's, but winter temperatures averaged several degrees cooler (Kutzbach *et al.* 1998).

## **Temporal Boundaries**

Folsom Complex sites in the Great Plains date from 10,900 BP-10,100 BP

## **Spatial Boundaries**

Entire state.

## **Property Types**

In South Dakota, only small camp sites are known for this period; however, camps and bison kill sites have been found in Wyoming.

## **Locational Characteristics**

In western South Dakota, Folsom components frequently occur in foothills settings. Elsewhere in the state and region, Folsom is considered a plains adaptation.

## **Context Definition**

Medium-sized, fluted lanceolate points with parallel to convex sides are an important Folsom marker. These projectile points are widest at or above the midsection and exhibit a broad, snub-nosed tip. Bases are concave with slightly rounded or pointed basal ears (Morrow 1984:14). Midland points are like Folsom points without the fluting and are now believed to be part of the same cultural complex. Folsom and Midland points frequently occur with bison bone, indicating a hunting-based subsistence. At present, Folsom house types and settlement patterns have not been defined, although some evidence exists for small, circular shelters, including a mud daubed pole and brush structure from Colorado.

## **Condition**

Unknown. As with other early Paleoindian sites, active erosion and deposition in the post-glacial period worked against preservation of many Folsom sites (Bettis and Mandel 2002; Walker 1992; Waters and Kuehn 1996; Yansa 2007). Some sites may be deeply buried in stream terraces or remnant alluvial fans. One of the better preserved and stratified Folsom components in South Dakota now lies in part under a highway (39FA1603). The Folsom component at Jim Pitts (39CU1142) was excavated in advance of highway construction. This site had shallow deposition, making it difficult to separate materials of different ages. A Folsom camp in the White River Badlands was badly eroded. Another White River site, 39TP3, contained Folsom and Plains Village materials, but it was recorded in the 1930s and its setting and condition are unknown. In general, well preserved, stratified or single-component Folsom sites are rare in South Dakota.

## **Voids in Research**

Little is known of Folsom life in South Dakota. Sites in the western portion of the state seem to reflect a mountain-foothills adaptation, but few details are available. Archaeologists do not yet know what these people ate, what kind of houses they lived in, how they hunted, what their religious beliefs were, or how they organized themselves into groups. The Wyoming data are helpful to some extent, but cannot address the unique environment of the Black Hills. In eastern South Dakota, even less is known, as Folsom discoveries are largely limited to isolated projectile points found on the surface. It is not clear whether different Folsom groups occupied separate environmental zones and, if so, how they adapted to their local conditions.

## **Research Topics**

1. What is the nature of the Folsom to Plano transition, especially with regard to social organization, settlement pattern, and cultural heterogeneity?
2. Is Folsom essentially a mountain culture whose people made occasional visits to the open plains to hunt large game? Where and when does the transition to mountain-foothills settlement take place?

## **Research and Management Goals**

See Paleoindian introduction.

## **National Register Listings**

None. 39FA1603 and 39CU1142 were found eligible to the National Register.

## **Archaeological Regions**

Black Hills, Belle Fourche, Sandstone Buttes, White River Badlands, Big Bend, Prairie Coteau, Sand Hills

## **Folsom Sites**

39CK2, 39CU1142, 39CU1968 (possible Midland), 39FA1603, 39GR30, 39GR31, 39HE6, 39HU78, 39MD27, 39SH101, 39TP1, 39TP2, 39TP3

## **Bibliography**

Folsom on Northern Great Plains: Agogino and Frankforter 1960; Bamforth *et al.* 2005; Frison and Bradley 1980; Frison and Stanford 1982; Frison 1984, 1991; Haynes *et al.* 1992; Hill 2007; Holliday 2000; Ingbar 1992; Irwin-Williams *et al.* 1973; Kornfeld 1988; Kornfeld *et al.* 2010; Meltzer 2006; Stiger 2006; Folsom in South Dakota: Sellet *et al.* 2009

## **Plainview Complex**

### **Overview**

Plainview has traditionally been viewed as a complex that post-dates the Folsom Complex in the Great Plains. Recent reexamination of Plainview projectile points, however, shows that they are essentially the same as Goshen points. The Goshen Complex pre-dates, but overlaps, Folsom; thus, the appearance of the same projectile point type both above and below Folsom levels has created controversy. Are Plainview and Goshen separate archaeological cultures, or do they represent a single culture within which a fad for fluting projectile points came and went? An answer requires more information than is currently available.

### **Environmental Setting**

See Folsom discussion.

### **Temporal Boundaries**

In the southern Great Plains, complexes identified as Plainview, Milnesand, and Lubbock are dated 10,200–9800 BP, well outside the range for Clovis. In the northern Great Plains, Plainview sites have been dated as early as 11,000 BP–10,500 BP. These conflicting dates are as likely to reflect confusion over projectile point typology as actual dates for the northern Plains Plainview sites.

### **Spatial Boundaries**

Southwestern South Dakota.

### **Property Types**

Bison kill. Potential for wider range of types similar to other Paleoindian contexts.

### **Locational Characteristics**

Current data are not sufficient to infer location patterns.

## **Context Definition**

A number of authors, including Dibble and Lorrain (1968), Wheat (1972), and Irwin-Williams *et al.* (1973), have suggested that the unfluted Plainview point type may mark a transition from Folsom into the long sequence of unfluted point types combined under the Plano rubric. Plainview points are medium-sized lanceolate points with parallel sides and a concave base. Blade surfaces generally exhibit horizontal, parallel pressure flaking scars. Two or three thinning flakes have usually been drawn from the basal concavity. Grinding of the lateral and basal edges is common (Morrow 1984:15). The cultural context of Plainview in South Dakota is not known; current information suggests it is a variant of the Goshen Complex. Without a stratified Goshen-Plainview sequence, Plainview can be treated as part of the Goshen Complex.

## **Condition**

Unknown

## **Voids in Research**

See Paleoindian introduction.

## **Research Topics**

1. Do Plainview sites occur in South Dakota?
2. Is Plainview a separate complex in South Dakota, or simply part of the Goshen Complex?

## **Research and Management Goals**

See Paleoindian introduction.

## **National Register Listings**

None.

## **Archaeological Regions**

Black Hills, South Fork Cheyenne, White River Badlands, Northeast Lowlands?

## **Plainview sites**

39CU12, 39CU252 39CU1182, 39DE115?, 39FA49, 39FA790, 39FA1603, 39PN5 (Jay Hamm). Site number 39PN5 refers to a lanceolate projectile point found at the foot of a dam in 1953 (Beaubien 1953:5) and described as "similar to a Plainview type" (Taylor 1961:80).

## Bibliography

Donohue 2003

## Early Plano Period: Agate Basin, Hell Gap, and Alberta-Cody Complexes

### Overview

The trend toward more diverse use of both game and nongame resources accelerated during the Plano period, the last Paleoindian cultural tradition. This follows a gradual trend toward more seasonally extreme climates and a decrease in available moisture in the northern Great Plains. By the end of the Plano period, nearly the entire Great Plains had become semi-arid grassland. Mammoth, horse, and other Pleistocene fauna were extinct and bison were rapidly evolving into the more compact species seen today. The Plano rubric encompasses several distinct complexes, defined primarily on the basis of projectile point types. From early to late Plano, these include Agate Basin, Hell Gap, Alberta-Cody, Scottsbluff-Eden-Cody, Brown's Valley, Frederick-Lusk, Angostura, Frontier, and James Allen. Radiocarbon dates from Plano sites range from about 10,500 to 7800 BP (Holliday 1999). The various complexes seem to overlap both temporally and spatially (Sellet 2001). Distinct plains and mountain-foothills complexes develop by the end of the Plano period.

Plano artifact assemblages appear to change through time and across space, although the exact relationship of the various artifact complexes to one another is not yet clearly defined (Frison 1991). Each complex has a characteristic projectile point type or types, most of which are large, roughly lanceolate in outline, and finely crafted with parallel flaking typical of most varieties. Agate Basin and Hell Gap projectile points are thick in cross-section; Hell Gap points are wider and more distinctly shouldered than Agate Basin (Frison 1991: 57–62). Alberta and Cody Complex projectile points are stemmed or have incipient stems. Most early Plano points are basally ground. At present, researchers disagree as to whether the various projectile point types reflect different ethnic groups, different functions, or the vestiges of early migrations (Husted 1968, 1995; MacNeish 1963; Sellet 2001). The earlier Plano complexes typically contain side scrapers, notched flakes, beaked and edge-angle end scrapers, notched flakes, and bifacial knives. An eyed needle and other shaped bone tools were found in the Agate Basin levels at Hell Gap (Irwin-Williams *et al.* 1973). Drills, choppers, ground stone implements, bone awls, and bone beads are also found in Plano assemblages. A possible deer antler atlatl hook was found in the Hell Gap-Agate Basin level of the Carter/Kerr-McGee site (Frison 1984).

Several early Plano sites have been excavated in or near South Dakota: the Hudson-Meng bison kill about 50 miles south of the Black Hills in Nebraska (Agenbroad 1978; Todd and Rapson 1995); the Agate Basin site in the southwestern Black Hills foothills (Frison and Stanford 1982); the Burghduff Site in northwestern South Dakota (Muñiz 2005), the Jim Pitts site in the southwestern Black Hills (Sellet *et al.* 2009), and Travis II on the Missouri River (Toom 1991, 1994).

The early Plano period saw continued emphasis on large game hunting, particularly of bison; however, this was accompanied by a trend toward more diverse subsistence economies and more

locally specialized subsistence patterns. On the open plains, communal bison hunting, often on a large scale, was the rule (Frison and Stanford 1982; Frison 1974; Stanford 1978). Such hunts often took place in midwinter, presumably to allow frozen storage of the meat (Frison 1984:308). These hunts employed natural traps such as parabolic sand dunes and arroyos (Frison 1974) and possibly cliff drives, as well (Wheat 1972). Researchers hypothesize the use of corrals or pounds at several sites, but have not yet discovered their actual remains (Frison 1978, 1984; Mulloy 1959; Stanford 1978; Jepsen 1953; Frison and Stanford 1982).

Typical of early Plano sites in the northern Great Plains is the Carter/Kerr-McGee site (48CA12) in the central Powder River basin. It contained a remnant bison bone bed of Alberta-Cody age, preserved in an arroyo fill (Frison 1984). Bone at the site indicates a midwinter communal hunt, probably achieved by driving at least 47 bison into an arroyo or other natural trap. The bone bed comprised partially dismembered carcasses stacked up away from the kill area. These probably were intended to remain frozen for use throughout the remainder of the cold season. The kill site itself was not preserved. The upper component contained 17 Alberta, Eden, and Scottsbluff projectile points, four large side scrapers, a side-scraper/graver, and a graver. These tools and the chipping debris assemblage were made of stone from the Black Hills and Hartville Uplift, indicating some eastward mobility.

While bison kill, butchering, and meat cache sites dominate the early Plano record for the northern Great Plains, other sites indicate activities besides hunting. The Agate Basin level at Hell Gap contained three possible dwelling remains. These were circular arrangements of small postmolds, forming enclosures about two meters in diameter. A burial in the eastern Colorado Rockies was dated at 9700 to 9400 BP. This contained the remains of an adult male, covered with red ochre and accompanied by bifaces, a hammerstone, a smoothed slatestone, worked bone items, and a perforated elk tooth (Anderson 1966; Lynch 1988).

Early Plano sites in South Dakota appear to represent small, highly mobile groups with specialized local economies based on bison, smaller game, and plant resources. If the better known sites from Wyoming are a guide, perhaps as many as 75–100 persons formed cooperative units for communal hunts (Frison 1984:309), but group size may have fluctuated seasonally. A possible Alberta-Cody complex site in the central Black Hills (39PN97) contained a postmold with a bison bone brace in it, indicating some kind of built structure, but the site was not fully investigated (Tratebas and Vagstad 1979; Tratebas 1986). The Buster Hill site (39MD145) contained a variety of Plano projectile points. This site represents a series of short term hunting camps, but the various components overlapped and were mixed due to minimal deposition (Hannus *et al.* 1997). Preliminary investigations at the Burghduff Site, 39HN976, indicate a bison kill or butchering sites with typical Alberta-Cody projectile points. This site may contain older components, as it has distinct buried soils below that contain the Cody materials and bison bone fragments (Muñiz 2005b). The Travis II Site (39WW15) on the Missouri River near Mobridge formed when water- or wind-laid sediments quickly filled a small stream channel or depression within glacial outwash. The site contained numerous Paleoindian projectile points. The most common point type at Travis II resembles the Agate Basin type, but also resembles the Frederick or Angostura type (Ahler *et al.* 1977:77). Most of the site was lost to shoreline erosion and stabilization activities before archaeologists could effectively study it. Apart from chipped stone tool production, the activities that took place at Travis II are unknown (Toom 1991, 1994).



Figure 14. Paleoindian projectile point fragments from the Travis II site, 39WW15 (ARC photo).



Figure 15. Left, projectile points; right, bison bone processing feature, Burghduff site, 39HN976, 2018 (ARC photos).

## Environmental Setting

As the regional water table dropped, grasses replaced deciduous trees throughout what is now South Dakota, except in the higher Black Hills. There, the shift was from spruce to ponderosa pine forest. At 9000 BP, summer temperatures were warmer in the eastern prairies than modern conditions by 2–4°C and winter temperatures were colder by 2–5°C. The Laurentide ice-sheet no longer diverted air masses to the south, as it had done during the terminal Pleistocene, but a zonal flow of dry Pacific air dominated from 10,000 to 7000 BP, creating dry conditions on the northeastern Great Plains (Bartlein *et al.* 1998; Yansa 2007). At 9000 BP precipitation was lower than modern levels throughout eastern South Dakota (Yansa 2007). Grasslands dominated everywhere except the higher Black Hills. Lakes became more saline as water tables dropped. The overall trend was for a more uniform environment dominated by grasslands and, increasingly, by drought- and heat-tolerant species. Such an environment supported bison and other grazers, but availability of drinking water increasingly dictated their locations and need to migrate long distances for fresh forage.

## Temporal Boundaries

10,500–9400 BP.

## **Spatial Boundaries**

Western and central South Dakota.

## **Property Types**

Bison kill, camp sites, meat caches, possible storage or habitation structures. Potential for wider range of types similar to other Paleoindian contexts.

## **Locational Characteristics**

Early Plano sites and artifacts have been found in a variety of settings in central and western South Dakota. Intact buried deposits occur as erosional remnants such as old arroyo fills, remnant alluvial fans, or remnants of old stream terraces.

## **Context Definition**

Early Plano complexes appear to overlap the Folsom Complex in time and space and evolve over the next millennium across the Great Plains. Early Plano period sites are recognized by unfluted lanceolate projectile point types, some with broad stems. Projectile point types that occur in the early Plano period are Agate Basin, Hell Gap, Alberta, and Cody. These include large, lanceolate, and basally constricted and rounded types (Hell Gap and Agate Basin types) and large, lanceolate forms with distinct stems (Alberta and Cody types). Most types have bases and stems dulled by grinding. Archaeologists disagree as to the temporal and spatial extent of the various complexes; at present, it is clear only that they do not form a straightforward sequence through time, but overlap each other to various degrees in various regions of the Great Plains.

## **Condition**

Unknown

## **Voids in Research**

See Paleoindian introduction.

## **Research Topics**

See Paleoindian introduction.

## **Research and Management Goals**

See Paleoindian introduction.

## **National Register Listings**

None

## **Archaeological Regions**

Sandstone Buttes, Grand-Moreau Tablelands, Black Hills, Bad River Basin, White River Badlands, Bad-Cheyenne, Grand-Moreau, Yankton, Northeast Lowlands

## **Early Plano Sites**

39PN751, 39SH129

## **Agate Basin Sites**

39CU989, 39CU1142, 39DW385, 39FA423, 39HK70?, 39HN163, 39HN928, 39HN998, 39MD145, 39PN751, 39PN1124, 39PN1444, 39SH129, 39ST228, 39ST1202, 39WW15

## **Alberta-Cody Sites**

39SH85, 39DE9, 39CL7, 39CU1142, 39FA65, 39FA1603, 39HN976, 39LA3, 39MD733, 39PE285, 39PN97

## **Hell Gap Sites:**

39FA1703, 39JK195, 39PN1450

## **Bibliography**

Kornfeld *et al.* 2010

## **Late Plano: Fredrick, James Allen, Scottsbluff-Eden-Cody, and Frontier Complexes**

### **Overview**

Late Plano complexes postdate the Hell Gap, Agate Basin, and Alberta-Cody complexes. Various types of parallel-oblique flaked, lanceolate, unfluted projectile points characterize Plano sites. These differ primarily in the shape of the base, which may be constricted, tapered, or stemmed (Frison 1991; Schultz and Eiseley 1935; Wheat 1972; Bradley 1991). Late Plano projectile point types and complexes are Lovell Constricted, James Allen, Eden, Scottsbluff, Cody, Angostura, and various unnamed projectile points with parallel oblique flaking grouped under the Frontier Complex. Some projectile points classified as Angostura belong in this category. The Alberta projectile point characterizes the early Plano Cody Complex, but in later times, the characteristic projectile points of the Cody Complex are the similarly broad-stemmed Eden and Scottsbluff types. The later Plano complexes, like early Plano, contain side scrapers, notched flakes, beaked and edge-angle end scrapers, , and bifacial knives, as well as eyed needles and other shaped bone tools, but generally replace the beaked and edge-angle end scrapers with raclette, ground bit, ventrally retouched, and flat flake end scrapers and side scrapers. The Jurgens site, dated at about 9000 BP, contained a small bone tube, grinding slabs and manos, grooved shaft

abraders, a quartz crystal, red and yellow ocher, antler and bison-tooth atlatl hooks, and an engraved bone, as well as many utilized bone fragments and distinctive projectile points and knives (Wheat 1979). A feature similar to a tipi ring occurred in the Frederick level at Hell Gap. This was a circular arrangement of small boulders, forming an enclosure about two meters in diameter. These possible habitation remains lacked interior features (Irwin-Williams *et al.* 1973).

Although most hunting focused on bison, late Plano sites generally contain varied faunal assemblages, with deer, elk, pronghorn, and smaller animals, along with a few holdovers from the Pleistocene fauna including camel and horse (Frison 1974; Greiser 1985; Sundstrom 1995–96). Large numbers of bison were taken in communal hunts in the open plains. Several sites contain evidence that meat was cached in the late fall and winter for cold-season use (Frison 1978, 1991; Kelly and Todd 1988). In the Northwestern Plains, bison seem to decrease in importance over time. This is evident in the increasingly diverse faunal assemblages from Hell Gap (Irwin-Williams *et al.* 1973). For example, shellfish occurs in the Frederick level at Hell Gap. The Barton Gulch site in Montana contained evidence of extensive plant food processing and consumption (Aaberg 1992; Davis *et al.* 1988). Grinding slabs and manos are found at a high percentage of Plano sites, especially the later ones. This may indicate increased reliance on plant foods, the beginnings of pemmican production, or both (Sundstrom 1995–96). Because many Plano sites have multiple occupation layers, it appears that people were following a regular pattern of seasonal movements throughout a distinct territory (Bamforth *et al.* 2005). A comparison of tool-stone from various Cody Complex sites indicates that groups became increasingly localized, using small territories for bison hunting, after 9000 BP (Muñiz 2005a).

During the late Plano period, a distinctive series of complexes developed in mountain-foothills zones. The makers of James Allen, Lovell Constricted, Pryor Stemmed, and other similar projectile points followed a highly diversified subsistence economy. This involved seasonal hunting of mountain sheep, deer, elk, and small game, as well as extensive gathering and processing of plant foods. Communal bison hunting is not indicated for these sites, although individual bison sometimes were taken.

The mountain-foothills complexes are known mainly from the mountain ranges surrounding the Bighorn Basin (Frison 1978, 1991; Husted 1968, 1995). Similar sites also occur along the Front Range of Colorado (Benedict 1981, 1985; Benedict and Olson 1973, 1978) and Alberta (Reeves and Dormaar 1972). Although James Allen and Lovell Constricted projectile points occur in the Black Hills (Haug 1978a; Eckles 1978:16; Tratebas and Vagstad 1979; Hannus *et al.* 1997), no detailed analysis of mountain-foothills complexes there has been undertaken. Both lanceolate and round-based stemmed projectile points have been assigned to the late Plano or Early Archaic period in the Black Hills (Tratebas 1986). The chronological placement of these various projectile point types has relied entirely on comparisons with point sequences from other areas of the northern Great Plains and thus demands further study before such artifacts can be considered reliable time diagnostics.

The mountain-foothills versus plains dichotomy that marks the late Plano period persisted to varying degrees throughout the remainder of northern Great Plains prehistory. South Dakota has both patterns and both sets of archaeological complexes. The plains-oriented communal bison-hunting pattern is represented at the Agate Basin and Hudson-Meng sites, lying just outside South Dakota in Wyoming and Nebraska, while some stemmed point types and sites with diverse

subsistence remains are found in the Black Hills. The use of Black Hills tool-stone by the Hudson-Meng bison hunters (Witzel and Hartley 1976) suggests that their resource procurement range included both plains and mountain zones. The Angostura Site in the southern Black Hills had a diverse bone assemblage, suggesting a broad based subsistence pattern rather than large-scale bison hunting (Hughes 1949).



Figure 16. Projectile points (left and center) and drill (right) from the Long site, 39FA65 (ARC photo).

In the Black Hills proper, what appear to be Late Paleoindian projectile points have been found throughout the uplift during survey and testing projects; however, most of these finds have not been independently dated. These are most common at large, multicomponent sites in high-altitude meadows, with fewer finds occurring in the foothills. These sites may represent the warm season habitations of small groups of hunters from the plains surrounding the Black Hills (Tratebas 1986). It is not known whether mountain-oriented groups occupied the Black Hills on a year-round basis. Such groups could have been based in rock shelters, which are not well-represented in the sample of identified Plano sites in the Black Hills and thus would not show up in the archaeological record as it currently stands (Tratebas 1986).

Elsewhere on the Northwestern Plains, late Plano complexes indicate a continued emphasis on bison hunting. Ample evidence exists to confirm the use of natural features as bison traps and jump-offs. At the same time, the trend toward a more diverse subsistence base continued, especially in mountainous areas. Other types of communal hunts targeted mountain sheep or

pronghorn (Frison *et al.* 1986). Remains of deer, wapiti, pronghorn, and smaller animals occur along with bison in some Plano assemblages. No doubt, nongame resources were used as well, as the highly mobile Plano groups passed through their seasonal cycles of hunting and gathering; however, plants and other nongame resources are generally not preserved in archaeological deposits in the area. Discovery of a 8600-year-old sheep-trapping net in a cave in the Absoroka Mountains in northern Wyoming confirms the use of large fiber nets in communal hunts of mountain sheep-sized game during this period (Frison *et al.* 1986). Numerous panels of pecked rock art in the southern Black Hills illustrates just such communal hunting of deer, pronghorn, and mountain sheep using standing nets. This rock art is at least of Archaic age and possibly older (Sundstrom 2004).

In the Missouri River area, points similar to the Frederick type have been found at the Walth Bay site (39WW203), located near Mobridge (Ahler *et al.* 1974).

In eastern South Dakota, the Browns Valley complex is represented by Browns Valley points and knives. The points are similar to the aforementioned Frontier complex—unstemmed lanceolate forms with concave bases and parallel oblique flaking—and could be considered part of the same general complex. The knives resemble the points, but exhibit asymmetrical sides. Browns Valley is not well dated, but appears to fall anywhere between 9000 and 8000 BP (Anfinson 1997:30–32).

## **Environmental Setting**

See discussion for Early Plano. The trend toward dry conditions continued throughout this period, with grasslands dominant throughout most of South Dakota by 9000 BP.

## **Temporal Boundaries**

9400–7800 BP

## **Spatial Boundaries**

Entire state.

## **Property Types**

Bison kills, other hunting sites (individual and communal), camp sites, possible corrals or house structures, rock shelters, rock art.

## **Locational Characteristics**

Late Plano sites occur throughout South Dakota in a wide variety of settings. Streamside, butte top, rock shelter, and open plains settings are common. Sites are most likely to occur in places where erosion has spared remnants of stream terraces, alluvial fans, and rock shelter deposits. Buttes, mesas, and river bluffs with preserved wind-borne sediments many also contain late Plano sites. In the higher Black Hills, such sites occur near permanent springs.

## **Context Definition**

Plano period sites are recognized by unfluted lanceolate projectile point types, many of which are broadly stemmed. Projectile point types that occur in the early Plano period are Angostura, Eden, Scottsbluff, Frederick, Cody, James Allen, Lovell Constricted, and Pryor Stemmed. Most types have bases and stems dulled by grinding. Archaeologists disagree as to the temporal and spatial extent of the various complexes; at present, it is clear only that they do not form a straightforward sequence through time, but overlap each other to various degrees in various regions of the Great Plains.

## **Condition:**

Unknown

## **Voids in Research**

The ages of various Plano point types are not well defined. The adaptations and relationships of groups that made various types of Plano projectile points are unclear. Data from intact Plano sites are very limited.

## **Research Topics**

1. Define the relationship between the lanceolate projectile point from the Travis II site, those classified as Agate Basin and Angostura types, and similar points from elsewhere in South Dakota.
2. What does the heterogeneity of the artifacts mean in terms of cultural heterogeneity? Do various point types overlap in time and space? Why or why not?

## **Research and Management Goals**

See Paleoindian introduction.

## **National Register Listings**

None

## **Archaeological Regions**

Black Hills, Sandstone Buttes, South Fork Cheyenne, Belle Fourche, Bad River Basin, Grand-Moreau Tablelands, Grand-Moreau, Lower James

## **Angostura Sites**

39BU69, 39BU107, 39CL7, 39CU401, 39CU811, 39CU1199, 39CU4365, 39DV5, 39DW385, 39DW391, 39FA60, 39FA65, 39HN373, 39HN1058, 39LA3, 39MD145, 39PN100, 39PN219, 39PN2757, 39WW15

## **Scottsbluff-Eden-Cody Sites**

39BK19, 39CU1142, 39CU4367, 39FA1180 39FA1452, 39HN976, 39HN1299, 39LA827, 39PN3019, 39PN3190, 39WW16, 39WW53

## **Frederick-Lusk**

39FA405

## **Parallel Oblique**

39FA1074, 39PN1809

## **Lovell Constricted**

39FA416?, 39HK70?, 39LA254, 39PN128, 39PN183, 39PN326

## **James Allen Site**

39CU244, 39FA11, 39FA1961, 39MD145

## **Other**

39CU1850, 39CU357

## **Rounded Base and Other Unnamed Types**

39CU1048, 39MD145?, 39PN90, 39PN128, 39PN326

## **Bibliography**

Ahler *et al.* 1977; Kornfeld *et al.* 2010

## **Early Archaic Period**

### **Contexts**

Four contexts are outlined for the Early Archaic period: Hawken Complex, Logan Creek Complex, Meserve-Dalton Complex, and Unassigned Early Archaic.

### **Overview**

Relatively little information is available for this period in South Dakota. More arid climatic conditions prevailed for several thousand years during the Altithermal (also referred to as the Hypsithermal) climate period. In many ways, the Early Archaic period differed little from the Late Paleoindian period. Early Archaic people relied on a mix of large game hunting and more generalized foraging for their sustenance. In the Black Hills and northwestern Great Plains, pit

houses are a common feature of sites dating between 6000 and 4500 BP. These semi-subterranean structures typically contain numerous storage pits; thus, they served a dual function as shelters and storage facilities. The amount of effort represented by these substantial features suggests regularized travel between resource areas that would have allowed repeated use of the pit houses (Smith and Reust 1992; Larson 1997). Similar pit house features should be anticipated in the entire state.

A probable Late Paleoindian/Early Archaic level at the Boulder Creek Rock Shelter in the northern Black Hills contained large amounts of burned bone, including some bison and deer. This component was interpreted as the winter-camp of a small group (Rhodd *et al.* 1995). At 48CK1387 in the northwestern Black Hills a shallow basin hearth yielded a date of 7430 BP. This site also contained a small amount of bone from large and small mammals and few flaked stone tools. These appear to represent a short-term occupation at which some meat procurement and processing took place (Schneider *et al.* 1997). A sparse Early Archaic component at the nearby Red Canyon Rock Shelter was dated to 5190 and 5960 BP. It contained three shallow basin hearths, a scatter of fire-cracked rock, a single charred pennycress seed, and two pieces of burned bone that may belong to a later component (Schneider *et al.* 1997). Site 39LA117 in the northern Black Hills had a sparse scatter of redeposited Early Archaic and Late Paleoindian artifacts, but no intact Early Archaic deposits lay within the project area (Sundstrom *et al.* 1994). A discontinuous component at the Blaine Site in the western Red Valley yielded dates of 5580 and 6940 BP. Large amounts of chipping debris in this level suggested fairly intensive use of the site (Sundstrom *et al.* 1998). This was interpreted as a camp where chipped-stone tool production and repair took place, as well as possible root or wood processing. This site, too, suggests a diverse subsistence base.

Few Early Archaic sites occur in the northern Great Plains relative to other periods; however, whether this is due to partial abandonment of the area, depopulation, or geomorphic processes resulting in the destruction or deep burial of sites is a matter of controversy (cf. Sheehan 1991, 1995, 1996; Artz 1996). Most researchers now lean toward the loss of sites through erosion and deep burial as the most important factor (Yansa 2007). Early Archaic sites are relatively rare in South Dakota, as well.

## **Environmental Setting**

This archaeological period coincides with a climatic period referred to as the Altithermal or Hypsithermal. Originally defined as a prolonged period of severe drought and warm temperatures, this period is now seen as a time of fluctuating moist and dry intervals. In the area now included in South Dakota, peak aridity occurred between 8000 and 5000 BP, with the severest droughts occurring at 6000–5000 BP. At 6000 BP summer and winter average temperatures were similar to modern (pre-industrial) conditions, but precipitation levels were about 65 mm lower than today's (Kutzbach *et al.* 1998). Droughts were more common and more severe than in modern times, with intervening moist intervals of varying duration. Rainfall was infrequent, sometimes very heavy, and highly localized, making conditions highly variable for any given area from year to year. Although archaeologists hypothesized that some areas of the Great Plains served as refuges for human groups driven from other areas by drought, dry conditions occurred everywhere. Within the Early Archaic period, conditions ameliorated from 7700 to 6000 BP, but returned to severe aridity for the following millennium. Present information indicates that the number of

archaeological sites is relatively low for the entire Early Archaic period, but especially for the time of maximum aridity from 6000 to 5000 BP.

This climate change probably made the open plains environment less hospitable to both bison and humans, and conversely made high-altitude environments more habitable due to reduced snow pack and amelioration of winter temperatures (Benedict and Olson 1973, 1978; Benedict 1981, 197; Yansa 2007).

## **Temporal Boundaries**

8000 to 5500 BP (radiocarbon dates from South Dakota range from 7690 to 5190 BP).

## **Spatial Boundaries**

Early Archaic sites and artifacts occur throughout the state, but are most common in the west and along the Missouri River.

## **Property Types**

Kill sites, butchering sites, open campsites, hearths, food-processing areas, chipping stations, quarry sites, pit houses, and isolated finds. Animal kill sites, butchering sites, and small camps are the most common types for the Early Archaic period. Bison kill sites are found in the Black Hills and Sandstone Buttes regions, and at one site in the Big Bend region. Early Archaic components on the Missouri River. At present, Early Archaic house and settlement types are not clear; however, later Early Archaic sites in the Black Hills may contain pit houses.

## **Locational Characteristics**

As noted, sites dating to the Early Archaic period are relatively rare in South Dakota and the northern Great Plains in general. This appears to be because sites were subsequently eroded away or very deeply buried during a period of active landscape change between 8000 and 5000 BP. Known sites are preserved in river and stream terraces, in old arroyo fills, and in meadow settings in the higher Black Hills. Rock shelters were widely used during this period. The Beaver Creek site (39CU779) is a rock shelter that receives flood deposits from an adjacent stream. Although lying just outside South Dakota in the Wyoming Black Hills, the Hawken site demonstrates that Early Archaic deposits may exist at lower elevations, as well. Other Early Archaic deposits are found in rock shelters that were naturally protected from large-scale erosion.

## **Context Definition**

Early Archaic sites contain a variety of projectile point types, most of which are fairly large, triangular types notched at the sides. This basic description fits the Late Archaic Besant projectile point, as well, and this has led to misclassification of sites that lacked radiocarbon dates. The most common Early Archaic projectile point types in South Dakota are Hawken, Bitterroot, Simonsen, and Dalton-Meserve. These points were used to tip atlatl darts. The atlatl and dart remained the main weapon system throughout the Archaic. Hawken points co-occur with some rather amorphous shallowly side-notched points, especially in the Missouri River area. At present,

contexts are based primarily on projectile point types; however, some regional differences in subsistence remains and site types are leading to more precise definitions of the various complexes.



Figure 17. Examples of early Archaic projectile points from South Dakota: left, 39HN1419; right 39PN1979 (ARC photos).

## Condition

The condition of Early Archaic sites varies widely depending on local environment. Some deposits are well preserved; erosion has partially or completely removed others. Although Early Archaic artifacts occur on the surface in many regions of South Dakota, few well-preserved sites have been located. Along the Missouri River such sites are likely to be deeply buried. In many areas, surface inspection alone is not sufficient to evaluate the potential for Early Archaic sites.

## Voids in Research

Other than communal bison hunting, little is known of Early Archaic life-ways in South Dakota. Information is too limited to develop reliable generalizations about Early Archaic subsistence and settlement patterns. The transition from Paleoindian to Early Archaic technology and subsistence patterns is not yet understood.

## Research Topics

1. What artifacts are diagnostic of the Early Plains Archaic period other than large, side-notched projectile points?
2. Issues concerning the Altithermal period. Where were the lake shores of major lakes in eastern South Dakota during the Altithermal? What was the status of rivers draining glacial lakes, such as the James and Red Rivers? Did oasislike stands of trees

- disappear? What effect did this climatic regime have on animal and plant populations, as well as human groups?
3. Where are the Early Archaic sites along the Missouri River?
  4. Just how different were the life-ways of Early Archaic peoples from that of the preceding Paleoindian population? Were the changes in subsistence, settlement pattern and population density radical?
  5. Reinvestigation of the Thomas Creek and Reva sites.
  6. What is the nature of the Early Archaic to Middle Archaic transition, especially with regard to social organization, settlement pattern, and cultural heterogeneity?
  7. What is the nature of the Late Paleoindian to Early Archaic transition, especially with regard to social organization, settlement pattern, and cultural heterogeneity?
  8. Do the various projectile point styles correspond to ethnic groups, tool functions, or time periods, or some other factor?

## **Research and Management Goals**

1. To identify through geomorphological studies and surveys all areas of the state where intact Early Archaic deposits are likely to occur; to test excavate or otherwise evaluate selected (sample) areas to determine whether buried Early Archaic sites are present; to monitor earthmoving activities likely to encounter Early Archaic deposits.
2. To set National Register of Historic Places evaluation criteria for Early Archaic sites. Early Archaic sites are important to understanding how people adapted to harsh and rapid environmental change. Even surface sites may prove significant under Criterion D, because so few sites of this period are available for study. All intact Early Archaic sites and components within sites are considered significant at this time. Site significance increases if a site is undamaged and in relation to the diversity of materials present and how long the site was used. Of particular importance are sites that fill in blanks in current knowledge of Early Archaic culture—for example, sites with house features, sites where activities other than hunting and butchering took place, and complex, multiple-component sites that can show how use of an area changed over time. Sites that can provide information about past environments, including plants, animals, and climate, are also highly significant for studies of human adaptation to changing conditions.
3. To nominate to the National Register all eligible Early Archaic sites.
4. To document fully (map, survey, and test-excavate) all intact Early Archaic sites and components.

5. To preserve for the long term a sample of Early Archaic sites in South Dakota. This sample should include various periods, complexes, and functional types, such as bison drives, camps, and sites related to trade and religion.
6. To mitigate damage to those Early Archaic sites (and potential Early Archaic sites) that cannot be preserved for the long term. Such projects should include detailed analysis of environmental indicators and food remains.

## **National Register Listings**

None. Ludlow Cave (39HN1) contained some Early Archaic projectile points; however, these appear to be relics—that is, artifacts found and carried to a site by later people.

## **Archaeological Regions**

Sandstone Buttes, Belle Fourche, Black Hills, South Fork Cheyenne, White River Badlands, Central Cheyenne, Grand-Moreau Tablelands, Grand-Moreau, Big Bend, Fort Randall, Upper James.

## **Early Archaic Sites, including All Contexts**

39BF2, 39BF206, 39BU57, 39BU186, 39BU244, 39BU363, 39CH225, 39CO114, 39CU115, 39CU241, 39CU781, 39CU932, 39CU1142, 39CU1144, 39CU1165, 39DW360, 39FA591, 39FA1045, 39FA1159, 39GR57, 39HN1 (Ludlow Cave), 39HN2 (Thomas Creek), 39HN3 (Reva Site), 39HN570, 39HN955, 39JK100, 39LA377, 39LA754, 39LA796, 39LA871, 39PE1, 39PE161, 39PN78, 39PN695, 39SH54, 39SH207?, 39SP214, 39WW43, 39WW49, 39ZB69

## **Bibliography**

Kornfeld *et al.* 2010

## **Meserve-Dalton Complex**

### **Overview**

On the Great Plains, Meserve projectile points may represent the late Paleoindian to Early Archaic transition, but the complex is poorly defined at present. The Meserve point is reminiscent of, if not identical to, Dalton points of the Dalton Complex of the Eastern Woodlands. In the Eastern Woodlands, Dalton immediately follows the Paleoindian period, and dates to around 9300 to 8800 BP. An element of the Dalton tool kit is the Agate Basin point, a point type common to the Plains. The Dalton-Meserve Complex in the Great Plains has not been radiocarbon dated; thus, its chronological position is ambiguous. Even in the Eastern Woodlands, the age of Dalton Complex materials varies widely (Hofman and Graham 1998: 115–116; Kay 1998:191). In fact, it is variously placed with Paleoindian and Early Archaic cultural developments.

The presence of Meserve-Dalton Complex sites in South Dakota is debatable. Dalton-like projectile points were included in a private artifact collection from Fall River County, but their

place of origin is not clear (Michael Fosha personal communication 2007). One of the projectile points from the Jim Pitts Site resembles the Dalton type, but does not match it exactly. Because Meserve-Dalton sites occur in Nebraska, Colorado, and Wyoming, the complex may eventually be recognized in South Dakota, as well. Some researchers argue that the James Allen point is a western variant of Dalton (Knudson and Kornfeld 2007). If so, the complex would certainly extend at least into western South Dakota. Clearly, more regional-scale research is needed to sort out the differences, if any, between these two complexes and to gain a more accurate picture of their distribution.

## **Environmental Setting**

See Early Archaic context.

## **Temporal Boundaries**

9000–8000 BP

## **Spatial Boundaries**

Unknown

## **Property Types**

Unknown

## **Locational Characteristics**

Unknown

## **Context Definition**

The lack of sites in South Dakota that can be securely assigned to this context precludes a context definition.

## **Condition**

Unknown

## **Voids in Research**

The extent of Meserve-Dalton in South Dakota is unknown at this time.

## **Research Topics**

1. Do Dalton Complex sites occur in South Dakota?

2. How does Meserve-Dalton in South Dakota and the northern Great Plains differ from the better defined Dalton Complex of the central Great Plains and Eastern Woodlands?
3. What is the relationship between James Allen, Dalton, Meserve, and other similar projectile point types that date to the same period? To what extent do the different types reflect regional variation versus differences in function?
4. What are the ages of Meserve-Dalton sites in various regions? Are the various regional expressions of this complex the same age?
5. Apart from a distinctive projectile point type, what characterizes the Meserve-Dalton Complex in the northern Great Plains? Should this complex be subsumed under a larger complex that would include more projectile point types?

## **Research and Management Goals**

1. Define local expressions of the Meserve-Dalton Complex.
2. Define the distribution of the complex in South Dakota.

## **National Register Listings**

None

## **Archaeological Regions**

Black Hills

## **Meserve-Dalton Sites:**

39PN2801

## **Bibliography**

Goodyear 1982

## **Logan Creek Complex**

### **Overview**

Defined primarily from sites in western Iowa and eastern Nebraska, the Logan Creek complex includes both Paleoindian-like lanceolate projectile points and side-notched points more typical of Early Archaic complexes (Kivett 1962; Kay 1998:174–177). The Logan Creek projectile point is concave-based, with the lower edges ground to facilitate hafting. The Logan Creek Site contained diverse food remains, suggesting that people hunted a variety of animals, rather than focusing on one species. Logan Creek levels at the Cherokee Site in Iowa represent a series of winter camps. These contain bison and deer bone. The Simonsen Site, also in Iowa, is a bison kill site, containing

a ground-stone ax, knives, side-notched projectile points, and anvil stones. Two burial sites are included in the Logan Creek Complex, one with a single individual, placed in a flexed position lying on its right side and covered with red ocher and one with 25 individuals, some similarly laid out and some representing bones gathered up from an earlier placement and bundled together or scattered about. The graves contained shell beads and utilitarian objects.

Logan Creek and Simonsen projectile points are very similar to Early Archaic types defined for other regions of the Great Plains (Kay 1998:176). This makes it difficult to assign sites outside the core area to this complex as opposed to the Hawken complex or the as-yet poorly defined local complexes with shallowly side-notched projectile points. The Rustad Quarry Site in North Dakota is, however, classed as Logan Creek, thus opening the door for Logan Creek sites in the intervening territory of eastern and central South Dakota.

### **Environmental Setting**

See Early Archaic context.

### **Temporal Boundaries**

8600 BP–6000 BP

### **Spatial Boundaries**

Unknown, but probably limited to eastern South Dakota and the Missouri River.

### **Property Types**

Unknown for South Dakota; elsewhere, bison kill sites, campsites, burials.

### **Locational Characteristics**

Unknown

### **Context Definition:**

Assemblages that include diagnostic artifacts of this complex, such as side-notched Simonsen points and unnotched triangular Delong points. Because these points are essentially identical to types such as Hawken and Angostura, it is impossible to assign sites to the complex with any certainty at this time.

### **Condition:**

Unknown

### **Voices in Research**

Lack of systematic investigation.

## **Research Topics**

1. Basic complex definition in South Dakota.

## **Research and Management Goals**

See Early Archaic context.

## **National Register Listings**

None

## **Archaeological Regions**

None

## **Logan Creek Sites**

None recorded in South Dakota at present.

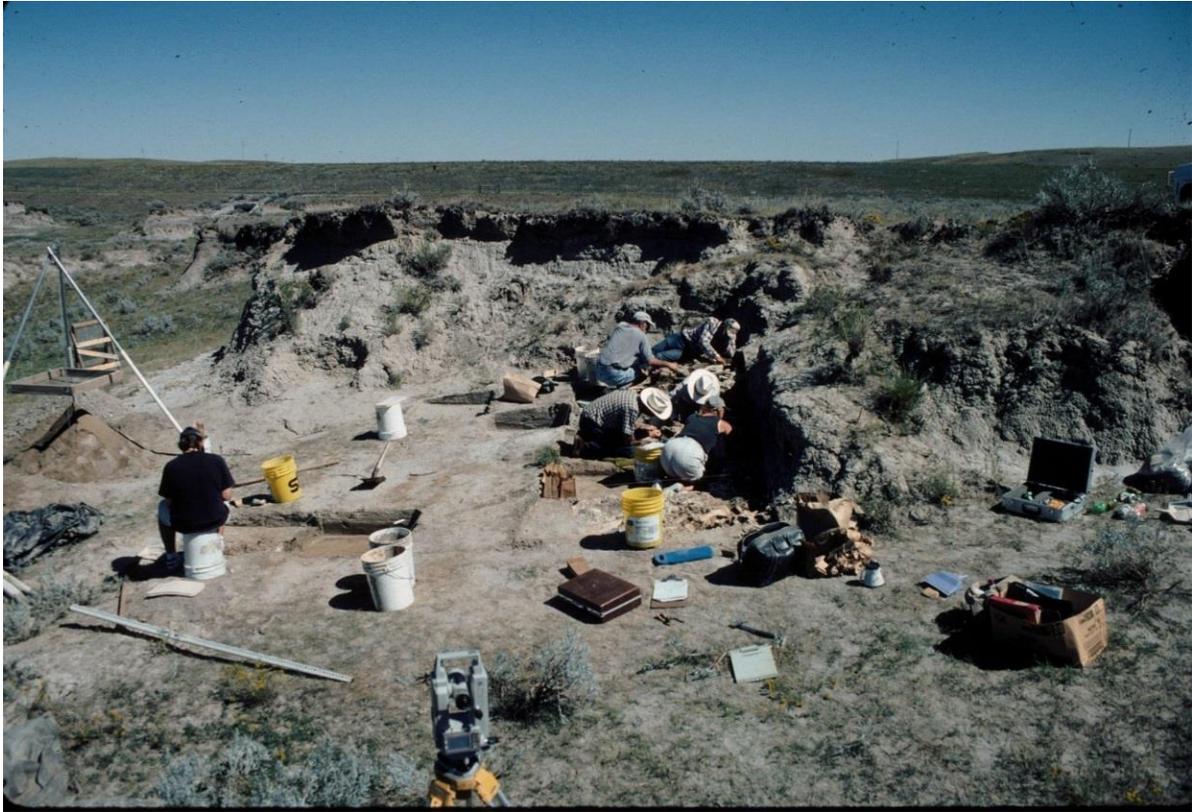
## **Bibliography**

Ahler and Toom 1989.

## **Hawken Complex**

### **Overview**

The Hawken Site in the northwestern Black Hills and the Licking Bison Site (39HN570) in northwestern South Dakota, indicate that Early Archaic people in the Northwestern Plains conducted communal hunts for bison (of the extinct variety *B. bison occidentalis*) around 6000–7000 BP (Frison 1991; Frison *et al.* 1976; Fosha 2001). The Hawken Site was an arroyo trap used for communal bison kills and a nearby butchering area. These portions of the site were dated to 6270 and 6470 BP, respectively. This falls about in the middle of the Altithermal as it is usually defined for the Great Plains. Although only a small area of the Licking Bison Site was excavated, it appears to have been a large communal kill accomplished by driving a herd of bison into a gully or arroyo. The southwest area of the site contained a pile of articulated bison skeletons; the middle portion contained bison skeletons that had been divided into halves or quarters, and the northeast portion had carcasses that were more completely disassembled. The site contained sharp, well-formed side-notched dart points like those found at the Hawken Site in the Wyoming Black Hills (Frison 1991; Frison *et al.* 1976) and the Simonsen Site in Iowa (Agogino and Frankforter 1960). Bone from the site was radiocarbon dated at 6730 BP.



*Figure 18. 2003 excavations at Licking Bison, 39HN570 (ARC photo).*



*Figure 19. Bison bone in excavated portion of 39HN570, 2003 (ARC photo).*



Figure 20. Projectile points from 39HN570 (ARC photo).

Early Archaic levels at the Beaver Creek site, in the southern Limestone Plateau, contained projectile points similar to those from the Hawken and Licking Bison sites; however, it contained diverse food remains, indicating individual small game hunting and plant food gathering. A possible Hawken point also was found during test excavations at the multicomponent Victoria Creek site (39PN1124) in the interior uplift. Like the Beaver Creek site, Victoria Creek indicates a diverse subsistence base, including large and small animals and plants such as hackberry and wild plum (Vallejo 1993). The Buster Hill site in the northern Black Hills contained an Early Archaic level, dated at 7690 BP (Hannus *et al.* 1997). This level contained a single side-notched projectile point similar to those found at the Hawken site. Researchers interpreted the site as a short-term camp of people dwelling in mountain-foothills zones and using a wide variety of food resources (Hannus *et al.* 1997). The few Early Archaic surface collections from the interior Black Hills usually co-occur with Plano assemblages and, like the Plano assemblages, include a variety of hunting and butchering tools, wood and stone tool manufacturing implements, and grinding stones. These interior Black Hills sites indicate limited occupation by hunting parties, probably based in the surrounding plains, as do the few Plano and Early Archaic sites present in the outer zones (Tratebas 1986).

Based largely on the Hawken Site, some researchers have suggested that the Black Hills and other well-watered areas served as refuges for human populations during the more severe climatic conditions of the Altithermal (Frison 1978; Wedel 1978; Bamforth 1988; Buchner 1980; Sheehan 1991, 1995, 1996). According to the refuge model, the Black Hills and other upland areas were marginal environments, used only during times of periodic or seasonal climatic stress. According to this interpretation, Hawken indicates that the large-scale communal bison hunting pattern established on the high plains during the Paleoindian period shifted to the Black Hills and other upland areas as people and bison sought refuge from the drier high plains (Frison *et al.* 1976; Frison 1991).

Current data contradict the Altithermal refuge hypothesis (Bender and Wright 1988; Black 1991; Sundstrom 1992; Sundstrom *et al.* 1994). There are fewer sites dating to the Early Archaic in the Black Hills than any other period. This is the opposite of the pattern predicted by the refuge hypothesis. Limited environmental data suggest that the Black Hills experienced warm, dry conditions during this period (Martin *et al.* 1993; Frison and Stanford 1982); thus, it may have provided a poor refuge. Further, the Black Hills and other proposed refuge areas contain a complete sequence of archaeological components, indicating that people did not abandon them during milder climatic episodes (Tratebas 1986; Sundstrom 1989).

Recent research supports a geological explanation for the relative lack of Early Archaic sites in South Dakota, as well. Virtually every geomorphological study done in South Dakota has concluded that large amounts of Holocene deposits have been removed by erosional processes (Albanese 1990, 1995, 1996; Fredlund 1996; Kuehn 1997; Sundstrom *et al.* 1998; Sundstrom 1999). The few Paleoindian and Early Archaic site locations in the state generally are erosional remnants, either on terraces, in rock shelters, or in old arroyo fills. In some instances, early deposits were incompletely eroded, such that deep pockets of sediment in topographic lows such as channel fills or stream terraces were preserved, while sediments overlying them were removed (cf. Fredlund 1996; Sundstrom *et al.* 1998). Few Early Archaic sediments are found in South Dakota. This suggests that the lack of sites is a result of differential erosion of sediments of Early Archaic age, rather than reflecting a reduction in human use of the area.

## **Environmental Setting**

See Early Archaic context.

## **Temporal Boundaries**

The Hawken Site dated from 6470 to 6270 BP, but Hawken components in South Dakota are dated to 7690 and 6730 BP.

## **Spatial Boundaries**

Unknown, but at least the western and central portions of the state.

## **Property Types**

Small camps, bison kill sites.

## **Locational Characteristics**

Bison kill and butchering sites are found in open plains in western South Dakota. Campsites occur in the foothills and interior of the Black Hills in rock shelters and open settings.

## **Context Definition**

The Hawken Complex, as defined by the presence of Hawken projectile points, includes both large-scale communal bison kill sites and small, temporary campsites with diverse food remains. The former occur in open grasslands, while the latter are more common in mountain and foothills settings.

## **Condition**

Few sites with intact, unmixed Hawken Complex deposits exist in South Dakota. The Licking Bison site is exposed in the sides of a gully and is subject to ongoing erosion.

## **Voids in Research**

Few Hawken sites have been investigated; thus, the range of site functions is not well known. This complex is best known from bison kill sites; however, other aspects of the complex, such as shelter types and settlement patterns remain to be defined.

## **Research Topics**

1. What is the relationship between Hawken and similar Early Archaic cultures from other areas, such as the Logan Creek complex?
2. Does the type and distribution of Hawken complex sites vary by elevation?

## **Research and Management Goals**

See Early Archaic context.

## **National Register Listings**

None

## **Archaeological Regions**

Black Hills, Belle Fourche, Central Cheyenne, South Fork Cheyenne, Upper James, Grand-Moreau,

## **Hawken Complex Sites**

39BU244, 39BU363, 39DW360, 39ED14, 39FA1045, 39FA1159, 39HN570, 39MD915, 39MD922, 39PN1124, 39SP214, 39ZB69

## **Bibliography**

Fosha 2001; Frison 1978, 1991; Kornfeld *et al.* 2010

## **Middle Plains Archaic Period**

### **Contexts**

Two contexts are outlined for the Middle Archaic period: Oxbow and McKean Complex (including Duncan and Hanna).

### **Overview**

Between about 5500 and 5000 BP, the number of sites begins to increase dramatically throughout the northwestern plains (Frison 1991, 1998; Kornfeld *et al.* 2010). This marks the beginning of the Middle Plains Archaic, which persisted until about 2500 BP. Several complexes, based on projectile point styles, have been proposed for the Middle Archaic. The earliest is the Oxbow complex, characterized by broad, deeply corner- and basally-notched or “eared” dart points. This is followed by one or more cultural complexes containing McKean, Duncan, and Hanna projectile points with a variety of triangular to lanceolate basally-notched forms. A variety of hafting elements occur, including shallow and deep side and corner notches, as well as unnotched sides and corners. Stemmed forms also occur. These dart points are generally smaller than Paleoindian projectile points and bigger than Late Prehistoric arrow points. They tend to be relatively wide at the base or stem, as is typical of dart points. The points are rather thick in cross-section and often exhibit sinuous blade edges formed by alternate beveling of the blade edges during finishing and resharpening. Sometimes these are combined into a single McKean complex, and sometimes they are considered separate but overlapping complexes. In South Dakota, Duncan and Hanna points tend to occur together, indicating a single cultural development. The Lander site was a small camp site at the junction of the Cheyenne River and Black Hills. It contained Lander (now classed as Oxbow) projectile points, a mixture of other artifacts, and several types of hearths (Wheeler 1957).

### **Environmental Setting**

The Middle Archaic period coincided with a gradual return to moister and cooler conditions on the northwestern plains. Climate was similar to today’s: that is, enjoying greater rainfall than in the preceding Altithermal climatic episode, with wide fluctuations in daily and seasonal temperatures. This gradual shift toward a wetter climate allowed soils to build up, encasing and preserving archaeological deposits. Subsequent climate change tended to bury and preserve these deposits. Unlike sites of the preceding period, Middle Archaic sites did not undergo widespread erosion and removal. It is not clear the extent to which the spotty distribution of Early Archaic sites reflects site preservation, as opposed to cultural preference and practices, but Middle Archaic sites indicate regular use of virtually all parts of local environments.

### **Temporal Boundaries**

5500-3180 BP, with most sites falling between 5500 and 3500 BP.

## **Spatial Boundaries**

Middle Archaic sites are found throughout the state. The highest concentration of sites is west of the Missouri River.

## **Property Types**

Middle Archaic sites include periodically reused base-camps, small camps and special activity stations, possible game drive sites, pit houses, roasting pit complexes, plant food processing sites, and rock art.

## **Locational Characteristics**

Middle Archaic sites occur throughout South Dakota, but are most common in the western regions. Sites in the west often occur within buried deposits. These deposits tend to be shallow with little or no separation between individual components. Deeper deposits afford good separation of components in some rock shelter, stream terrace, alluvial fan, and springside settings. Along the Missouri River, Middle Archaic components are often deeply buried in river and stream terraces.

## **Context Definition**

Middle Archaic sites contain a variety of projectile point types, including a range of corner- and basally-notched dart points and, rarely, unnotched, parallel-oblique flaked forms. The most common Middle Archaic projectile point types in South Dakota are Oxbow, McKean, Hanna, Duncan, and Mallory. These points were used to tip atlatl darts. Types tend to grade into one another in terms of their morphology. Besides containing distinctive projectile points, Middle Archaic sites typically exhibit periodic reuse and contain numerous features such as stone-lined hearths and roasting pits. Ground-stone tools are relatively abundant in Middle Archaic sites.

## **Condition**

South Dakota contains many buried Middle Archaic components. Many of these are well protected, but sites exposed in the banks of streams and sod tables are subject to ongoing and sometimes rapid erosion.

## **Voids in Research**

In eastern and central South Dakota, few Middle Archaic sites have been excavated. Plains Village sites have been given priority in archaeological research in those regions, resulting in a considerable gap of knowledge about earlier cultural developments. In the Black Hills, Middle Archaic components tend to occur in shallow deposits where materials of various ages are mixed together. This has limited the information potential of many sites. In other areas of western South Dakota, Middle Archaic sites occur as deeply buried, well stratified sites. These have allowed development of detailed information about a lifeway characterized by strategic use of resources enabled by well-planned seasonal movements to various environmental zones. Whether this pattern holds for the state as a whole is not yet clear.

## **Research Topics**

1. What types of shelter were used during the Middle Archaic?
2. Does population density increase during this period, or is the increase in sites a matter of preservation? What environmental and cultural factors supported higher densities, if they existed?
1. Why are there so many point types? What does the heterogeneity of the artifacts mean in terms of cultural heterogeneity? Are the various point types contemporaneous or not in a given area? Were they all actually used as projectiles, or were some used for cutting?
2. Are distinct groups occupying the same region by following different subsistence rounds? This topic needs to be explored.
3. Do different subsistence patterns reflect portions of a seasonal round, regional differences, or fluctuations in subsistence patterns through time?
4. What are the details of Middle Archaic subsistence? How did climate affect subsistence, the seasonal round, group size, and overall population size?
5. How did Middle Archaic people adapt to various niches within the plains environment? How big were the territories of specific groups? How regular were these territories over time?
6. Were some Oxbow or McKean groups living year-round in the Black Hills? Were some groups living there only seasonally? Did more than one of these patterns occur at the same time?
7. Did the McKean Complex develop in place directly from Paleoindian cultural and technological traditions? What is the historic relationship, if any, of the McKean and Oxbow complexes, and how are each related to late Plano and Early Archaic complexes defined for the region?

## **Research and Management Goals**

Well preserved, deeply buried, and complex sites should be given priority for preservation and research. Smaller, single use sites will also provide important information about Middle Archaic history and life-ways. Because Archaic deposits can be very deeply buried, it is imperative that test excavations extend to bedrock or regolith. Every effort should be made to collect and analyze bone, wood, plant remains, and charcoal during testing and excavation projects. Special efforts should be made to identify, study, and preserve Middle Archaic sites in eastern South Dakota.

## **National Register Listings**

39BF206, 39BF224, 39BF225, 39CU779, 39FA395, 39FA1154, 39HN204, 39HU104

## **Middle Archaic Sites**

*Unassigned Middle Archaic Sites:* 39AR1/39AR6 (now Dewey County), 39BF224, 39BF225, 39BF233, 39BU134, 39BU135, 39BU398, 39BU400, 39CL10, 39CO64, 39CO158, 39CU78, 39CU93, 39CU144, 39CU152, 39CU271, 39CU425, 39CU525, 39CU634, 39CU690, 39CU769, 39CU778, 39CU855, 39CU1172, 39CU1182, 39CU1310, 39CU1736, 39CU1745, 39CU1845, 39CU2873, 39CU3308, 39DW165, 39FA38, 39FA54, 39FA205, 39FA267, 39FA351, 39FA437, 39FA458, 39FA783, 39FA851, 39FA854, 39FA1133, 39FA1138, 39FA1406, 39FA1445, 39HK10, 39HK85, 39HN102, 39HN500, 39HN937, 39JE13, 39LA218, 39LA254, 39LA663, 39LA1154, 39LN19, 39MD196, 39MD474, 39MD576, 39MD770, 39MH32/39MH152, 39PN150, 39PN214, 39PN259, 39PN265, 39PN561, 39PN704, 39PN743, 39PN744, 39PN750, 39PN752, 39PN795, 39PN943, 39PN1528, 39PN1654, 39RO125?, 39SB54, 39SL104, 39ST345, 39WW42, 39WW48, 39ZB31, 39ZB48

*Occupation Sites:* 39BF2, 39BF231, 39BU64, 39BU83, 39BU100, 39CA153, 39CL10, 39CO64, 39CU16, 39CU93, 39CU253, 39CU271, 39CU331, 39CU758, 39CU843, 39CU855, 39CU1142, 39CU1172, 39CU1736, 39DW165, 39FA38, 39FA52, 39FA54, 39FA68, 39FA102/39FA288, 39FA302, 39FA307, 39FA399, 39FA437, 39FA458, 39FA522, 39FA527, 39FA537, 39FA718, 39FA790, 39FA842, 39FA851, 39FA854, 39FA1033, 39HK10, 39HN3, 39HN108, 39HN204, 39HU102, 39HN937, 39HU174, 39LA796, 39LN2, 39MD145, 39PN47, 39PN128, 39PN150, 39PN214, 39PN319, 39PN561, 39PN742, 39PN743, 39PN744, 39PN750, 39PN752, 39PN755, 39PN795, 39PN943, 39SH89, 39SL104, 39WW42, 39ZB31, 39ZB59

*Rock Shelter Sites:* 39CU144, 39CU152, 39FA214, 39CU525, 39FA1154

## **Oxbow Complex**

### **Overview**

The Oxbow complex marks the Early to Middle Archaic transition. Relatively few Oxbow sites have been recorded in South Dakota.

### **Environmental Setting**

Oxbow components in South Dakota most often occur within deeply buried multiple component sites on stream terraces and alluvial/colluvial fans in the Black Hills and adjacent regions. Oxbow points have also been found in multiple component sites near high altitude springs in the central Black Hills.

### **Temporal Boundaries**

5500 to 4500 BP

### **Spatial Boundaries**

Western South Dakota, possibly James River Basin

## **Property Types**

Most Oxbow components are within multiple component base camps or seasonal hunting camps. A few are smaller, single component camp sites. One site was an isolated projectile point.

## **Locational Characteristics**

So far, Oxbow Complex sites are recorded only for the Black Hills, Belle Fourche, western Grand-Moreau Tableland, and White River Badlands archaeological regions, with one possible Oxbow point recorded east of the Missouri River in Lake County. This suggests a localized distribution for this complex in South Dakota, comprising the area in and around Belle Fourche River, with a more limited number of sites in the southern Black Hills and White River Badlands.

## **Context Definition**

For now, the Oxbow Complex in South Dakota is only recognized by the presence of the distinctive projectile point. The Oxbow point is a medium to large side-notched and basally-indented form. The side notches are broad and sometimes rounded below the notching, giving almost a corner-notched appearance. The basal indentation is usually very wide and not particularly deep. The points appear "eared" as a result of the broad side notches and basal indentations. The Lander point type defined by Wheeler (1957) is now subsumed into the Oxbow type. Of the twenty Oxbow sites recorded in the state, only the Clayton Draw (39LA796) and Buster Hill (39MD145) sites have been excavated. No excavation report is available for Clayton Draw (Archaeological Research Center records). The Buster Hill site represented at least eight episodes of use, ranging in age from Late Paleoindian to Late Historic. The various components were badly mixed by plowing and rodent activity. None of the four features at this site can be linked to an Oxbow-era use of the site (Hannus *et al.* 1997). The pattern of Oxbow points occurring in the same sites as McKean complex materials holds true for several of the sites in South Dakota, as it does in the Northwestern Plains (Kornfeld *et al.* 2010:113).

## **Condition**

Most known Oxbow components are in large, buried sites near springs or on stream terraces. They are generally well preserved. The potential of these sites to contain well stratified deposits is difficult to gauge, because few have been test excavated.

## **Voids in Research**

Little is known of the Oxbow Complex in South Dakota other than that it is present in and near the Black Hills. Archaeologists at present have very little information about subsistence, settlement patterns, links to other early Middle Archaic complexes (if any), relationships to McKean Complex and Early Archaic complexes, housing types, and migration patterns of the Oxbow complex. With only one possible Oxbow site recorded east of the Missouri River, the distribution of this complex in eastern South Dakota is also an open question. One important site with Oxbow and McKean complex materials, the Gant Site (39MD9), apparently was destroyed by highway construction. Site 39FA54 was inundated by Angostura Reservoir. The remaining sites are intact.

## **Research Topics**

1. Does the Oxbow Complex represent an intrusion of people from the north into western South Dakota? Why does it precede the McKean complex in some areas of the state, but not all?
2. What did Oxbow Complex people eat and in what kind of shelters did they live?
3. Why do Oxbow and McKean Complex projectile points so frequently co-occur in sites?
4. What are the origins of the Oxbow Complex?
5. Did the Oxbow Complex involve mixed hunting and foraging (a true “archaic” pattern) or was it based heavily on large-animal hunting?
6. What innovations arose from the Oxbow Complex in South Dakota?
7. Most Oxbow sites in South Dakota are in or near the Black Hills. Is Oxbow essentially a mountain-foothills pattern culture in South Dakota? How does this compare with patterns elsewhere in the northern Great Plains?

## **Research and Management Goals**

Because Oxbow components are few, it is imperative to preserve all sites that might contain intact archaeological deposits. Research should focus on filling in the many blanks in knowledge of the Early Archaic to Middle Archaic transition. Paleoenvironmental and subsistence data will be important to understanding how Oxbow Complex people adapted to a rapidly changing environment.

## **National Register Listings**

None.

## **Archaeological Regions**

Black Hills, Belle Fourche, Grand-Moreau Tableland, White River Badlands, Vermillion Basin

## **Sites**

39BU64, 39BU83, 39BU111, 39BU203, 39CU773, 39FA54, 39FA201, 39FA399, 39FA1361, 39FA1968, 39LA796, 39LA822, 39LA888, 39LK22, 39MD9, 39MD145, 39MD657, 39PN90, 39PN128, 39PN1504

## **Bibliography**

Kornfeld *et al.* 2010

# McKean Complex, Including Duncan and Hanna Subcomplexes

## Overview

Several hypotheses have been put forth regarding the origins of the McKean complex. These include: migration of groups from the Great Basin (Wedel 1961); expansion of mountain-foothills adapted groups from the Rockies (Benedict and Olson 1973; Husted 1969); diffusion from the Bighorn Mountains (Syms 1969); and development in place from Oxbow or other antecedents (Reeves 1983; Forbis 1985). Whether or not an actual point or points of origin for the McKean complex can be found, indigenous adaptation to local environments was the principal factor shaping Middle Archaic cultural patterns on the northwestern plains. This localized adaptation is clearly seen in the contrasting subsistence patterns of various portions of the northwestern plains.

In the open plains areas, especially in the north, communal bison hunting characterizes the Middle Archaic period (Reeves 1983). This would seem to be the direct descendent of the Paleoindian big-game hunting tradition. This pattern of continuity has called into question the very concept of a Plains “Archaic,” since the term implies a diversified economy including extensive use of plant foods (Forbis 1985). In contrast, the montane basins farther south witnessed a pattern of broad-spectrum, seasonal small-game hunting and foraging (Frison 1978, 1991; Keyser 1986; Keyser and Davis 1984; Greiser 1985). Faunal remains at the Dead Indian Creek and Lightning Spring sites suggest communal hunting of pronghorn, deer, and bison (Frison 1978, 1991; Keyser and Davis 1984). This continues a diverse food-resource pattern rooted in the late Paleoindian period. It can be considered a true “Archaic” development because groups learned to use a wide variety of resources available locally, rather than moving long distances to stay near bison herds. South Dakota includes aspects of both adaptations. West of the Missouri, communal bison hunting, individual hunting of deer and other large game, and broad spectrum foraging apparently were combined, possibly in a seasonal round (cf. Keyser and Davis 1984; Sundstrom 1995–96). Surface finds of McKean lanceolate, Hanna, Duncan, and other McKean Complex projectile points are common throughout the state, but the period is best known for the Black Hills, South Fork Cheyenne, and Sandstone Buttes regions. Middle Archaic sites are larger and more numerous than those of earlier periods, suggesting that sites were occupied longer, by larger groups, or more repeatedly than during earlier periods.

The McKean Complex takes its name from the McKean site, a large, repeatedly occupied habitation site in the western Black Hills foothills zone of eastern Wyoming. Despite its name, Lissolo Cave is also an open-air site located on a stream terrace (Steege and Paulty 1964; Mulloy 1954; Kornfeld *et al.* 1995). McKean is located on the Belle Fourche River in the northwestern Black Hills, while Lissolo Cave is located on Crane Creek, an intermittent drainage in the southwestern foothills. The McKean site was originally thought to contain two levels, each comprising multiple occupations (Mulloy 1954). The upper level, dated to the late Middle Archaic or Middle to Late Archaic transition, was dated at 3278 BP. The lower level was not dated except as early Middle Archaic. The lower level contained 34 hearths, including irregular, shallow depressions; hemispherical, sandstone-lined pits; and sandstone-filled, basin-shaped depressions. These indicate roasting or steaming pits. In addition, two cache pits and a knapping feature were noted. One pit contained a human skull and some bison bones that evidently had been carried around for some time before being placed in the pit. The lower level contained basally notched,

somewhat regularly flaked projectile points (the classic McKean, Duncan, and Hanna types) and a variety of scraping and grinding tools. Little worked bone was found other than an engraved bison rib and three decorated bone beads. No definite structural features were found, although a shallow depression about 10 feet in diameter was investigated as a possible pit house feature. The upper level of McKean contained corner-notched points of two sizes and a variety of scrapers and ground stone tools. The smaller point type is similar to typical Late Archaic corner-notched points. The upper level contained 56 stone-filled basin hearths, interpreted as roasting pits for shellfish or edible plants. Bone included deer, bird, canid (dog or coyote), rodent, frog, and rabbit in both levels, with pronghorn in the lower level and bison and shellfish in the upper level. The only bison bones in the lower level were in the skull-bearing cache pit. Many small bones were crushed beyond recognition.

Re-excavation of a small portion of the McKean site in 1983 clarified the stratigraphy (Kornfeld *et al.* 1995; Frison 1991). While the site has two main levels, artifact distribution was continuous throughout the deposits, with no break between the two vertical concentrations. The deposits apparently represent a large number of short-term occupations occurring in close succession over a span of some 5000 years (Kornfeld and Todd 1985; Kornfeld *et al.* 1995; Frison 1991). A series of radiocarbon dates included a date of 4590 BP for the McKean complex. These excavations also revealed a possible pit house in the McKean component similar to Early and Middle Archaic pit houses from the Wyoming basins and Rocky Mountains (Larson 1997).

The Lissolo Cave site in the southwestern Black Hills foothills contained three cultural levels within a creek terrace fill adjacent to a small rock shelter (Steege and Paulley 1964). The lowest level contained lanceolate (leaf-shaped) points similar to those found in the lower level of the McKean site. Shallow, unlined basin hearths and a continuous scatter of small fragments of animal bone were the only features at this level. The artifact assemblage is strikingly similar to that of the lower level of the McKean site, containing blade tools, snub-nosed end-scrapers, a graver, a drill fragment, a flake knife, and a fragment of decorated bone. A cached mano and metate found at the back of the rock shelter may be associated with this level. All recovered long bones were broken into small pieces, presumably to extract the marrow. Identifiable bone included bison, elk, and mule deer. The middle level contained a few surface hearths, points similar to the Duncan, Hanna, and Oxbow types found in the upper level of the McKean site, and a slab metate. The upper level contained surface hearths, side- and corner-notched points, an end scraper, and several flake knives and retouched flakes. The projectile points are smaller, less regularly flaked, and narrower than those found in the lower levels. Identifiable bone at this level was limited to bison. The Lissolo Cave sequence and assemblages match those of the McKean site, except that the latter was much more extensive. At the McKean site, the smaller corner-notched points were intermixed with classic McKean types in the upper level, rather than occurring in separate components as at Lissolo.

Two other large, open-air sites in foothills zones also show signs of repeated seasonal use. The Gant site, at the northeastern edge of the Black Hills, contained a dense layer of fire-cracked rock with occasional hearths (Gant and Hurt 1965). McKean lanceolate, Duncan, Hanna, and Oxbow projectile points occurred along with other chipped stone tools. The site was interpreted as a seasonal station for plant-food processing and preparation of hunting gear (dart points). Dates of 4130, 3620, and 3650 BP suggest the site was used over a period of half a millennium. Site 39CU271 in the southwestern foothills zone is another probable plant-food processing site

(Charles Reher personal communication 1993). This open-air site contained both Late and Middle Archaic materials, with the bulk of the site deposits apparently dating to the Late Archaic. Investigations at the site were limited to surface collections, feature mapping, and limited testing. The site was badly disturbed by mineral exploration activities before its investigation and no complete report of the investigations was ever prepared. The site contained 184 features in the form of fire-cracked rock concentrations and rock-filled basin hearths. One feature was dated at 3150 BP; another five dates fall within the Late Archaic period. Plant-food processing appears to have been the main activity.

A small open-air camp containing seven hearths, crushed bone, and a mixture of chipped stone tools is located in the northwestern foothills of the Black Hills (Kornfeld *et al.* 1995). Site 48CK13 contained both Middle and Late Archaic projectile points, suggesting sporadic but long-term reuse of the site. Butchering and/or pemmican production and chipped stone tool-making apparently were the focus of this occupation. The nearby site 48CK46 is another multiple activity open-air camp with Middle and Late Archaic artifacts. This site contained about 30 hearths, mostly stone-filled basins with stone-lined shallow basins, stone platforms, and roasting pits occurring as well. The site contained large amounts of chipping debris and a mixed tool assemblage including projectile points, knives, a drill, an engraver, scraping tools, a hammerstone, a celt, and manos and metates. Bison, deer, and pronghorn bone were also found. This site appears to represent a base camp.

Other sites in the outer Black Hills are also open-air campsites. Sites 39FA422, 39FA530 and 39CU690 are single-use camps near springs. Site 39FA422 is another single-use spring-side camp at which hide working, butchering, woodworking, chipped stone tool production, and food preparation took place (Haug *et al.* 1980). It contained a single hearth. Site 39FA530 contained a Hanna point, a keeled endscraper, and a few flakes (Cassells 1989). This site was mostly destroyed by road construction; however, it appears to have been a small camp site. Site 39CU690 contained a small amount of fire-cracked rock, a McKean lanceolate dart point fragment, a scraper, flakes, and a sandstone mano (Noisat 1992). These may have been base camps used during spring or early summer.

Site 39FA437 is a multiple activity camp in the southern Black Hills containing a McKean projectile point, end scrapers, cores, and chipping debris. The site may contain more than one component; however, the shallow deposits did not allow recognition of separate occupation levels (Haug *et al.* 1980). The nearby site 39FA416 contained a McKean lanceolate point and three rock-filled hearths, along with Plano, Late Archaic, and Late Prehistoric points. These components were mixed, and the cultural affiliation of the hearths is uncertain (Haug *et al.* 1980). Another open air, short-term camp at 39CU843 also contained a mixed deposit, as indicated by the presence of McKean, Duncan/Hanna, Pelican Lake, and Late Prehistoric projectile points (Jones 2006). The Kolterman and Harney sites were small camps briefly investigated in the 1940s (Wheeler 1957). These contained a variety of projectile point types associated with the McKean complex, a mixture of other artifacts, and several types of hearths. Two special activity sites dating to the Middle Archaic have been identified. Site 39FA484 is a tool-stone procurement and camp site (Cassells 1989). The Dead Sage site (39FA396) is an open-air camp at which shaft and dart point production took place, probably in the context of gearing up for seasonal hunting forays (Tratebas 1986). The site contained a few hearths, grinding stones, and small blades in addition to a tool assemblage

designed for dart production. Some Late Prehistoric and possible Late Archaic materials also occurred at this site.

The George Hey site, 39FA302, is a Middle Archaic site in a sheltered location in the southern Black Hills (Tratebas and Vagstad 1979). It contained several scatters of burned rock from hearth cleaning, basin and rock-filled pit hearths, and numerous grinding stone fragments that had been used as hearth rocks. McKean lanceolate, Duncan, and Hanna points and other tools suitable for hunting and hide working made up the tool assemblage. The hearths contained crushed bone, some identifiable as deer. The site was used periodically as a winter camp. Another ridge top site, 39FA458, may also have been a winter occupation; however, no test excavation was conducted at the site (Haug *et al.* 1980). Two hearths and a concentration of fire-cracked rock were exposed in a bulldozer cut; a McKean lanceolate point and mano fragments were also found. The site was hypothesized to be a habitation, based on limited shovel testing.



*Figure 21. Hearth exposed in excavation, 39FA302, 1978 (ARC photo).*



*Figure 22. Possible pit-house feature exposed in bulldozer trench at 39FA302, 1978 (ARC photo).*

The Red Valley zone of the Black Hills also contains a variety of Middle Archaic site types. The Hawken II site, dated at 4250 BP, was used for communal bison procurement using natural arroyo traps (Frison 1991). The Harbison site in the eastern Red Valley appears to have been a single-use base camp at which hunting-tool production and plant-food processing were the main activities (Sundstrom 1981b). The site contained conical pit hearths from which heating stones had been removed, a fire-cracked rock scatter, cached boulders of tool-stone, microblade cores, and debris from chipped stone tool production. Two other Red Valley sites are open-air camps in canyon bottoms. Site 39CU427 contained a mixed artifact assemblage typical of a tool-stone procurement station and campsite at which tool manufacturing took place (Noisat 1990). Nearby chert outcrops were used as a source for tool-stone. The site contained both Middle and Late Archaic artifacts. Site 39CU1182 is a multiple component site with Paleoindian, Middle Archaic, Late Archaic, and Late Prehistoric diagnostics (Wolf and Miller 1992). Unfortunately, these are all at or near the surface, making recognition of separate components impossible. A mixed tool assemblage was present, including projectile points, retouched flakes, scrapers, choppers, and a spokeshave. Hunting-related activities might reasonably be inferred from this tool assemblage. Wells Spring (39CU634) contained an expanding stemmed or eared dart point that appears to be a Middle Archaic variant. The site also contained biface thinning flakes, a blade, microflakes, biface fragments, and unifacial flake tools. Biface and blade tool production would appear to be the focus of this site. The unifactes suggest an additional function such as shaft preparation or plant-food processing.

The interior Black Hills area also contains a variety of Middle Archaic site types. These include spring, summer, and fall occupations; large base camps and small special-activity stations; and both open-air and rock shelter sites. The Beaver Creek site, 39CU779, is a streamside rock shelter that contained 17 occupation levels, dating to the Early and Middle Archaic (Alex 1991; Martin *et al.* 1993). These indicate a warm-season occupation. Maintenance and production of stone tools, hunting, and game processing appear to have been the principal activities associated with the site. The Middle Archaic was the period of most intensive use of the shelter. The Middle Archaic levels had numerous roasting pits and hearths. A Hanna point occurred stratigraphically higher than McKean lanceolate points at this site, suggesting a possible temporal sequence of projectile point styles. A diverse faunal assemblage suggests use of deer, bison, pronghorn, canids (including domesticated dog), rabbits, and toads for food, although the bones were not analyzed specifically for butchering marks. Bison does not occur in the lower levels. A roasting pit contained several immature deer. Unfortunately, a complete analysis of the material excavated from the Beaver Creek site has not been undertaken and the faunal samples are difficult to correlate with archaeological occupation levels due to the excavation methods used. A high altitude rock shelter (39CU144) contained a single McKean lanceolate point and a few flakes. A single, short-term use is indicated (Noisat 1990).



Figure 23. View of Beaver Creek rock shelter, 39CU779, 1987 (ARC photo).

Open-air, multiple component base camps are the most common Middle Archaic site type in the interior Black Hills. These typically contain Late Paleoindian, Middle Archaic, Late Archaic, and Late Prehistoric components, suggesting periodic reuse over thousands of years. These appear to represent warm-season habitation sites, from which hunting, meat processing, hide working, and hunting tool production activities were based. One of the largest of these is the Deerfield site (Buechler 1984). It contained materials dating from the Late Paleoindian to the Protohistoric periods, with the exception of the Early Archaic period. The period of heaviest use of the site was during the Middle and Late Archaic. The site was badly damaged by construction activity before archaeological investigations were initiated. Together with a lack of vertical depth to the site, this made it impossible to clearly identify the various components. The site contained about 200 hearths, charcoal stains, and fire-cracked rock concentrations. Hearths were rock-lined and rock-filled pits; 82 of these contained charred bone fragments. In addition, three charred chokecherry pits were recovered. Most of the bone was crushed. Identifiable fragments were predominantly from bison, with some pronghorn or deer and fish. The artifact assemblage included tools suitable for hunting, butchering, food processing, hide working, woodworking, and chipped stone tool manufacture. The Deerfield site appears to have been periodically reused during late summer or early fall for butchering and pemmican production.

The Battle Creek site (39PN795) is a large, multicomponent site on a stream terrace (Noisat and Campbell 1986). Limited investigations of the site revealed seven hearths exposed in a road and eroded areas at the base of a slope. A dense concentration of artifacts included a chopper, projectile points, bifaces, and scrapers, suggesting that a variety of activities took place at the site, including butchering and hide working. Plano, Middle Archaic, and Late Archaic diagnostics were found. Three features were dated at 2150, 2680, and 3630 BP, indicating Middle Archaic and early Late Archaic use of the hearths. Like the Deerfield site, a periodically reoccupied, warm-season base camp focused on hunting and meat processing is indicated. A similar function was proposed for 39LA117, a high-altitude base camp with mixed Middle and Late Archaic components (Sundstrom *et al.* 1994) and for 39MD145, a high-altitude seasonal hunting camp with Late Paleoindian through Late Prehistoric materials (Hannus *et al.* 1997). Plano and Early Archaic materials occur on or in a higher terrace adjacent to the excavated area of 39LA117. These sites appear to have been periodically reused during summer or early fall as a hunting base camp. Tools from the mixed Middle and Late Archaic assemblage suggest secondary butchering, hide working, bone marrow extraction, and hunting tool production. No ground stone tools were found. The mixed Plano and Early Archaic assemblage at 39LA117 suggests a more limited focus on hunting and primary butchering.

The Jim Pitts site, a complex, stratified base camp in the Black Hills, had a Middle Archaic level that contained a McKean projectile point, chipped-stone tools and debris, animal (primarily bison) bone, and abundant fire-cracked rock. An apparent hearth feature dating to this period was found in one test unit (Donohue and Hanenberger 1993). The site lies at the margin of the Red Valley and the interior Black Hills. The site contains Paleoindian, Middle Archaic, and Late Archaic components (Archaeological Research Center records).



Figure 24. Excavations at the Jim Pitts site, 39CU1142, 1992 (ARC photo).

The Oatman Spring (39PN150) and Buck Spring (39CU628) sites may also fit the pattern of multiple component, periodically reused hunting base camps in the interior Black Hills. Oatman Spring was test excavated, but Buck Spring is known only from surface investigations. The Oatman Spring site contains Middle Archaic, Late Archaic, and Late Prehistoric components (Miller 1990). Artifacts and bone from the site suggest that it was used principally during the Archaic period as a habitation site from which hunting operations were based. The Buck Spring site contained a possible Late Archaic or Late Prehistoric projectile point fragment and two basally notched points probably assignable to the McKean complex. This is a large habitation site with a dense scatter of chipped-stone tools and debris and a single ground-stone artifact (Noisat 1992). Two contiguous sites, 39CU330 and 39CU331, also fit the interior Black Hills warm-season hunting base camp pattern (Noisat 1992). These sites may have been used only during the Middle Archaic period; however, they are untested and may ultimately produce materials assignable to other periods. Both sites lie on a stream terrace and were recognized as large, dense scatters of artifacts. Site 39CU331 contained flake tools, spokeshaves, drills, punches, hammerstones, grinding stones, cores, and chipping debris. Blades and discoidal blade cores were also found. No features were noted; however, 11 rocks were interpreted as boiling stones. A periodically reused base camp is indicated by these remains. Associated activities include chipped stone tool and shaft production, butchering, marrow extraction, and hide working. A grid of shovel probes revealed the presence of distinct activity areas related to piercing, bifacial tool production, unifacial tool production, unifacial tool use, and shaft notching. This suggests a camp at which hunting tool production and other hunt related activities, such as hide working, took place. The adjacent site

39CU330 is a camp site where chipped stone tools were made. Two large artifact scatters in the interior Black Hills also appear to represent reoccupied warm-season base camps with Middle Archaic components. Site 39CU989 is a large artifact scatter extending across a draw and surrounding ridge tops (Dandridge and Rossman 1991). Scrapers, preforms, a McKean lanceolate point, and chipped-stone debris were found on the surface of the site. The Forest Jewel site, 39CU1172, also extends across a draw and surrounding ridge tops. A McKean point and a varied assemblage of chipped-stone tools and debris were found on the surface of this site (Williams and Donohue 1992). A few test excavation units yielded a possible Hell Gap or James Allen projectile point, a Duncan/Hanna point, a few other chipped stone tools, and chipping debris. These indicate a camp site that was used over a period of several thousand years (Jones 2006). The Ditch Creek site also appears to be a warm-season hunting base camp in the interior Black Hills (Tratebas and Vagstad 1979; Tratebas 1986). The tool assemblage included projectile points, scrapers, flake tools, and small knives. The site contained a series of thin charcoal lenses associated with peaks in artifact density, apparently representing a series of reoccupations. Based on projectile point distribution, most of these occupations can be dated to the McKean complex of the Middle Archaic. At least one Late Archaic component and a scant Late Prehistoric component also occurred at the site. Two points with rounded stems occurred below an Oxbow level at the Ditch Creek site, but these have not been securely typed or dated. The tool assemblage indicates a camp site where hunting weapons were repaired.

A group of small Middle Archaic sites in the interior Black Hills represents single-use camps used as tool-stone procurement and chipping stations. These include 39CU78 (Noisat 1990), 39CU93 (Williams 1993a), and 39PN218 (Noisat 1988). The sites generally include cores, chipping debris, and either single hearths or no features. Site 39CU1145 is similar, but exhibits multiple episodes of use, dating to the Middle Archaic, Late Archaic, and Late Prehistoric (Williams 1993b). These sites occur in a variety of settings near chert outcrops. An analysis of surface collections from the Black Hills indicated that the higher elevations were used during summer and fall for both multiple-activity habitations and hunt-related activities including butchering, bifacial tool production, and shaft repair (Tratebas 1986). The Hogback ridges and canyons, in contrast, were used primarily during the cold seasons for tool manufacturing and hide working and for sheltered camps. The high incidence of nonlocal tool-stone was interpreted as indicating a seasonal round covering a large area extending outward from all sides of the Black Hills (Tratebas 1986).

The conclusions of the survey data study (Tratebas 1986) are borne out by the data from excavations and tests described above. Most of the known Middle Archaic sites are in the interior uplift. Most of these are extensive, multicomponent sites near springs or streams. These large open-air camps contain artifact assemblages and features indicating general habitation activities, such as cooking, and activities related to hunting, such as bifacial tool production and repair, secondary butchering, and marrow extraction. The latter activity suggests pemmican production. Ground stone tools are relatively rare at these sites, suggesting little reliance on plant foods, such as seeds, that require grinding. Many of the basin and pit hearths found in this area contain bone fragments, again suggesting an emphasis on game, as opposed to plant foods. Small and single-use sites in the interior are short-term camps used in conjunction with tool-stone procurement and reduction. They are located near chert outcrops.

Several rock shelter sites in the Black Hills contain Middle Archaic material. The Belle and Mule Creek rock shelters are in the northwestern foothills zone. Component B of Belle rock shelter contained Hanna points, knives, scrapers, utilized flakes, and a chopper. Two hearths were present in this level, along with remains of bison, deer, pronghorn, and shellfish. Component C contained McKean lanceolate points, knives, end scrapers, a palette, and a piece of hematite. This level contained three hearths and crushed bone fragments. Component C also contained many extremely thin flakes (Kornfeld et al 1995). Component D of Mule Creek Rock Shelter contained McKean lanceolate, Duncan, and Hanna points, knives, drills, flake scrapers, an end scraper, manos, a grinding slab, and a pestle. The seven hearths included stone-filled basins and stone platforms. Bison, deer or pronghorn, canid, beaver, and grouse were found, along with shellfish shells. Both Mule Creek and Belle rock shelters appear to have served as periodically reoccupied, seasonal habitation sites. Seasonality indicators are limited; however, the presence of shellfish suggests a warm-season occupation. The faunal remains at these two sites suggest a diverse subsistence. Limited testing of a rock shelter in the Black Hills, 39CU1310, indicated its use as a short term hunters' camp or butchering station during the Middle and Late Archaic period, as indicated by two radiocarbon dates (Jones 2006). The site contained pronghorn and bison bone, along with a few chipped stone knives.

A similarly diverse faunal assemblage was noted at three small Middle Archaic campsites in the southern Black Hills (Wheeler 1957). The Kolterman Site contained deer, cottontail, bison, and gopher bone. The Harney Site contained bison and prairie dog bone. The Landers Site contained bison, deer, and pronghorn. These sites had mixed tool kits and variants of McKean, Duncan, Hanna, and Oxbow points.

The various Middle Archaic sites seem clustered around tool technology, burial practices, habitation structures, and subsistence patterns. This has received little systematic treatment in site analyses (but see Keyser and Davis 1984). As such clusters are recognized and defined, it is expected that models comprising both ethnic and temporal variability will be developed to account for their presence. Thus, the pattern of increased cultural diversity that started in the Plano period with the divergence of open plains and mountains-foothills adaptations eventually may lead, by Middle Archaic times, to a flowering of many distinct but economically similar ethnic or macroband groups. This Middle Archaic pattern of various ethnically distinct macrobands coexisting in a single environmental region was to persist throughout the remainder of native history on the northwestern plains (Sundstrom 1989).

Although research thus far has focused on the Black Hills and South Fork Cheyenne regions, Middle Archaic sites occur throughout much of South Dakota. The Belle Fourche region contains many Middle Archaic sites, but only three have been test-excavated. The Gant site, 39MD9, contained a dense layer of fire-cracked rock with occasional hearths (Gant and Hurt 1965). McKean lanceolate, Duncan, Hanna, and Oxbow projectile points were found along with a variety of chipped stone knives, scrapers, drills, and spokeshaves. The site also contained groundstone tools such as mano, metates, and hammerstones. The site was interpreted as a seasonal station for plant-food processing and preparation of atlatl darts for hunting. Radiocarbon dates of 4130, 3620, and 3650 BP were obtained, suggesting use of the site over a period of half a millennium; however, little horizontal separation of components was noted. It is not clear whether the site contained more than one component.

The Matz Site, 39MD116, was test-excavated by the South Dakota Archaeological Society in 1987. The site extended approximately 1.5 meters deep. A band of dark sediment (a buried soil or charcoal deposit) occurred at 46 cm below surface. A radiocarbon sample from 122–132 cm below surface yielded a date of 5250 BP. Artifacts included fire-cracked rock, flakes, scrapers, bifaces, but no artifacts diagnostic of particular cultural affiliations or periods.

Site 39BU244 was a very shallow site with artifacts from the Hawken, McKean, Pelican Lake, and Besant complexes, as well as a possible late Paleoindian projectile point. The site lacked adequate deposition to permit researchers to separate materials from the various periods (Toom and Kordecki 2002).

Middle Archaic projectile points were found on the surface of many sites in the Belle Fourche region: 39BU57, 39BU64, 39BU83, 39BU100, 39BU107, 39BU109, 39BU111, 39BU134, 39BU203, 39BU220, 39BU223, 39BU224, 39BU356, 39BU357, 39BU386, and 39MD317. These include McKean, Duncan, Hanna, and Oxbow types, as well as a broadly corner-notched type. Most were found within chipped stone artifact scatters, but some were isolated finds. Three of the sites contained hearths, suggesting they were used as camps (39BU64, 39BU83, 39BU100). None of these sites have been excavated, so knowledge of Middle Archaic use of the region is very limited.

Few Middle Archaic sites have been recorded in the White River Badlands, probably because rapid rates of erosion there have removed many deposits of that age. Site 39SH74 is an eroded hearth with flaking debris and part of an Oxbow projectile point (Hannus *et al.* 1989:160). Another Oxbow point was found at 39PN1747, a small scatter of prehistoric and historic artifacts on a hill slope. Several sites have produced projectile points assigned to either Duncan or Hanna complexes. Most of these were deflated surface sites, meaning that the artifacts were left behind when the surrounding sediments eroded away. Four other sites are assigned to the Middle Archaic period, including one investigated in 1948 (Wheeler 1949:2–3). Test excavations at 39TD37 yielded radiocarbon dates near the end of the Middle Archaic period: 2940±60 BP, 2670±70 BP, and 2690±200 BP (Haberman 1985). In the White River Badlands a multiple-component site, 39PN561, had a buried hearth containing a McKean projectile point exposed in a cut bank (Sundstrom and Malone 1982). Another multiple component site in the White River Badlands, 39JK62, also contained a Middle Archaic projectile point, as did a series of hearths (39SH89) exposed in a creek bank (Lueck and Butterbrodt 1984).

Middle Archaic sites are moderately abundant in areas to the north and west of the Black Hills. The Central Cheyenne region has four Middle Archaic sites. Site 39HK10 had a feature radiocarbon dated to the Middle Archaic period, as well as Late Archaic, and Late Prehistoric components. The various components were mixed, however, and provide little information other than that the site functioned as a short-term campsite for several thousand years. Archaeologists excavated the site in advance of a highway construction project. They uncovered 31 features, mostly shallow, lightly fired hearths, rock-filled hearths, and scatters of fire-cracked rock. The site contained debris from chipped-stone tool-making, as well as a wide variety of chipped-stone tools and a small amount of pottery. Most of the stone tools were of local materials, but some may have been imported from the Black Hills. A small amount of bone came from deer or pronghorn. Arrow points and Coalescent Tradition pottery indicated a Late Prehistoric age for the site; however, radiocarbon samples from hearths yielded ages of 3640, 1830, 2240, 460, and 260 BP. Because

materials of different ages were not separated into distinct layers, researchers could not detect differences in how the site was used over time (Haberman and Lippincott 1997).

Another multiple-component site, 39HK85, has not been excavated, but it contained Middle Archaic and Late Archaic artifacts on the surface. Site 39HK40 was a single artifact: a Duncan-Hanna projectile point. Such a small sample does not permit any conclusions regarding Middle Archaic use of the region.

The Sandstone Buttes region has several significant Middle Archaic sites. The Lightning Spring site had several Middle Archaic components (Keyser and Davis 1984). Other buried Middle Archaic occupations occurred at 39HN483 and 39HN163, (Metcalf and Black 1985:132; Fosha 1994b). The adjacent Grand-Moreau Tableland region contains four Middle Archaic components. A McKean projectile point was found on the surface of 39CO158, an artifact scatter with a buried component. At 39PE212, a scatter of artifacts on the surface included a McKean point, a drill, a core, and about 20 flakes. Neither of these was test excavated. Site 39MD405 had a Hanna projectile point on the surface with some chipping debris and a Late Archaic projectile point. Two test excavation units failed to yield significant buried deposits. At the Brams Site, 39ZB31, the upper cultural level contained a mix of Middle Archaic through Historic materials, including a single Duncan-Hanna projectile point. The level primarily comprised Late Archaic material from a series of seasonal camps (Hananberger n.d.).

An artifact scatter with a Duncan-Hanna projectile point is the only clear indication of Middle Archaic use of the Bad River Basin thus far recorded. A Middle or Late Archaic projectile point was found at another site in the region. No other information is available for this period. No Middle Archaic sites are known in the remaining West River regions, Sand Hills and Lower White River.

On the Missouri River, Archaic sites were initially classified simply as “pre-village” (Lehmer 1971). During the Smithsonian Institution-River Basin Surveys projects, archaeologists working in the Big Bend region encountered a few Middle Archaic cultural layers, as evidenced by McKean and Duncan dart points and radiocarbon dates ranging from 4400 to 2475 BP (Lehmer 1971:61).

In the archaeological regions bordering the Missouri River, Middle Archaic components occur on river terraces and ridge tops. At 39CA153, a test excavation indicated two cultural levels: a Plains Village level from 0–10 cm below surface and an undated level 10–50 cm below surface. A McKean dart point found on the surface suggests that at least some of the lower component is Middle Archaic in age (Muniz 2005c). Two sites in Walworth County, 39WW42 and 39WW119, were test excavated and found to contain Middle Archaic components. At 39WW42, a Middle Archaic point was found on the site surface. A buried feature was dated to 3230 BP. At 39WW119, test excavation units and surface collections yielded possible Late Paleoindian, McKean complex, Late Archaic (Pelican Lake), Plains Village (Post-Contact Coalescent and Extended Coalescent), and historic artifacts. This high-potential site has not been further investigated. Two other sites in the Grand-Moreau region had McKean points on the surface: 39CO103 and 39DW119.

Archaeological work in the Bad-Cheyenne region revealed another multiple component terrace site, 39HU174. This site was test excavated by University of North Dakota in 1978 and by Augustana College in 1988. The site contains three cultural layers, as well as McKean, Late Archaic, and Plains Village artifacts. Another buried site in the region (39SL104) is known only

from materials collected by the landowner, including a McKean complex dart point, a graver, a grinding stone, a hammerstone, and some chipping debris (Sigstad and Biggs 1973–74). An isolated Duncan projectile point (39ST321) found in an upland plain is the only other Middle Archaic site in the Bad-Cheyenne region.

In the Big Bend region, several Middle Archaic projectile points were found in presumably more recent mound sites (39BF224, 39BF225, 39BF233, and 39BF231). Site 39HU102 was test excavated and found to have Archaic, Woodland, Plains Village, and historic material (Toom and Steinacher 1980). The only other recorded Middle Archaic site in this region, 39JE13, was a sparse scatter of chipped stone flakes and tools, indicating a small, temporary camp site.

The remaining Missouri River regions, Fort Randall and Yankton, contain two Middle Archaic sites. Two hearths, bison and canid bone, and a Middle Archaic projectile point were observed in a cutbank at 39CL10. Four test excavation units at 39CH225 indicated intact buried Early and Middle Archaic deposits, as well as Woodland material.

Very few Middle Archaic sites have been found east of the Missouri River region and no sites of the period have been test excavated. Site 39SB54 was a surface artifact scatter that included Middle Archaic projectile points. The site has not been studied further. A stone circle site, 39ED13, had McKean and Late Archaic/Woodlands projectile points on the surface. Another scatter at 39LK22 included an Oxbow projectile point. Two sites in Spink County may have more substantial Middle Archaic deposits. At 39SP202, Hanna and Yonkee dart points were found among chipped stone debris, bison bone, and a grooved maul that had eroded out of a cut bank. At 39SP251, chipped stone debris, animal bone, fire-cracked rock, and a Duncan projectile point were scattered across a hilltop.



Figure 25. Middle Archaic artifacts from South Dakota: left, projectile points; right atlatl weight from 39BK103 (ARC photos).

Middle Archaic assemblages in South Dakota include a wide variety of tool types. Keeled end scrapers are a distinctive component of many Middle Archaic assemblages from the area and may ultimately prove diagnostic of one or more Middle Archaic complexes (Sundstrom 1981b). Large,

basally notched bifacial knives have been identified as Middle Plains Archaic diagnostics (Tratebas 1986; Frison 1991:132). Other tools typically occurring in Middle Archaic sites include chipped stone knives and knife fragments, spokeshaves, and retouched flakes. Ground stone artifacts are a hallmark of Middle and Late Archaic sites in South Dakota. Shaped and unshaped grinding slabs and blocky or round one-handed manos are found in varying frequencies in Middle Archaic assemblages. Ground stone artifacts occur in Paleoindian levels at the Ray Long site, as well, and are common in Late Archaic and Late Prehistoric assemblages, so they cannot be considered a Middle Archaic diagnostic. Nevertheless, the relative abundance of these in Middle Archaic sites suggests a shift in subsistence, either in food processing and storage technologies or in the kinds of food exploited. The latter explanation has been suggested most often. This assumes that ground stone tools were used for plant food processing. The alternative explanation, that the ground stone tools reflect the development of new food storage techniques, such as pemmican production, should also be considered. Unfortunately, little direct evidence, in the form of either seeds or bone, is available to support either explanation. Analysis of residues taken directly from the surface of grinding slabs and manos may eventually provide such evidence.

A more distinctive class of Middle Archaic artifacts comprises objects made of fiber, shell, and bone. In the Black Hills, one piece of decorated bone, a split rib fragment with striations and polish, was found in the Middle Archaic level of Lissolo Cave (Steege and Paulley 1964). The McKean site had a decorated bison rib fragment, three bone beads, *Olivella* shell beads, several unfinished bone beads, and two bone awls (Kornfeld *et al.* 1995). An antler tool was recovered from the Middle Archaic level at the Beaver Creek site (Alex 1991). This small sample of bone and fiber artifacts, suggests widespread production and use of such tools by Middle Archaic people. These types of artifacts help support the idea of a Great Basin origin for some Middle Archaic complexes, because such industries have a long history there. The use of basketry and fiber cordage has traditionally been linked to horticultural or foraging subsistence economies; however, such items can be used within a hunting-based economy, as well (e.g. Frison *et al.* 1986).

No single pattern emerges from data on tool-stone use in Middle Archaic components in South Dakota. A trend toward extensive use of exotic raw materials during the Middle Plains Archaic, as compared with later periods is evident in Black Hills assemblages. Use of porcellanites and Knife River flint was higher during the Middle Archaic than during the other periods (Tratebas 1986). This suggests a rather wide-ranging, mobile, and flexible adaptive strategy. A settlement pattern based on scheduling is indicated for both the Middle Archaic and later periods represented at the McKean site (Eckles 1985). Links between the Black Hills and the Powder River Basin are suggested by the exotic tool-stone, especially porcellanite. The main porcellanite sources lie to the northwest of the Black Hills in southeastern Montana and northern Wyoming. Assemblages from Powder River Basin sites contain much tool-stone from the Black Hills, as well (Eckles 1985). Some sites indicate a link between the Black Hills and Badlands. The consistent co-occurrence of Badlands chalcedony and Knife River flint (Tratebas 1986) raises the possibility that much of the material identified as the latter type is Scenic chalcedony, which is common in the White River Badlands. The two types are easily confused (Nowak and Hannus 1985). Badlands sites typically contain little nonlocal tool-stone; however, some Black Hills quartzite has been noted at Badlands sites. In spite of this, the vast majority of tool-stone found in Middle Archaic components from the Black Hills is of local origin.

Two basic habitation features occur in northwestern plains Middle Archaic sites: prepared pit house features and stone circles. Both types have been found in the project area. Pit houses first appear in the archaeological record of the northwestern plains during the Early Archaic period (Frison 1991:83–86; Larson 1997); most date toward the end of the period. These usually appear as deep, circular stains, sometimes with central post-molds. Others are oval with multiple post-molds along the long axis. Both types contain numerous features: cache pits, fire-pits, and grinding stones (Frison 1991:84; Larson 1997). Most of these are in intermontane basins. Middle Archaic pit houses are essentially similar. The McKean site contained at least one pit house feature (Kornfeld *et al.* 1995; Frison 1991:97). It was a dish-shaped pit, about 2.5 meters in diameter, surrounded by small, irregularly shaped stains. A straight-sided fire-pit and other small features occurred inside the pit house feature. The original investigator of the McKean site noted a different circular depression about 2.5 meters in diameter and about 45 cm deep; however, it could not be determined whether the feature was of cultural origin (Mulloy 1954:442). A large circular depression was noted at the Harbison site, but this did not appear to be cultural and was not fully tested (Sundstrom 1981b). Two winter habitations in the Hogback (George Hey and 39FA458) are in relatively unsheltered ridgetop locations. Based on their locations, one can speculate that these represent pit house occupations; however, excavation methods were not adequate to detect the presence of pit house features at either site (Tratebas and Vagstad 1979; Haug *et al.* 1980).

Stone circles first appear in significant numbers in the northwestern plains during the Middle Archaic (Frison 1991:92). These are rings of stones, 3–7 meters in diameter that probably represent sites where tipis or circular cribbed log structures were used. These usually contain few features and artifacts, suggesting short-term use. Many contain central hearths; however. The roasting pits so common in other Middle Archaic sites are generally not associated with stone circle sites (Frison 1991). Some researchers have questioned the Middle Archaic age of tipi rings in the northwestern plains (Kehoe 1983). Both diagnostics and radiocarbon dates are rare, due to the sparse content of most stone circles; however, a few securely dated examples can be cited (Frison 1991; Adams 1978; Brumley 1975; Quigg 1981).

Rock shelters were not used as much during the Middle Archaic as during other periods. Five West River sites provide evidence of intensive, repeated occupation of rock shelters. The Belle and Mule Creek rock shelters in the northwestern periphery of the Black Hills both provide evidence of multiple occupations (Wheeler 1957; Kornfeld *et al.* 1995). Both contained grinding stones, several hearth types and a wide variety of faunal and seed assemblages, suggesting a diverse subsistence centered in the resource-rich zone between the forested uplands and grassy lowland basins. The Beaver Creek site in the southern Black Hills also contained evidence of periodic reoccupation and exploitation of a wide range of resources (Alex 1991; Martin *et al.* 1993). The Boulder Creek and Red Canyon rock shelters in the northern Black Hills echo this pattern of reoccupation of favored sites and use of a variety of resources ( *et al.* 1995; Schneider *et al.* 1997). Middle Archaic material from Boulder Creek was interpreted as the remains of a winter base camp for a small family group ( *et al.* 1995). These patterns are reminiscent of Archaic sites in the Bighorns, with long records of a foothills-based broad-spectrum adaptation distinct from the plains adaptation oriented toward big game (Husted 1969; Black 1991).

Middle Archaic sites typically contain large numbers of hearths and roasting pits. Hearths may or may not be lined with rocks. Broken grinding stones and manos are often incorporated in the rocks lining or filling hearths. Lined or unlined shallow basins and rock-based platform hearths

are typical. Roasting pits include both rock-lined and rock-filled types. These may be cylindrical or basin-shaped. Scatters or piles of fire-cracked rocks from hearth cleaning often surround these. These roasting pits apparently had multiple uses. Many contain small bone fragments; others contain small amounts of seeds. Grinding stones and smashed bone fragments frequently occur in association with roasting pits, again suggesting use for both plant and animal food processing.

Caches are another distinctive Middle Archaic feature type. Two tool caches were found at the McKean site (Kornfeld *et al.* 1995). The Harbison site contained two caches of tool-stone (Sundstrom 1981b). Mano-metate sets had been cached at Lissolo Cave, Miner Rattlesnake, and a small rock shelter near the George Hey site. Outside the Black Hills, tool caches have been found in Middle Archaic components at the Lightning Spring site in northwestern South Dakota (Keyser and Davis 1984), the Lower 30 (Beckes 1985) and Dodge (Davis 1976) sites in Montana. Some pit features may represent food caches. This extensive use of caching implies scheduling. Some foraging or collecting-based subsistence systems require caching to operate efficiently (Kornfeld *et al.* 1990). More studies of caching behavior are needed to define the specific role this practice played in Middle Archaic life ways.

The numerous grinding stones found in Middle Archaic sites have been interpreted as evidence of extensive use of plant foods. This idea gains support from both ethnographic and distributional data. Few ground stone industries occur in the northern half of the Northwestern Plains, where bison hunting was the dominant economic activity throughout prehistory. More direct evidence of plant use has been harder to obtain. At Leigh Cave in the Bighorn Basin, onion skins and the seeds of chokecherry, buffaloberry, limber pine, and rose were found in a Middle Archaic level (Frison and Huseas 1968). The use of chokecherry during the Archaic period was noted for southwestern Wyoming (Smith 1988). The Lightning Spring site in northwestern South Dakota contains a few charred seeds of chenopods, grass, and composite (probably wild sunflower, Keyser 1986). Much of the evidence currently available on McKean plant use comes from Black Hills sites. The George Hey site contained a few chenopod and grass seeds (Haberman 1986a). Re-excavation of the McKean site yielded charred remains of one chenopodium and one amelanchier seed, ten ponderosa pine seeds, and nine prickly pear cactus areoles (Latady and Dueholm 1985; Kornfeld *et al.* 1995). While these are not sufficiently abundant to suggest intensive use of plant foods, some use is clearly indicated, especially by the prickly pear remains. Belle Rock Shelter contained wild plum pits; however, these were not clearly of cultural origin. The Beaver Creek site is reported to have contained "large quantities" of charred seeds (Alex 1991:49), but these were never analyzed.

Use of chokecherry and buffaloberry may be related to pemmican production, based on ethnographic patterns. It is possible that many plants were exploited in the project area that would not leave behind pollen or seeds. These include various shoots, yucca blossoms, prickly pear pads, and the roots of sego lily, wild onion, and prairie turnip. (See Haberman 1986a for a more complete list.) Other plants may have been consumed raw or dried for storage, rather than cooked or roasted; the seeds of these would likely have been consumed by rodents or rotted. Thus, the amount of plant use suggested by actual plant remains probably is much lower than actually took place.

Roasting pits and grinding stones suggest extensive use of seeds. Many edible seeds can be processed for storage by roasting. Most seeds must be ground and/or cooked or roasted to be digestible by humans. The presence of microblade tools also hints at the use of seed-bearing plants,

especially grasses, for food. More study is needed before the extent of plant use in the Middle Archaic is understood.

The use of insect foods has not been documented for any Middle Archaic sites from South Dakota; however, two sites in the Wyoming Bighorns provide evidence for insect consumption. At Leigh Cave, the remains of several hundred roasted Mormon crickets were found in a Middle Archaic component (Frison and Huseas 1968). Evidence for ant consumption was found at the Bandit Site (Haberman 1986a). Researchers should be aware of this potential food source, so that its importance in subsistence can be evaluated.

Small animals are included in the faunal assemblages from four Middle Archaic sites in South Dakota. The Kolterman site assemblage included both cottontail (7 elements) and gopher (3 elements) (Wheeler 1957). Prairie dog was found in the Harney site (Wheeler 1957). The McKean site contained rodent, canid, bird, and frog bone in the Middle Archaic component (Mulloy 1954). The Beaver Creek Rock Shelter contained charred bone from fish, frogs, toads, rabbits, and small rodents. This suggests human use of a wide range of small animals, although the bones have not been analyzed as archaeological material (Martin *et al.* 1993). In addition, a panel of Archaic rock art in Craven Canyon depicts what appears to be a rabbit snare (Sundstrom 2004).



Figure 26. Animal bone exposed in walls of excavation unit at Beaver Creek rock shelter, 39CU779, 1987 (ARC photo).

Bison dominates Middle Plains Archaic faunal assemblages from the Canadian plains, northern Montana, and much of Wyoming; however, high altitude sites typically contain more diverse faunal assemblages, dominated by mountain sheep and deer (Frison 1991). The Dead Indian Creek site in northwestern Wyoming contained large amounts of mule deer and mountain sheep bone (Frison 1991). The Lightning Spring site in northwestern South Dakota included pronghorn, bison, bighorn sheep, and canid bone, with pronghorn dominating. By contrast, the Cordero Mine site in the central Powder River Basin contained large amounts of bison bone, to the practical exclusion of all other species (Reher *et al.* 1985; Niven and Hill 1998). Interestingly, tool-stone from this site indicates very little contact with the Black Hills during the time the site was used. The Scoggin site in southern Wyoming provides another example of large-scale communal bison hunting during the Middle Archaic (Frison 1991; Niven and Hill 1998).



*Figure 27. Smithsonian Institution River Basin Surveys archaeologists excavating a stone-lined hearth at the Kolterman site, 39FA9, in 1948 (SI-RBS photo on file at ARC).*

Bison was recovered from Middle Archaic components at several Black Hills sites, including Harney, Kolterman, Landers, and Lissolo Cave. In all instances, however, the amount of bison bone is small, with deer or pronghorn usually occurring in equal or greater quantity. Deer was the dominant species found in Middle Archaic levels at the McKean Site; the only bison recovered in the Middle Archaic levels was a fractured pelvis element interred with a human skull (Mulloy 1954). Deer also dominated the Beaver Creek, George Hey, and Dead Sage assemblages; pronghorn was the main species represented at the Landers Site. Lissolo Cave contained bison,

elk, and mule deer bone. Deer appears to dominate the Middle Archaic levels of the Beaver Creek Rock Shelter, although this is not entirely clear from published data (Martin *et al.* 1993). Deer is by far the most prevalent species depicted in Archaic rock art in the Black Hills, although a few mountain sheep, pronghorn, and bison occur as well (Sundstrom 1989b).

In general, Middle Archaic sites contain more diverse faunal assemblages and less bison than sites dating to earlier and later periods. Large animal bone is typically smashed and/or burned, indicating the importance of marrow extraction during this period. At the Boulder Creek Rock Shelter in the Black Hills, bone from the Middle Archaic level indicated more intensive bone processing than took place in other periods (Martin *et al.* 1993). A typical mountain- foothills subsistence economy, rather than a grasslands-oriented economy, is indicated by many of the Middle Archaic sites in Wyoming and western South Dakota.

The Middle Archaic period is marked by a number of innovations. These translate into the archaeological record as a cluster of traits that are rare or absent in earlier periods. These include pit houses, corrals and pounds for communal game procurement, tool and food caches, extensive use of grinding stones, production of microblades and microtools, large rock-filled roasting pits, diverse faunal and floral remains, and features related to pemmican production. Some of these represent true innovations, while others are intensified or expanded versions of traits present in earlier periods. This distinctive cluster of traits is unevenly distributed. It is largely restricted to the Rockies and their outliers, intermontane basins, the broken terrain of the eastern fringe of the high plains in the Dakotas and northwestern Nebraska, and the Black Hills (Black 1991; Frison 1991). These traits suggest a unique and efficient pattern of adaptation that archaeologists are only beginning to understand.

Taken together, Middle Archaic innovations in South Dakota imply significant changes throughout the cultural system or systems. The most basic and radical of these changes was a shift from a non-scheduled hunting and foraging way of life to a scheduled, logistically organized mode of resource exploitation. This was facilitated by innovations in resource use, storage technologies, and chipped stone tool industries. In other words, new items were on the menu, people were able to acquire and store surpluses of desired resources, and new tools were invented to aid in gathering and storing surplus food. The construction of pit houses for repeated seasonal occupation and impoundments for repeated use in capturing game animals imply a considerable investment in particular places important to the survival of the group. These features were clearly intended for periodic reuse and imply a fixed territory within which a group scheduled major hunting and collecting activities. Pit houses thus far excavated in the northern plains and Rockies are furnished with numerous storage pits, again implying prolonged periods of occupation. Such features are essentially different from the tipi of Late Prehistoric times, which would have been moved every few days or weeks. Caches of tool kits, tool-stone, tool blanks, and grinding stones also attest to scheduling. Storage pits imply food surpluses and food storage technologies. The preponderance of marrow extraction features in Middle Archaic sites suggests wholesale production of pemmican, a food produced specifically for long-term storage. Butchering patterns also confirm the taking of meat for pemmican, rather than immediate consumption (Frison 1991; Fawcett 1985). It appears that much of Middle Archaic life was focused on scheduled resource extraction activity.

## **Environmental Setting**

Current data indicate that the Middle Archaic period was a time of relatively moist climate and resources abundance. Sites are distributed throughout the landscape, not just near water sources. Sites are distributed in regard to seasonally available resources and winter shelter. Climatic conditions allowed for soil deposition and preservation in many regions of the state during and following this period.

## **Temporal Boundaries**

4900 to 3180 BP, with most dates falling between 4500 and 3500 BP

## **Spatial Boundaries**

Sites occur throughout the state, but are much more common west of the Missouri River.

## **Property Types**

Periodically reused base-camps, small camps and special activity stations, possible game drive sites, pit houses, roasting pit complexes, plant food processing sites, rock art.

## **Locational Characteristics**

McKean sites (McKean, Dunna, and Hanna) occur throughout the state. Sites are most common in the western half of the state. McKean Complex sites occur in a wide variety of settings, from rock shelters to stream terraces to high-altitude springs. Sites are abundant in mountains-foothills zones, on the open plains, and in areas with butte and basin topography. Sites often show evidence of intensive use of wide variety of local resources. By maximizing their use of local resources, McKean groups probably had smaller effective territories than Paleoindian or Late Prehistoric groups.

## **Context Definition**

McKean complex sites are recognized on the basis of radiocarbon dates or dart points typed as McKean lanceolate, Duncan, or Hanna. A type with deep side-notches referred to as the Mallory type is also included in the McKean complex. McKean sites typically contain many hearths, including rock-lined pit hearths, and grinding stones. McKean Complex base-camps often were reused many times. McKean sites often contain a diverse assemblage of animal bone and plant remains, but sometimes have little or no bison bone.

## **Condition**

South Dakota contains many buried McKean components. The recorded sites are mainly in the western half of the state and on federally administered lands. Given this, they are not under an unusual threat of destruction from human activities. McKean sites are rare in the White River Badlands, very probably because deposits of that age have not survived the active erosion that characterizes the region.

## **Voids in Research**

Little is known of McKean Complex developments along the Missouri River and in eastern South Dakota. In the Black Hills, McKean research has been hampered by the relative shallowness of many deposits, combined with the tendency of McKean components to occur in multiple component sites. This makes it difficult to tease out the features and artifacts that belong to the separate cultural complexes. Better excavation and analysis techniques are needed to address this problem. More research is also needed on projectile point typology and the identification of other time-diagnostic artifacts from this period. Several possible pit house features are known from the Black Hills; however, these have not yet been fully explored.

## **Research Topics**

1. What forms of shelter did McKean populations employ? Were portable shelters, such as tipis, used as well as rock shelters and pit houses?
2. What accounts for the increase in sites during this period—better site preservation or higher population densities? What environmental and cultural factors supported higher densities, if they existed?
3. What accounts for the differences in projectile point morphology? Do different point types indicate distinct cultural groups?
4. What was the extent of territory used by each cultural group? Did some groups co-occupy the same region by following different subsistence regimes?
5. Do different subsistence patterns indicated by McKean sites reflect portions of a seasonal round, regional differences, or fluctuations in subsistence patterns through time?
6. What are the details of McKean subsistence? What was the function of rock-filled fire hearths? How were metates used? What is the range of plant and animal food utilized and which foods were preferred? Why do some sites show intensive utilization of animals, including smashing bones to extract fats, and others show only muscle stripping? Which foods were preserved for winter? How long did a group stay in one place? What was the time interval between occupations? What constituted the seasonal round? What was the group size and how did it vary during the seasonal round? How did climate affect subsistence, the seasonal round, group size, and overall population size?
7. How did McKean Complex people adapt to various environmental niches in South Dakota? How did subsistence and settlement patterns vary between western, Missouri River, and eastern groups?
8. What are the details of the McKean Complex subsistence round? How were camp sites and special use sites selected? Did groups follow the same round each year or did they adjust their movements based on fluctuations in weather and resource availability?

9. Did the McKean Complex develop in place directly from Paleoindian cultural and technological traditions? Is it related to the somewhat earlier Oxbow Complex?
10. Are McKean based camps at high-altitude springs different from those on stream terraces or in rock shelters?
11. Why is there so much McKean material in the Black Hills?

## **Research and Management Goals**

Well preserved, deeply buried, and complex sites should be given priority for preservation and research. Smaller, single use sites will also provide important information about McKean history and life-ways. Because Archaic deposits can be very deeply buried, it is imperative that test excavations extend to bedrock or regolith. Every effort should be made to collect and analyze bone, wood, plant remains, and charcoal during testing and excavation projects. Special efforts should be made to identify, study, and preserve McKean sites in eastern South Dakota.

## **National Register Listings**

39BF206, 39BF224, 39BF225, 39CU779, 39FA395, 39FA1154, 39HN204, 39HU104

## **Archaeological Regions**

Bad-Cheyenne, Bad River Basin, Belle Fourche, Big Bend, Black Hills, Central Cheyenne, Fort Randall, Grand-Moreau, Grand-Moreau Tablelands, Lower Big Sioux, Missouri Coteau, Sandstone Buttes, South Fork Cheyenne, Upper James, White River Badlands, Yankton

## **McKean Sites**

39BF231, 39BU100, 39BU107, 39BU203, 39BU220, 39BU223, 39BU356, 39BU386, 39CO103, 39CU16, 39CU253, 39CU268, 39CU529, 39CU686, 39CU724, 39CU758, 39CU1013, 39CU1120, 39CU1142, 39CU1172, 39CU1278, 39CU3311, 39DW119, 39ED13, 39FA68, 39FA225, 39FA296, 39FA302, 39FA307, 39FA395, 39FA406, 39FA484, 39FA522, 39FA527, 39FA537, 39FA671, 39FA789, 39FA790, 39FA942, 39FA1033, 39FA1044, 39FA1154, 39FA1274, 39FA1335, 39FA1418, 39HN1, 39HN3, 39HN204, 39HN430, 39HN841, 39HU174, 39LA116, 39LA159, 39LA170, 39LA172, 39LA204, 39LA305, 39LA796, 39LA822, 39LA1330, 39MD145, 39MD413, 39PE212, 39PN47, 39PN128, 39PN160, 39PN184, 39PN319, 39PN326, 39PN573, 39PN745, 39PN755, 39PN1122, 39PN1186, 39PN1415, 39PN1819, 39PN2958, 39WW119

## **Hanna Sites**

39BU109, 39BU224, 39BU357, 39CU1909, 39FA52, 39FA214, 39FA229, 39FA718, 39HN101, 39HN108, 39JK62, 39JK220, 39LA822, 39MD307, 39PN2616, 39SH89, 39ST321

## **Duncan/Hanna Sites**

39CA153, 39CH225, 39CU331, 39FA1417, 39HK40, 39HN841, 39JN13, 39LA159, 39LA796, 9LN7, 39MD145, 39PN128, 39PN1380, 39PN1810, 39SL440, 39SP202, 39SP251, 39ST321

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## **Late Archaic and Plains Woodland**

### **Contexts**

Three contexts are defined for Late Archaic cultural developments and twelve are defined for Woodland cultural developments. The Late Archaic and Woodland are largely contemporaneous in South Dakota, but tend to occur in different parts of the state. Late Archaic contexts are: Yonkee, Pelican Lake, and Besant, all identified on the basis of distinctive projectile points. Woodland contexts include: Fox Lake, Sonota, Valley, Unassigned Middle Woodland, Unassigned Late Woodland, Lake Benton, Arvilla, Loseke Creek, Randall, Great Oasis, and Blackduck/Sandy Lake.

### **Overview**

From about 2500 to 1100 years ago, the northwestern Great Plains witnessed the development of three distinct cultural complexes. The first, largely limited to the upper Powder and Belle Fourche drainages, is the Yonkee complex. A roughly contemporaneous, but much more widespread development is termed the Pelican Lake complex. These were followed in some areas by the Besant complex. In western South Dakota, these complexes had a mixed bison hunting and foraging subsistence base. Complex communal bison hunts were an important Besant adaptation throughout the Northwestern Plains. In eastern South Dakota, Besant and Pelican Lake projectile points are associated with Plains Woodland ceramics and features such as burial mounds. In South Dakota, sites with Besant or Pelican Lake projectile points that lack ceramics are typically listed as Late Archaic, and those with ceramics or associated with burial mounds are listed as Woodland.

The Late Archaic of western South Dakota is characterized by two related changes in subsistence. The first is a shift toward greater use of bison. The second is a shift away from the diverse, broad-spectrum subsistence of the Middle Archaic toward a more limited and specialized subsistence pattern. In spite of the impressive remains left behind by the communal bison hunters of the Wyoming and Montana high plains, it is clear that not all Late Archaic subsistence was based on bison. The Butler-Rissler site (48CA1000) on the Platte River in southeastern Wyoming contained mussel shell and non-bison bone in association with large amounts of fire-cracked rock and Besant ceramics. The site also contained three Besant projectile points and three end-scrapers similar to others found in Besant contexts (Miller *et al.* 1987; Miller and Waitkus 1989). The Mini-Moon site in eastern Montana contained both bison and pronghorn or deer bone, as well as evidence for bone-marrow extraction (Hughes 1991). The Sod Table site (39PN102) in the White River Badlands was similarly devoted to processing small numbers of bison for bone grease and

perhaps for pemmican (Haberman *et al.* 1984). Late Archaic levels of the McKean site contained shellfish, bison, pronghorn, frog, canid, and bird remains, of which shellfish, bison, and pronghorn were by far dominant (Mulloy 1954). The Late Archaic level of the Lissolo Cave site contained only bison (Steege and Paulley 1964). Probable Late Archaic levels at 48CK46 contained bison, deer and pronghorn bone (Kornfeld *et al.* 1995; Wheeler 1957). Probable Late Archaic material at 48WE320 included a varied faunal assemblage (McKibbin 1988; McKibbin and Metcalf 1987). Small, unidentified bone fragments were also associated with a probable Besant component at 48CK864 (Kornfeld *et al.* 1995). A single, unidentifiable bone fragment was reported from the large fire-pit complex at 39CU271. Most bone at these sites was crushed, suggesting marrow (bone grease) extraction for pemmican production.

A more usual Late Archaic site is a cave in the northern Black Hills. Although the site had been subject to looting, volunteers from the University of Wyoming and the South Dakota Archaeological Research Center were able to conduct a successful excavation project there in the early 2000s. Site 39LA504 contained a shallow cultural deposits consisting of a large amount of obsidian from the Yellowstone area and southeastern Idaho, chipped stone tools and debris made from local rock, fragments of atlatl darts, feathers, leather, fur, mountain sheep and bison hair, shell, and a small amount of bone scrap. Plant remains included prairie turnip, bottle gourd, plum, birchbark, and hazelnut. Corner-notched projectile points and radiocarbon analysis indicate a Late Archaic age for the site (Weathermon 2011).



Figure 28. Atlatl dart fragments from 39LA305 (ARC photo).



Figure 29. Socketed shafts from 39LA305 (ARC photo).

## **Environmental Setting**

Late Archaic and Woodland sites occur in all environmental settings in the state.

## **Temporal Boundaries**

3100-850 BP

## **Spatial Boundaries**

Sites assigned to the Late Archaic period are more common in the western half of the state, while those assigned to the Woodland period are more common along the Missouri River and in the eastern half of the state; however, sites of each designation are found throughout the state.

## **Property Types**

Camps and special use sites, bison kills, and isolated finds are typical of Late Archaic sites in the western portion of the state. Woodland sites, primarily in the eastern and central portions of the state, include camps, multiple-family habitation sites, burial mounds, and special use sites.

## **Locational Characteristics**

Sites assigned to the Late Archaic or Woodland period are found in all regions of the state and in all environmental settings.

## **Context Definitions**

Sites with ceramics or burial mounds are generally placed in the Woodland period, while sites lacking those but containing Yonkee, Pelican Lake, or Besant projectile points are listed as Late Archaic. The Woodland designation reflects a broad-based subsistence pattern, occurrence of small village-like settlements, and influences from eastern North America, such as burial mounds and shell ornaments. The Late Archaic designation reflects a continuation of hunting-based subsistence strategies and a highly dispersed mobile settlement pattern that continued patterns of the Middle Archaic period.

## **Condition**

Many Woodland burial mounds have been looted or destroyed by cultivation or construction. Late Archaic sites have not been threatened by intentional destruction; however, some are damaged by erosion the landforms in which they occur.

## **Voids in Research**

See comments on individual Late Archaic-Woodland contexts.

## **Research Topics**

See topics listed in individual Late Archaic-Woodland contexts.

## **Research and Management Goals**

See comments on individual Late Archaic-Woodland contexts.

## **National Register Listings**

39HN204, 39LN2

## **Archaeological Regions**

Black Hills, White River Badlands, Sandstone Buttes, Grand-Moreau Tablelands, Belle Fourche, Bad-Cheyenne, South Fork Cheyenne, Central Cheyenne, Grand-Moreau, Big Bend, Lower James, Middle James, Upper James, Lower White River, South Fork Cheyenne, Lower Big Sioux, Upper Big Sioux, Yankton, Fort Randall, Missouri Coteau, Prairie Coteau

## **Unassigned Late Archaic Sites**

39BK12?, 39CU154, 39CU895, 39JK96, 39JK118, 39LA254, 39LA305, 39MD43?, 39PN53, 39PN102, 39PN214, 39PN599, 39PN705, 39PN756, 39PN895, 39SH37, 39SH68, 39SP202, 39ST139, 39TD37, 39TD40, 39CD23, 39CL10, 39C064, 39CU932, 39CU1048, 39DE5, 39DE13, 39DE18, 39DE40?, 39GR62, 39GR64, 39HL6, 39HN372?, 39HT38?, 39LK7, 39LK18, 39LM144?, 39LN2, 39LN7, 39LN19, 39LN24, 39MD145, 39MD196, 39MH80, 39PN5, 39PN58A, 39SL135?, 39UN1

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Johnson and Johnson 1998; Kornfeld *et al.* 2010

# Yonkee Complex

## Overview

Along the Powder and Belle Fourche rivers, several bison kill sites have been assigned to the Yonkee complex. Dates on these sites cluster between 3100 and 2600 BP (Frison 1991). The Yonkee site is a bison kill located near the Powder River in southeastern Montana (Bentzen 1962). Two other Yonkee bison kill sites, Mavrakis-Bentzen-Roberts and Powder River, were subsequently found along the Powder River in Wyoming (Frison 1991:195–196). All three of these were communal bison kills accomplished by driving herds into arroyo traps. At Mavrakis-Bentzen-Roberts, the arroyo trap was enhanced by a corral or other structure (Frison 1991:105). A cliff drive, the Kobold Buffalo Jump, in southeastern Montana is another type of Yonkee bison kill site (Frison 1991). These sites appear to have been used in late fall and winter. A different emphasis is indicated by site 48CK1391, a Yonkee site located on the Belle Fourche River. Here, pronghorn made up most of the bone. This and other materials at the site suggested generalized hunting and gathering, rather than a communal hunt (McKibbin *et al.* 1988). The site was dated at about 2700 BP.

A site in the eastern Black Hills contained evidence for early Late Archaic use of tipi-like habitation structures. The Hermosa Site contained 30 tipi rings. An excavated ring contained a Pelican Lake projectile point and two points identified as Yonkee variants (Hovde 1983). The excavated ring contained the remains of a cleaned-out interior hearth and a reused exterior hearth or roasting pit. Grinding stones, hammerstones, and a mixed chipped-stone tool assemblage were found. These indicate that butchering and plant-food processing took place at the site. A warm-season occupation was hypothesized for the site, based on its unsheltered location and the configuration of the tipi rings (Hovde 1983). A Yonkee point was also found at the Buster Hill site where materials from Late Paleoindian through Late Prehistoric age were mixed in a shallow deposit (Hannus *et al.* 1997). This site was interpreted as a series of short-term seasonal hunting camps.

Yonkee appears to be a localized development with antecedents in the McKean complex. The Yonkee projectile point is similar to some McKean complex types (Frison 1991:199). The Kobold site had been used in Middle Archaic times, although no diagnostic artifacts were found in the early levels. For now, the record is too incomplete to fully define Yonkee as a cultural complex or to trace its relationship to other developments.

## Environmental Setting

Current data are insufficient to recognize patterns in the environmental setting of Yonkee sites.

## Temporal Boundaries

Uncertain, but estimated at 3100 to 2500 BP.

## **Spatial Boundaries**

Western South Dakota; Yonkee also makes up a minor component of the Blood Run site in the Vermillion Basin.

## **Property Types**

In South Dakota, 5 of 12 recorded Yonkee sites were isolated finds of projectile points. Yonkee points were found within multiple-component base camps at 39LA796, 39PE69, 39SH100, 39SP202, and 39LN2. Two other sites were identified as camps, but not investigated sufficiently to tell whether components other than Yonkee were present (39FA228, 39JK63). Elsewhere, Yonkee sites include buffalo kill sites.

## **Locational Characteristics**

Except for a reported Yonkee component at the Blood Run Site, 39LN2, all sites are in western South Dakota, primarily in the Black Hills, Belle Fourche, and South Fork Cheyenne regions.

## **Context Definition**

For now, this component is defined by the presence of Yonkee projectile points. Too little information is available to expand the definition.

## **Condition**

The condition of the sites cannot be assessed without more information.

## **Voids in Research**

Almost nothing is known about Yonkee in South Dakota.

## **Research Topics**

1. What are the features of the Yonkee complex in South Dakota, other than projectile point type?
2. Was Yonkee subsistence in western South Dakota similar to that indicated for Wyoming and Montana, including bison jumps?
3. What is the relationship between the apparently limited Yonkee complex and the more widespread McKean complex that precedes it?
4. What is the age of the Yonkee complex in South Dakota?

## **Research and Management Goals**

Because sites are assigned to the Yonkee complex based on projectile point type, a necessary first step is to define the range of variability in this type. Otherwise basic research is needed, including study of site distribution, age, typical site types, housing types, strategies for food acquisition and preparation, and indicators of belief systems. Sites that are known to contain Yonkee components, or that are likely to contain them, should be given a high priority for preservation and study.

## **National Register Listing**

39LN2

## **Archaeological Regions**

Belle Fourche, Black Hills, Grand-Moreau Tablelands, South Fork Cheyenne, Upper James, Lower Big Sioux, White River Badlands

## **Sites**

39BU82, 39BU154, 39CU3525, 39CU3571, 39DE11, 39FA102/39FA228, 39FA559, 39JK63, 39LA754, 39LA796, 39LA888, 39LN2, 39MP9, 39PE69, 39PN1512, 39SH100, 39SP202

## **Bibliography**

Kornfeld *et al.* 2010

## **Pelican Lake Complex**

### **Overview**

The Pelican Lake complex was first recognized at the Mortlach site in southern Saskatchewan (Wettlaufer 1955) and has since been found throughout the northern Great Plains (Kornfeld *et al.* 2010:124). Apart from the distinctive projectile point type, this complex has nothing to distinguish it from other Late Archaic developments in the region.

In South Dakota, Pelican Lake points often occur in multiple-component occupation sites representing long-term base camps of groups of hunter-gatherers. At 39BU244, Late Paleoindian, Early Archaic, Middle Archaic, Pelican Lake, and Besant projectile points were found on the surface, along with some fire-cracked rock. Shallow test excavations at the site failed to identify intact buried deposits (Toom and Kordecki 2002).

Multiple-component sites in the southern Black Hills, 39CU557 and 39CU720, contained flakes, chipped-stone tools, and Pelican Lake and Middle Archaic projectile points on the surface, but the sites were not test-excavated (Kruse *et al.* 2008). Nearby site 39CU782/39CU3303 similarly had Middle Archaic and Pelican Lake projectile points on the surface along with many other chipped-stone artifacts, five or six stone circles, and three cairns. Blading a fire-break during

a wildfire exposed hundreds of artifacts across this large site (Rosenberg 2017). The Prairie Dog Spring site, 39CU843, is another large scatter of chipped-stone artifacts in the same area of the Black Hills. It contained McKean and Pelican Lake points along with numerous other chipped-stone artifacts (Jones 2006). A site in the same area with a hearth, a few chipped-stone artifacts, and a Pelican Lake projectile point on the surface (39CU351) appears to have only one component; however, the site was not test-excavated (Kruse *et al.* 2008). Another site in this area, 39CU4165, contained a large scatter of chipped-stone artifacts, including one Pelican Lake and one Besant projectile point. Test excavation indicated a near-surface site with little soil development (Hammer *et al.* 2013).

Pelican Lake materials in the central Black Hills also tend to occur in multiple-component base camps and special activity sites. Site 39LA40 was interpreted as a base camp with Middle and Late Archaic components based on surface finds and test units (Noisat 1990d). The White Spring site, 39PN100, has six possible stone circle features on the surface and a variety of chipped- and ground-stone artifacts in surface exposures. Late Paleoindian, Middle Archaic, and Late Prehistoric projectile points, in addition to a Pelican Lake point, indicate use of this site over most of area prehistory (Archaeological Research Center records). Sites 39PN1124 and 39PN113 are also likely base camps with Paleoindian through Late Prehistoric materials, including Pelican Lake projectile points (Archaeological Research Center records). The same pattern is present in the South Fork Cheyenne region at sites 39FA92, 39FA405, and 39FA1363. Site 39FA23, by contrast, is more similar to the White River Badlands sites in containing Plains Village materials, along with a single Pelican Lake point found on the surface of the heavily disturbed site. The main site is thought to be a Middle Missouri-affiliated hunting camp focused on pronghorn antelope (Lippincott 1996).

The Potato Patch site was recorded as a scatter of chipped-stone artifacts and bone fragments in rodent mounds and in shovel tests (Williams 1995b). The landowner reported finding numerous artifacts in this garden area, including a Paleoindian projectile point similar to local Goshen points, possible Middle Archaic points, Late Prehistoric points, and Late Plains Archaic points, including Pelican Lake types. Other finds included chipped-stone knives, scrapers, and a drill. A metal trade point was also found, indicating use of the site into the Protohistoric era. No formal excavations have been conducted at this site; however, archaeologists noted the likelihood of multiple intact buried cultural levels there (Williams 1995b).

Four sites in the White River Badlands contained hearths, a variety of stone tools, and Pelican Lake projectile points (39PN744, 39SH97, 39SH99, and 39SH126). Another site, 39SH81, is a tool-stone quarry that also had a Middle Archaic projectile point and unidentified pottery sherds (Lueck and Butterbrodt 1984). Three other multiple-component sites in this region also had ceramics in possible association with Pelican Lake projectile points; however, all were mixed deposits: one with Middle Archaic and Besant materials (39JK62), and two with Middle Archaic and Late Prehistoric materials (39JK82 and 39JK63). The latter had two types of Woodland pottery dubbed Kadoka Cord-Imprinted and Badlands Thick, which exhibit similarities to Early Woodland pottery from Minnesota (Lueck and Butterbrodt 1984). At 39JK82, charcoal from two exposed hearths yielded dates of 2050 and 1970 BP, within the expected range for Pelican Lake. A fourth site, 39JK70, had hearths exposed in the sides of gullies, a few pottery sherds, a few chipped-stone tools, and a Pelican Lake projectile point. These sites raise the possibility of

ceramic-bearing Woodland components that include Pelican Lake-like projectile points in this region.

Excavations at White River Badlands site 39PN972 revealed a deep, well-stratified site, with Middle Woodland and Plains Village (Extended or Post-Contact Coalescent) components. The lower level, radiocarbon dated to 2246 BP, contained a Pelican Lake point. Four hearths that appear to belong to the Late Archaic component(s) contained small mammal and bird bone and plant remains, including mint, grass species, rose, gooseberry or current, and buckbrush (Larson and Penny 1993). These features suggest a broad-spectrum food base.

In the Sandstone Buttes region, Pelican Lake components occurred along with Middle Archaic materials at 39HN149, a small scatter of chipped-stone artifacts, and at Lightning Spring (39HN204), a complex, stratified site with Middle Archaic through Late Prehistoric levels. Lightning Spring is a based camp with at least 12 episodes of use (Keyser and Fagan 1993; Keyser and Wettstaed 1995). One site in the Grand-Moreau Tablelands region, 39PE65, appears to be a single-use hunting camp site (Laundry 2014). Another site in this region, 39DW189, was a bison processing site containing hearths, animal bone, and Pelican Lake and Avonlea projectile points (Archaeological Research Center records).

The few Pelican Lake finds along the Missouri River occur in multiple-component sites. The Amundson site, 39WW119, contained Middle and Late Archaic, Late Prehistoric, and Historic materials, as well as a possible Paleoindian component. Test excavations at 39HU174 indicated the presence of buried Middle Archaic, Late Archaic, and Plains Village levels (Hannus and Winham 1988). Site 39CH241 similarly contained multiple occupation levels, including one dated to the Late Archaic (Donohue 2015). In the James and Big Sioux river valleys, 39LK58, 39ED17, 39ML82, and 39MP23 appear to represent Pelican Lake hunting camps or base camps. Two of these sites had stone circle features, suggesting that these Late Archaic groups were using tipi-like shelters.

These limited studies indicate a variety of lifeways associated with Pelican Lake projectile points, from a Woodland-like pattern in the White River Badlands to a Plains bison-hunting pattern in eastern South Dakota. Much more research is needed to sort out whether these cultures are separate or related developments.

## **Environmental Setting**

Pelican Lake sites are more common in the western half of the state, but occur in all types of environmental settings.

## **Temporal Boundaries**

3100 to 1500 BP

## **Spatial Boundaries**

Entire state, but much more common west of the Missouri River.

## **Property Types**

Artifact scatters, camp sites, quarries, kill sites.

## **Locational Characteristics**

Primarily found in the Black Hills and White River Badlands, but present in most regions in South Dakota.

## **Context Definition**

The Pelican Lake “complex” of South Dakota is essentially like other Late Archaic hunting-gathering complexes, apart from the presence of the easily recognized large, thin, triangular corner-notched projectile point.

## **Condition**

Varies. Many Pelican Lake components are present in South Dakota but are either surface scatters or in mixed subsurface deposits.

## **Voids in Research**

Virtually nothing is known of Pelican Lake in South Dakota as a distinct cultural development, if the projectile point actually indicates a distinct culture.

## **Research Topics**

1. Does Pelican Lake represent a distinct culture or is it a broad horizon style not specific to one culture?
2. Does Pelican Lake derive from an earlier tradition?
3. Can a specific Pelican Lake projectile point type be reliably distinguished within the widespread tradition of broad, triangular, corner-notched projectile points characteristic of the Late Archaic? Is Pelican Lake the same both east and west of the Missouri River?
4. Is there a definable Pelican Lake cultural assemblage?
5. What explains the apparent reemphasis on bison in Pelican Lake sites? Does this reflect actual dietary preferences or is it the result of the kinds of sites that have been preserved and discovered?
6. Is the “Pelican Lake” of the White River Badlands an eastern Woodland-derived development with related pottery types?

## Research and Management Goals

Single-component sites and multiple-components sites with good vertical separation should be given priority in preservation and research in order to develop a clearer view of Pelican Lake cultural developments.

## National Register Listings

39HN204

## Archaeological Regions

Black Hills, White River Badlands, Sandstone Buttes, Grand-Moreau Tablelands, Belle Fourche, Upper James, Bad-Cheyenne, South Fork Cheyenne, Central Cheyenne, Grand-Moreau, Big Bend, Middle James, Lower White River.

## Sites

39AU15, 39BN22, 39BN27, 39BN28, 39BU107, 39BU203, 39BU222, 39BU242, 39BU244, 39BU278, 39BU323, 39BU326, 39BU405, 39BU406, 39CD12, 39CH241, 39C0111, 39CU62, 39CU258, 39C266, 39CU273, 39CU531, 39CU557, 39CU709, 39CU720, 39CU782/39CU3303, 39CU819, 39CU832, 39CU843, 39CU1306, 39CU1411, 39CU1946, 39CU2841, 39CU3006, 39CU3598, 39CU4165, 39DW120, 39DW122, 39DW189, 39DW257, 39ED17, 39FA292, 39FA405, 39FA409, 39FA452, 39FA634, 39FA635, 39FA1069, 39FA1363, 39FA1645, 39FA1972, 39GR120, 39HL28, 39HN3, 39HN132, 39HN149, 39HN204, 39HN374, 39HN383, 39HN414, 39HN476, 39HN477, 39HN699, 39HN770, 39HN984, 39HN1082, 39HN1217, 39HN1246, 39JK39, 39JK62, 39JK63, 39JK70, 39JK82, 39JN32, 39LA40, 39LA105, 39LK59, 39MD103, 39MD145, 39MD236, 39ML82, 39MP23, 39PE34, 39PE65, 39PE85, 39PE171, 39PE199, 39PE208, 39PN100, 39PN113, 39PN219, 39PN275, 39PN533, 39PN607, 39PN686, 39PN690, 39PN727, 39PN744, 39PN753, 39PN972, 39PN1124, 39PN1174, 39PN1382, 39SB77, 39SH37, 39SH48, 39SH58, 39SH77, 39SH81, 39SH97, 39SH99, 39SH124, 39SH126, 39SH183, 39SH281, 39SH316, 39SL357, 39SL477, 39ST80, 39ST479, 39TD24, 39TD40, 39WW42, 39WW105, 39WW119, 39ZB85

## Bibliography:

Johnson and Johnson 1998; Kornfeld *et al.* 2010

## Besant

### Overview

Besant and Besant-like projectile points occur throughout the state. Most of the sites thus far recorded are simple surface scatters of chipped-stone artifacts. These seem to represent short-term camps and special-activity sites used by mobile hunter-gatherers. In the White River Badlands and Grand-Moreau Tablelands, 39PN748, 39PN754, 39PE227, and 39MD393 contained deflated hearths and one or two Besant points, again suggesting a short-term camp site. In the Black Hills,

the Besant sites tend to be in rock shelters (39PN114), and some of those (39CU154) contain very small amounts of pottery, suggesting a possible connection to Woodland pattern cultures.

Besant points also occur within the large, multiple-component artifact scatters typical of permanent springs in the interior Black Hills, South Fork Cheyenne, and Belle Fourche River region. These sites typically have Late Paleoindian through Late Archaic materials but lack vertical separation of the various components. Such sites include 39BU244, 39BU246, 39CU773, 39LA726, 39LA1217, 39PN96, 39PN128, and 39PN219. The few single-component Besant sites that have been test-excavated exhibit no obvious differences from other Late Archaic sites in the state. These sites are either short-term hunting or tool-stone procurement camps (39BN24, 39BU44, 39CU3624, 39DE38, 39FA14, 39JK35, 39PN103, 39PN280, 39PN286, and 39ZB86) or base camps (39CU795, 39CU4165, 39FA707, 39LA726, 39LA1217, 39LN72, 39PN96, 39PN128, and 39PN219). Some stone circle sites in the Missouri Coteau and James River Valley have Besant projectile points (39BE29/39BE94/39BE95, 39MP15, and 39MP21), suggesting use of the hide tipi at this time. The absence of differences between sites with Besant points and other Late Archaic sites in western South Dakota calls into question whether Besant represents a distinct cultural tradition or just adaptation of a new projectile point form.

Elsewhere in the Northwestern Plains, Besant is viewed as representing a culture based on large-scale communal bison hunting accompanied by ritual activity (Frison 1991). This pattern shows up in South Dakota only at the Nahani site, 39HN157, a large, multiple-use bison trapping operation with an associated butchering area and camp site. This site is located in the Sandstone Buttes region. It was not excavated, but surface finds of Besant points are consistent with radiocarbon dates from the various levels exposed in a test unit there, ranging from 1860 to 1670 BP.

The eastern Besant is discussed under Woodland complexes, below.

## **Environmental Setting**

Besant sites are more common in the western half of the state but occur in all types of environmental settings.

## **Temporal Boundaries**

Besant sites in Wyoming, Montana, and Saskatchewan date between 1840 and 1570 BP. A bison kill in northwestern South Dakota, 39HN176, had three Besant cultural levels representing separate uses of the site. A small test-excavation there yielded four radiocarbon dates on charcoal and bone ranging from 1860 to 1670 BP (Archaeological Research Center records). The Sonota Burial Complex of eastern South Dakota is estimated to date between 100 and 600 CE, or 1900 to 1400 BP (Johnson and Johnson 1998).

## **Spatial Boundaries**

Entire state, but much more common west of the Missouri River.

## **Property Types**

Artifact scatters, camp sites, quarries, kill sites.

## **Locational Characteristics**

Primarily found in the Black Hills and White River Badlands, but present in most regions in South Dakota.

## **Context Definition**

The Besant “complex” of South Dakota is essentially like other Late Archaic hunting-gathering complexes, apart from the presence of the typical large, side-notched projectile point. Besant points are sometimes mistaken for Early Plains Archaic Hawken points, and vice-versa.

## **Condition**

Varies. Many Besant sites are present in South Dakota, but most are surface scatters with no or little subsurface expression.

## **Voids in Research**

Virtually nothing is known of Besant in western South Dakota as a distinct cultural development, if the projectile point actually represents a particular culture. In eastern South Dakota, Besant-like projectile points are sometimes part of the Sonota complex of the Woodland tradition. That said, some Besant points in the White River Badlands occur alongside Woodland pottery and many Besant sites east of the Missouri River lack pottery.

## **Research Topics**

1. Does Besant represent a distinct culture or is it only a broad horizon style that cuts across cultural divisions?
2. Does Besant derive from an earlier tradition?
3. How can Besant projectile points be reliably distinguished from the much earlier Hawken points? Is Besant the same both east and west of the Missouri River?
4. Is there a definable Besant cultural assemblage?
5. What is the relationship of Besant to Woodland tradition ceramics?
6. Is the Besant of the White River Badlands an eastern Woodland-derived development with related pottery types?
7. What does the occurrence of Besant projectile points in multiple-component sites indicate? Is the complex simply a continuation of old settlement and subsistence patterns?

## **Research and Management Goals**

Single-component sites and multiple-components sites with good vertical separation should be given priority in preservation and research in order to develop a clearer view of Besant cultural developments.

### **National Register Listings:**

None.

## **Archaeological Regions**

Black Hills, White River Badlands, Sandstone Buttes, Grand-Moreau Tablelands, Belle Fourche, Upper James, Bad-Cheyenne, South Fork Cheyenne, Grand-Moreau, Big Bend, Middle James, Lower James, Upper Big Sioux, Yankton, Fort Randall, Missouri Coteau, Prairie Coteau

## **Sites**

39BE29/39BE94/39BE95, 39BK5, 39BK35, 39BK183, 39BK195, 39BK200, 39BK266, 39BN24, 39BO67, 39BO118, 39BT10, 39BU44, 39BU108, 39BU184, 39BU236, 39BU244, 39BU246, 39CA189, 39CD43, 39CO88, 39CO97, 39CO152, 39CO388, 39CU154, 39CU773, 39CU795, 39CU3624, 39CU3755, 39CU4165, 39DA88, 39DA115, 39DE38, 39DW147, 39DW150, 39DW188, 39FA14, 39FA707, 39FA1361, 39FA1784, 39HN74, 39HN98, 39HN176, 39HN360, 39HN423, 39HN470, 39HN649, 39HN727, 39HN1129, 39HN1217, 39HN1382, 39HU97, 39JK35, 39JK40, 39JK62, 39KB41, 39KB44, 39LA65, 39LA726, 39LA1217, 39LK39, 39LM259, 39LN72, 39MD391, 39MD393, 39MH69, 39MP13, 39MP15, 39MP21, 39PE112, 39PE116, 39PE159, 39PE200, 39PE220, 39PE227, 39PE299, 39PE414, 39PN85, 39PN96, 39PN103, 39PN114, 39PN128, 39PN219, 39PN286, 39PN449, 39PN748, 39PN754, 39PN1280, 39PO58, 39SH80, 39SH96, 39SH228, 39SH314, 39SH315, 39SL357, 39ST80, 39KY41, 39ZB86

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Johnson and Johnson 1998; Kornfeld *et al.* 2010.

## **Woodland Tradition Phases and Complexes**

### **Contexts**

Twelve contexts and subcontexts are outlined for the Woodland period: Early to Middle Woodland including the Fox Lake phase; Middle Woodland, including the Besant complex, Sonota complex, Valley phase, and unassigned Middle Woodland; and Late Woodland, including unassigned Late Woodland, Lake Benton phase, the Arvilla complex, the Loseke Creek phase, the Randall phase, Great Oasis complex, and Blackduck-Sandy Lake complexes.

## **Environmental Setting**

Sites occur in all settings.

## Overview

The Woodland or, as it is often termed, Plains Woodland, is characterized by thick-walled, sacklike conical pottery vessels, various corner- and side-notched dart points, and burial mounds (Johnson and Johnson 1998). Pottery vessels were often cord-roughened (outer surface impressed with a cord-wrapped paddle). Over time, the vessels take on a more globular shape and more elaborate decoration. The presence of Pacific and Gulf Coast marine shell, copper, and obsidian in Woodland sites bears witness to participation in far-flung trade networks, while the construction of large burial mounds suggests that many families or hamlets cooperated in ceremonial activities. As the Woodland term implies, rock art, pottery styles, and mound-building show definite influences from eastern North America, while projectile point types are essentially identical to examples from the western Plains and Rockies. Because most of the archaeology projects in central and eastern South Dakota focused on large Plains Village sites, little is known of Woodland house and settlement types (Tiffany 2007a:6). Houses appear to have included simple post-and daub structures and tipis like those in use in historic times. It is unclear at present whether Woodland people in South Dakota lived in hamlets, villages, or individual homesteads. Later sites have some evidence for horticulture, such as bison scapula hoes, but in general Woodland subsistence was a complex mix of bison hunting and use of many kinds of wild plant foods. South Dakota so far lacks sites assigned to the Early Woodland period, although such finds can be anticipated in the Northeastern Lowlands region (Gregg 1990; Ludwickson *et al.* 1981). Known sites are generally assigned to the Middle Woodland and Late Woodland periods.



Figure 30. Excavation of Swift Bird Mound, 39DW233, 1962 (SI-RBS photo on file at ARC).

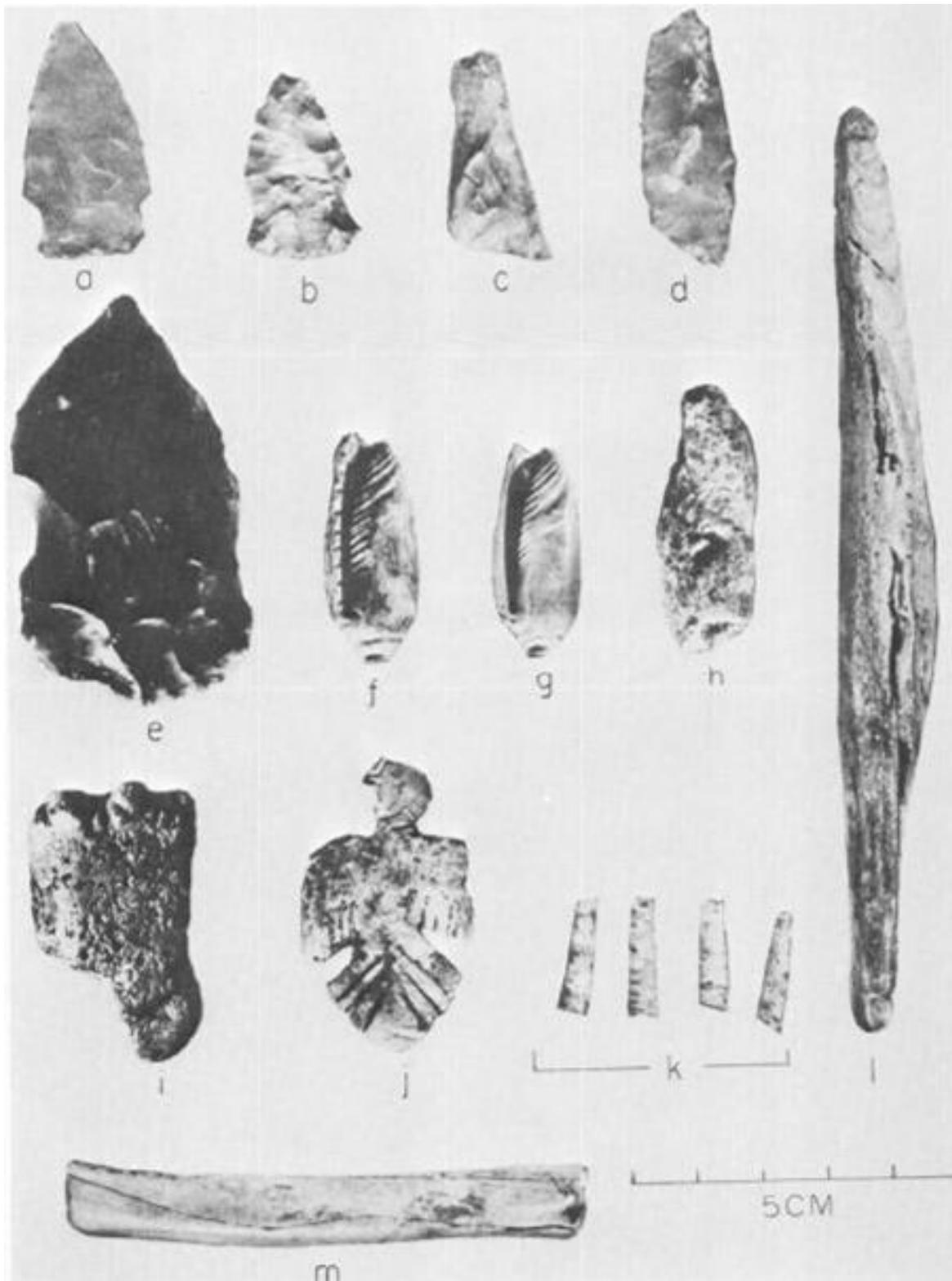


Figure 31. Miscellaneous artifacts from Swift Bird Mound 1, 39DW233: a-b, projectile points; c, chipped flake, d-e, knives; f,g, k, shell beads; j, shell pendant; l, shell atlatl weight; m, bone bead; h-i, fossils (Neuman 1975: Plate 13).

## Temporal Boundaries

500 BCE to 900 CE, 2500 to 1100 BP.

## Spatial Boundaries

Entire state, particularly eastern South Dakota.

## Property Types

Short-term camps, base-camps, stone circles, burial mounds, bison trapping sites.

## Locational Characteristics

Primarily along, and east of, the Missouri River.

## Context Definition

Woodland sites are recognized from the presence of burial mounds and/or distinctive pottery types. Woodland pottery is elongate (bag-shaped) with conoidal bottoms and frequently with cord-roughened exterior surfaces. Woodland sites also contain corner-notched projectile points.

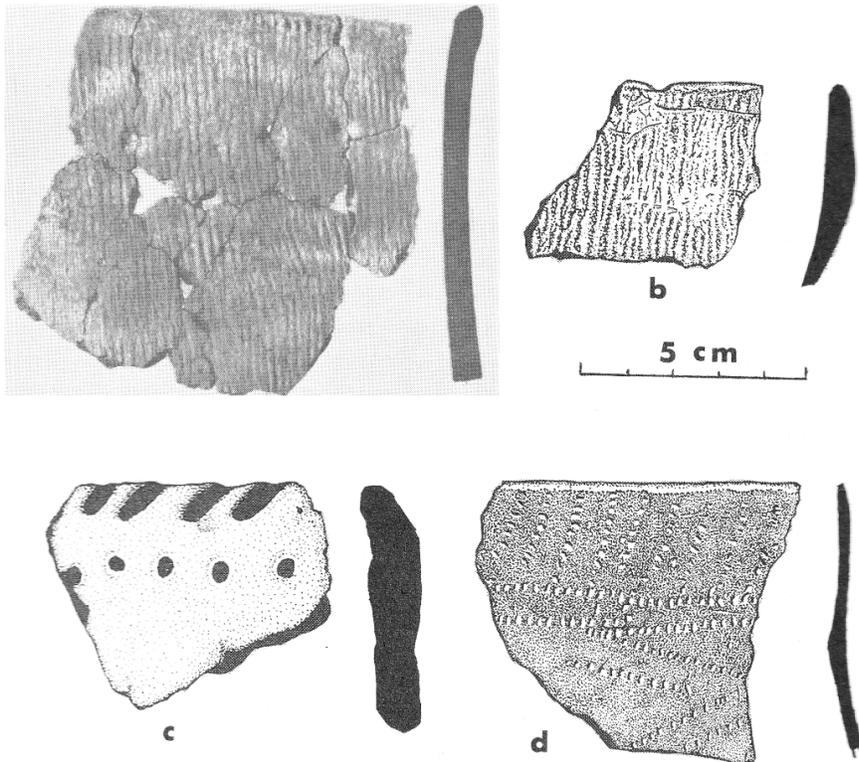


Figure 32. Woodland pottery sherds from South Dakota: a, Valley Cord-Roughened, 39ST9; b-d Late Plains Woodland types from 39GT19 (b and d) and 39RO5. (Drawings from Johnson and Johnson 1998:220).

## **Condition**

Many burial mounds in South Dakota have been looted or leveled by plowing. The larger occupation sites often mixed Woodland and Plains Village deposits. Smaller sites are more likely to contain only Plains Woodland materials. There is little doubt that significant Woodland components were destroyed by construction of hydroelectric dams and plants along the Missouri River. Salvage excavations gave priority to the more visible Plains Village components and frequently did not continue down through earlier deposits.

## **Voids in Research**

Little is known of the origins or nature of Woodland culture in South Dakota apart from the practice of constructing burial mounds. Almost all research has focused on the mounds. A more detailed picture of Woodland life in the state will require identification and excavation of camps, settlements, and resource processing sites.

## **Research Topics**

1. Taxonomic and typological problems.
2. A geomorphological approach to site location may be useful in correlating Woodland habitation sites and mound groups.
3. How are various Woodland complexes related to one another?
4. What are the subsistence strategies of the Prairie Coteau Woodland populations? Were they bison hunters, or hunter-gatherers adapted to prairie lake exploitation, or both? Examining single component sites in the Prairie Coteau Region is important because most sites in that region contain multiple components without stratigraphic separation.
5. Document the change from Archaic to Woodland patterns. Is the introduction of ceramics definitely a marker of culture change?
6. Did the Woodland pattern spread from a single point of origin, or did it develop in more than one place?
7. How did mortuary practices change over time and by region?
8. What do nonlocal artifacts indicate about trade with other regions?
9. What is the relationship between Woodland and Great Oasis?
10. What were the processes by which economies evolved from an Archaic hunting and gathering base to a horticultural-foraging system?
11. What historical processes led some societies to develop more elaborate "villager" patterns than others?

## **Research and Management Goals**

The remaining burial mounds and intact buried Woodland sites should be given high priority for protection and research. Although such sites are common in the eastern half of the state, very few have survived intact. Data collected from mound sites should be reanalyzed using more advanced methods.

## **National Register Listings**

39BE23, 39BE46, 39BE48, 39BE54, 39BE55, 39BE57, 39BE62, 39BE64, 39BF10, 39BF233, 39BF234, 39BF235, 39HU89, 39HU221, 39SP8, 39SP11, 39ST225, 39ST239

## **Archaeological Regions**

Black Hills, Grand-Moreau, Grand-Moreau Tablelands, Central Cheyenne, Bad-Cheyenne, White River Badlands, Big Bend, Fort Randall, Middle James, Upper James, Prairie Coteau, Lower Big Sioux, Upper Big Sioux, Northeast Lowlands, Yankton

## **Unassigned Woodland Sites**

39BE94, 39BE108, 39BE109, 39BE110, 39BE115, 39BF3, 39BF4, 39BF10, 39BF44, 39BF49, 39BF101, 39BF201, 39BF208, 39BF209, 39BF213, 39BF216, 39BF219, 39BF223, 39BF225, 39BF229, 39BF233, 39BF234, 39BF235, 39BF241, 39BF270, 39BK3, 39BK5, 39BK9, 39BK17, 39BK101, 39BK102, 39BK103, 39BK229, 39BN1, 39BN2, 39BN3, 39BN4, 39BN6, 39BN10, 39BN11, 39BN12, 39BN13A, 39BN14, 39BN16, 39BN25, 39BN27, 39BN28, 39BN29, 39BN74, 39BN86, 39BN87, 39BN89, 39BN98, 39BN99, 39BN103, 39B041, 39B0103, 39B0201, 39B0209, 39BR17, 39BR101, 39CA15, 39CA101, 39CA106, 39CA113, 39CA117, 39CA206, 39CD2, 39CD6, 39CD12, 39CD23, 39CH4, 39CH8, 39CH9, 39CH20, 39CH27, 39CH45, 39CH52, 39CH116, 39CH141, 39CH144, 39CH154, 39CH207, 39CH210, 39CH212, 39CK1, 39C064, 39CU185, 39CU1048, 39DA4, 39DA7, 39DA10, 39DA13, 39DA14, 39DA25, 39DA27, 39DA28, 39DA29, 39DE1, 39DE5, 39DE6, 39DE11, 39DE12, 39DE13, 39DE18, 39DE23, 39DE24, 39DE60, 39DV20, 39DW238, 39DW240, 39DW242, 39DW255, 39DW256, 39FK1, 39FK12, 39FK15, 39FK23, 39FK25, 39FK48, 39FK51, 39FK54, 39GR19, 39GT1, 39GT5?, 39HD2, 39HD37, 39HD38, 39HD59, 39HL3, 39HL4, 39HN372?, 39HS3, 39HS7, 39HS13, 39HS17, 39HS25, 39HS32, 39HS42, 39HS43, 39HS47, 39HT2, 39HT3, 39HT4, 39HT10?, 39HT14, 39HT16, 39HT17, 39HT20, 39HT22, 39HT23, 39HT24, 39HT26, 39HT27, 39HT29, 39HT30, 39HT31, 39HT33, 39HT42, 39HT64, 39HT78, 39HT83, 39HT85, 39HT86, 39HT88, 39HT201, 39HT202, 39HU48, 39HU83, 39HU89, 39HU102, 39HU173, 39HU205/39HU212, 39HU241, 39HU221, 39HU246, 39HU250, 39JK63, 39JK68, 39JK111, 39JK119, 39KB1, 39KB2, 39KB3, 39LK1/39LK2, 39LK201, 39LK7, 39LK12, 39LK15, 39LK18, 39LK36, 39LM7, 39LM26, 39LM27, 39LM57, 39LM81, 39LM84, 39LM144, 39LM149, 39LM161, 39LM201, 39LM221, 39LM227, 39LM235, 39LM238, 39LM261, 39LM299, 39LN310, 39LN6, 39LN8, 39LN9, 39LN28, 39LN43, 39MH2, 39MH3, 39MH4, 39MH5, 39MH6, 39MH11, 39MH21, 39MH27, 39MH29, 39MH32, 39MH34, 39MH74, 39MH77, 39MH201, 39MH203, 39MK1, 39ML1, 39ML2, 39ML3, 39ML4, 39ML5, 39ML8, 39ML12, 39ML13, 39ML14, 39ML15, 39ML16, 39ML17, 39ML18, 39ML20, 39ML21, 39ML22, 39ML23, 39ML24, 39ML25, 39ML26, 39ML27, 39ML28, 39ML29, 39ML31, 39ML32?, 39ML41, 39ML45, 39ML46,

39ML48, 39MN5, 39M01, 39M02, 39M03, 39R022, 39R026, 39R029, 39R039, 39R068, 39R070, 39R073, 39R076, 39R0301, 39SB1, 39SB3, 39SB4, 39SB5, 39SB11, 39SB12, 39SB15, 39SB16, 39SB18, 39SB31, 39SH47, 39SH137, 39SL312, 39SP2, 39SP3, 39SP6, 39SP8, 39SP12, 39SP15, 39SP17, 39SP19, 39SP24, 39SP37, 39SP46, 39SP51, 39SP101, 39SP146, 39SP149, 39SP181, 39SP187, 39ST48, 39ST80, 39ST112, 39ST225, 39ST239, 39UN1, 39UN9, 39UN10?, 39WW22, 39WW46, 39WW56, 39WW58, 39YK1, 39YK2, 39YK3

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Johnson and Johnson 1998

## **Early-Middle Woodland/Fox Lake Phase**

### **Overview**

Early to Middle Woodland / Fox Lake Phase sites occur in Western Minnesota and eastern North Dakota (Gregg 1990; Ludwickson *et al.* 1987); however, only one Fox Lake component has been identified in South Dakota. This was at 39LK50, a large, multiple-component village site in the Upper Big Sioux region (Hanenberger and Gilbert 2003). Six sherds with sand temper, indicative of the Fox Lake phase, were found on the surface and in test-excavations in a mixed cultural deposit. It was not possible to link that small ceramic assemblage to any features. One Fox Lake sherd from the neck of a vessel was decorated with parallel trailed lines.

The Naze site on the James River in North Dakota had an Early Woodland component dated around 500 BCE (2500 BP) (Gregg 1990). This component had distinctive pottery that was thick, cord-roughened and decorated with bosses and trailed lines. This pottery is similar to Fox Lake Trailed from Minnesota, North Bay from Wisconsin, Crawford from western Iowa, and Black Sand Incised from western Illinois. Other artifacts from this early component were projectile points similar to Pelican Lake and Besant forms, daub, chipped-stone tools and debris, fire-cracked rock, animal bone, and charcoal. Eight post holes and charred post fragments seem to represent central supports for a roof with sloping walls on four sides; however, the exact form of the structure could not be determined definitely. The structure contained a small cache of bone tools and tool blanks. Bone scrap at the site was bison, with small amounts of elk, canid, and beaver. Wild plant remains included chokecherry, wild grape, chenopod, and marsh elder. This site provides a picture of an early use of a non-portable house structure, a highly varied diet, and a general affiliation with cultures to the east.

The report of investigations at the lone site in South Dakota with Early Woodland/Fox Lake ceramics (Hanenberger and Gilbert 2003:83–84) provides a useful overview of the phase:

Fox Lake sites are reported to be small villages of several households and campsites that are situated in the prairie lakes region on lake islands and peninsulas or on terraces of the Minnesota River (Anfinson 1997:70–71). Subsistence appears to be that of a broad-based adaptation to the prairie lakes region with the exploitation of grassland resources such as bison and the exploitation of shallow lake resources such as fish and muskrat.

Fox Lake pottery is sand tempered (Anfinson 1997:59). Vessels are moderate to small conoidal to subconoidal jars. Rims are everted to slightly inverted. Rim lips vary from flattened to rounded. Exterior surface treatments are usually bold cord-marking oriented vertically to the vessel wall. Walls are thick, ranging from 6 mm to 12 mm. Decorations are present on about two-thirds of the vessels. Trailed lines on the rim and neck and, occasionally, on the shoulder are a hallmark of Fox Lake ware. Lines are oblique, horizontal, or a combination of the two. Bosses or punctates in a single row below the lip are also common. Cord-wrapped stick or dentate impressions, which are found on the rim interior and lip, are less common. Rims sometimes have smoothed surface treatments. Major types include Fox Lake Trailed, Fox Lake Vertical Cord-marked and Fox Lake Horizontal Cord-marked. The La Moille Thick type in southeastern Minnesota is closely related to Fox Lake ceramics.

The Fox Lake phase covers a considerable time span, from 200 B.C. to A.D. 700, or from Early through the Middle Woodland periods. Benn (1990:118) has suggested early, middle, and late subdivisions within Fox Lake based on ceramic attributes. Early Fox Lake tends to have coarser exterior cord-marking. Vessel walls are thick (averaging 8.7 mm). Trailed lines are wide, averaging 2.9 mm, and are more poorly executed than on later examples of Fox Lake pottery. Rim and body motifs consist of rows of slashes or parallel traileed zones. Other decorations are lip notching and a row of bosses on the upper rim. Trailed lines are narrower (averaging 1.7 mm) and more carefully executed in middle Fox Lake ceramics. Cord-marking is slightly less coarse, patchy and some smoothed-over-cordmarking occurs. Chevrons, intersecting lines (crosshatching and filled triangles) and zones of punctates are included with earlier designs. Cord-wrapped stick impressions appear on the interior of rims. Trailed lines become even narrower (averaging 1.5 mm), and traileed motifs are more complex in late Fox Lake ware. Punctates, as a design technique, appear for the first time. Vessel rims are more curved (everted), and vessels wall become thinner (averaging 6.4 mm). Overall, the trend from early to late Fox Lake pottery is toward a finer temper, more curved rim profile, thinner vessel walls, less pronounced cord-marking, and more smoothed-over-cordmarked surfaces (Anfinson 1997:60).

Fox Lake ceramics are believed to have derived from Early Woodland ceramics farther to the east; e.g., Black Sand Incised and Marion Thick. Havana and Hopewell influences are almost absent in the Fox Lake phase. In general, projectile points are stemmed and side-notched types. Burial practices of the Fox Lake phase are unknown, and there is no indication that burial mounds are affiliated with this phase (Hananberger and Gilbert 2003:83–84).

## **Environmental Setting**

Prairie lakes in glaciated regions.

## **Temporal Boundaries**

2200 to 850 BP

## **Spatial Boundaries**

Unknown, but probably limited to the southeastern portion of the state.

## **Property Types**

Unknown.

## **Locational Characteristics**

Glaciated regions along the South Dakota-Minnesota border.

## **Context Definition**

Northern Great Plains archaeologists tend to categorize the Fox Lake Phase as Middle Woodland (Anfinson 1979:79; Gibbon and Caine 1980; Hudak 1974, 1976), but some suggest it began during Early Woodland (Gregg 1990; Ludwickson *et al.* 1981).

## **Voids in Research**

Virtually nothing is known of this phase in South Dakota.

## **Research Topics**

1. What is the distribution of Fox Lake sites in South Dakota?
2. What is the age of Fox Lake in South Dakota? Does it represent an Early Woodland development?
3. What were the settlement, subsistence, and social organization patterns of the Fox Lake phase in South Dakota?
4. What is the relationship of this phase to early Archaic and later Woodland cultures in the state?

## **Research and Management Goals**

The lone Fox Lake site in South Dakota, 39LK50, has been disturbed by installation of recreational facilities in Lake Herman State Park. Protection of this important multiple-component site should be given high priority, as it has the potential to address many questions regarding the Archaic to Woodland transition in eastern South Dakota. It may be worthwhile to review ceramic assemblages from nearby sites to see if additional Fox Lake material can be identified.

## **National Register Listings**

None

## **Archaeological Regions**

Upper Big Sioux

## **Fox Lake Site**

39LK50

## **Bibliography**

Anfinson 1997; Benn 1990; Hanenberger and Gilbert 2003

## **Woodland Besant**

### **Overview**

The Woodland Besant appears to be an eastern variant of the western Besant bison-hunting cultures (Johnson and Johnson 1998). It is characterized by general Middle Woodland traits, such as the presence of thick-walled, conical ceramic vessels, burial mounds, and large side-notched atlatl points. The pottery is grit-tempered and cord-roughened, with minimal decoration, apart from occasional vessels with bossing below the lip.

A large test unit excavated at the Lafferty Site, 39LM259, on the bank of the Missouri River, indicated the presence of two components: a Protohistoric Dakota or Lakota camp and a Middle Woodland occupation site (Haberman 1985b). The Woodland level contained thick cord-marked ceramics, corner-notched and Besant points, bone tools, scrapers, hammerstones, manos, retouched flakes, fire-cracked rock, and charcoal. Two pits or midden features occurred in the Woodland level. The first of these yielded a radiocarbon date on charcoal of  $1710 \pm 100$  BP and one on bone of  $1540 \pm 70$  BP. The other feature gave a date on bone of  $1490 \pm 80$  BP. These finds suggest a base camp or village; however, the excavation was too limited to detect house remains, if any.

The distribution of Besant sites along the Missouri River suggests a pattern of summer camps or villages on hill tops and high terraces, with winter camps in the river bottoms. Some stone circle sites in eastern South Dakota contain Besant projectile points, suggesting use of tipis or similar portable shelters at this time.

### **Environmental Setting**

Varies with site function.

### **Temporal Boundaries**

The Besant of eastern South Dakota is estimated to date between 100 and 600 CE, or 1900 to 1400 BP.

### **Spatial Boundaries**

Entire state.

## **Property Types**

Hunting and special-activity camps, base camps or occupation sites, mounds.

## **Locational Characteristics**

Primarily located along the Missouri River and in eastern South Dakota; however, some Besant sites with ceramics are found in the White River Badlands and Black Hills. Sites along the Missouri trench are commonly found on hilltops and on terraces (Johnson and Johnson 1998:219).

## **Condition**

Many of the larger occupation sites contain mixed Woodland/Plains Village deposits; smaller sites are less likely to be mixed.

## **Research Topics**

1. What ceramic wares are associated with Besant?
2. Is Besant simply a projectile point type horizon or a set of related cultural developments?
3. How do sites vary from south to north and east to west?
4. What is the relationship between the Sonota burial complex and Woodland Besant?
5. What is the relationship between the Besant of the Northwestern Plains and that of eastern South Dakota?
6. To what extent were Woodland Besant people practicing horticulture? Did they cultivate wild or domesticate crops? Were those part of a trade system?
7. Woodland Besant sites contain traded materials such as obsidian. What was the extent and role of long-distance trade in this cultural complex?

## **Woodland Besant Sites**

39BE29/39BE94/39BE95, 39BK5, 39BK39, 39BK35, 39BK183, 39BK195, 39BK200, 39BK266, 39BN24, 39BO67, 39BO118, 39CA189, 39CD43, 39CO88, 39CO97, 39CO152, 39CU154, 39DA88, 39DA115, 39DE38, 39DW147, 39DW150, 39DW188, 39JK35, 39KB41, 39KB44, 39LK39, 39LM259, 39LN72, 39MH69, 39MP13, 39MP15, 39MP21, 39PO58, 39SH80, 39SL357, 39ST80, 39YK41

## **Bibliography**

Johnson and Johnson 1998

# **Sonota Burial Complex**

## **Overview**

Most researchers view the Sonota “complex” as part of the Besant complex or phase: specifically, the remains of Besant or Middle Woodland burial and ceremonial practices as they took place in the Missouri and James River Valleys of North and South Dakota (Johnson and Johnson 1998; Neuman 1975). Sonota mounds contain a rectangular subfloor tomb in which dismembered bodies and secondary burials were placed. Red ocher was liberally placed over the bones. Grave goods include objects that could have been obtained only in trade: obsidian, Gulf Coast conch shell, *Olivella*, *Marginella*, and *Dentalium*, as well as pottery and artifacts with Hopewellian overtones such as carved human palates and worked bear maxillae (Neuman 1975). The pottery has more complex decorations than most Northern Plains Middle Woodland and is reminiscent of some Hopewell ceramics. In sum, the mounds combine Hopewellian construction, burial treatment, and distinctive artifacts with an adaptation of the ceremony to include bison carcasses in the mound fill (Johnson and Johnson 1998:220–221).

In short, Sonota ceramics and the practice of constructing mound with log-covered subfloor pits used for secondary burials echo more elaborate Hopewell traits from the Ohio valley, but many other Hopewell characteristics are not present in the Sonota complex (Hall and Hall 2004). The Sonota/Woodland Besant combines these eastern influences with projectile points resembling those of the Northwestern Plains Besant and with an emphasis on bison in ceremonial contexts, as well as in foodways.

## **Environmental Setting**

Ridgetops and stream terraces in eastern South Dakota and along the Missouri River.

## **Temporal Boundaries**

This burial complex is estimated to date between 100 and 600 CE, or 1900 to 1400 BP.

## **Spatial Boundaries**

Major river valleys between and including the Missouri and James.

## **Property Types**

Burial mounds.

## **Locational Characteristics**

Mounds were generally constructed on high points in the landscape.

## **Context Definition**

This sub-complex is recognized by the distinctive form and content of the burial mounds.

## **Condition**

Most of the mounds have been destroyed or damaged through agricultural activity or looting. A few intact sites still exist.

## **Voids in Research**

Ceramic typology needs to be more securely tied to the burial mound complex. The burial mounds need to be more securely related to other kinds of Besant/Middle Woodland sites, such as camps and houses.

## **Research Topics**

1. What are the origins of the Sonota complex? When did its distinctive mortuary practices develop?
2. What is the relationship between the Sonota complex of North and South Dakota and the Hopewell complexes of areas farther to the south and east?
3. What can the contents of the burial mounds, especially trade goods and bison carcasses, tell us about the belief system and economic system of the Middle Woodland period?

## **Research and Management Goals:**

The few remaining intact burial mounds should receive high priority for preservation. Previously acquired data from these sites deserves additional study, bearing in mind the sensitive nature of the sites as human burial places.

## **National Register Listings**

None.

## **Archaeological Regions**

Sites listed as “Sonota” in the state site inventory are limited to these regions: Big Bend, Grand-Moreau Tablelands, Bad-Cheyenne. Other burial mound sites in the Missouri, James River, and adjacent regions are assumed to contain additional Sonota complex sites.

## **Sonota Sites**

39BF2, 39BF102, 39DW242, 39LM161, 39ML256, 39PE147, 39ST80

## **Bibliography**

Neuman 1975

# **Valley Variant**

## **Overview**

The state site inventory lists only one site as containing Valley variant material. This is the large, multiple-component village site known as the Gavin's Point site, 39YK203. The site is on a prominent bluff of the Missouri River. Limited excavations at the site unearthed Late Woodland, Great Oasis, and historic Yankton components (Blakeslee and O'Shea 1983; Hall and Hall 2004; Archaeological Research Center records). The characteristic pottery, Valley Cord Roughened, has diagonal cord-marking, a conoidal base, cord-wrapped paddle impressions, and sometimes decoration consisting of bosses, punctates, cord-wrapped paddle edge impressions, and incising (Benn 1990; Hall and Hall 2004). This pottery shares some decorative traits with wares from the Renner site, a Kansas City Hopewell site in Missouri, as well as less pronounced similarities to Valley Cord-Roughened from the type site in Nebraska (Hall and Hall 2004:24). These ceramics date between 200 and 700 CE. As with the Sonota burial complex, the mounds associated with Valley Cord Roughened pottery indicate some minor influence from Hopewell cultures to the east and south (Tiffany 1978:177–178). More locally, the Arp Site (39BR101) excavator noted similarities between Loseke Creek variant ceramics (Ellis and Scalp Creek wares) and Valley phase pottery (Hurt 1967:48–49).

## **Environmental Setting**

Glaciated eastern South Dakota.

## **Temporal Boundaries**

Uncertain, but probably 200 to 350 CE, or 1800 to 1650 BP.

## **Spatial Boundaries**

Southeastern South Dakota in the Missouri River valley.

## **Property Types**

Village; others unknown.

## **Locational Characteristics**

Missouri River terraces.

## **Context Definition**

This phase or complex is defined on the basis of ceramics.

## **Voids in Research**

It is not clear whether the Valley variant as defined for the Central Plains exists in South Dakota. If it is present, then its age, distribution, cultural affiliation, and role in local cultural developments and trade networks all need to be defined.

## **Research Topics**

1. Do Valley phase materials occur in South Dakota at sites other than Gavin's Point?
2. What is the relationship of the local version of the Valley phase to the better defined Valley phase of Nebraska?
3. What is the relationship of Valley materials to the Loseke Creek variant?

## **Research and Management Goals**

Establish the presence or absence of this phase in South Dakota and its relationship to other regions.

## **National Register Listings**

None.

## **Archaeological Region**

Yankton

## **Valley Phase Site**

39YK203

## **Bibliography**

Blakeslee and O'Shea 1984; Hall and Hall 2004

## **Unassigned Middle Woodland**

### **Overview**

The Middle Woodland of South Dakota is marked by the first occurrence of pottery in sites, as well as the appearance of a variety of medium-sized, corner- and side-notched dart points. The earliest burial mounds in the state also belong to this period. These are generally conical or dome-like mounds constructed over a subsurface pit containing primary and secondary burials. The social organization of Middle Woodland groups is not clear; but the apparent use of small post-supported houses and tipis suggests that households were limited to nuclear family groups. Trade items such as Gulf Coast shell and obsidian from Idaho and Wyoming apparently were treasured,

as they frequently occur in the burial sites. Evidence for horticulture is thus far lacking for this period, but people were consuming wild berries and seeds of grasses and chenopods. Bison hunting seems to have been an important facet of Middle Woodland life, both as subsistence and as a focus of ceremonial activity.

The only Middle Woodland house thus far excavated was at the La Roche site, 39ST9, on a river terrace in the Big Bend region of the Missouri River. (Hoffman 1968). This was an oval structure with support posts arranged around the outside of a central living space, measuring about 23 by 27 feet. A hearth was placed in the rear center of the house. The excavator speculated that the superstructure consisted of bark sheets or mats held in place by small logs with the branches left on, leaned against the covering. The house contained thick-walled, grit-tempered, cord-roughened pottery. Unlike the later Plains Village dwellings, it had no interior storage pits.

### **Environmental Setting**

Sites occur in all settings.

### **Temporal Boundaries**

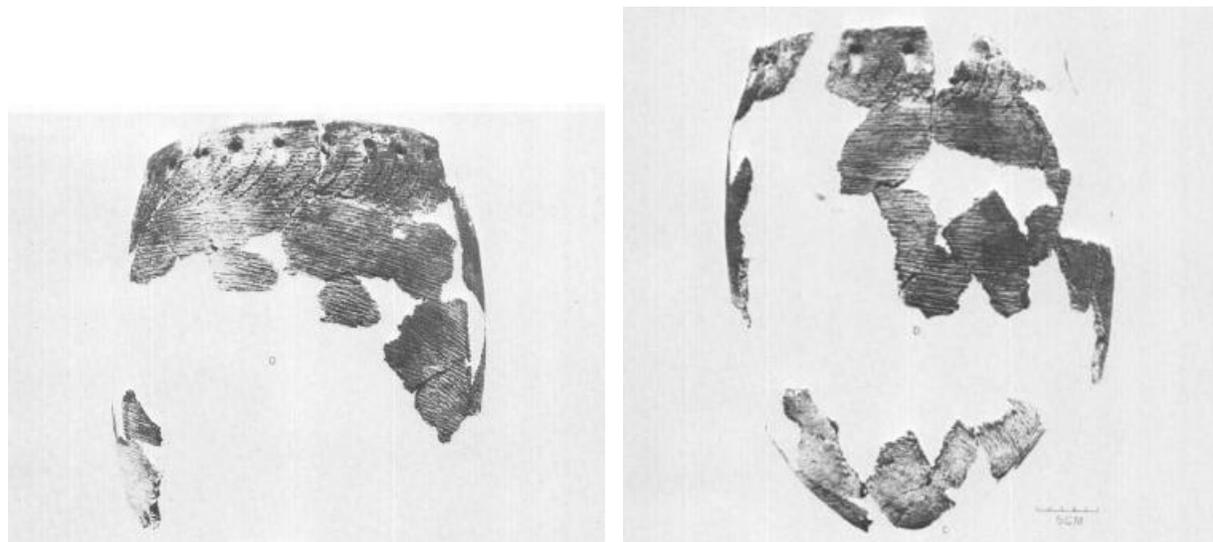
The Middle Woodland of the Northern Plains is dated at 100–900 CE, or 1900 to 1100 BP.

### **Spatial Boundaries**

Middle Woodland sites probably occur in all parts of the state, with concentrations along the Missouri and James rivers and in eastern South Dakota generally.

### **Property Types**

Surface scatters representing short-term hunting-gathering camps and special activity stations; stone circle sites; simple post-supported houses; burial mounds.



*Figure 33. Middle Woodland pots from the Stelzer Site, 39DW242 (SI-RBS photo on file at ARC)*

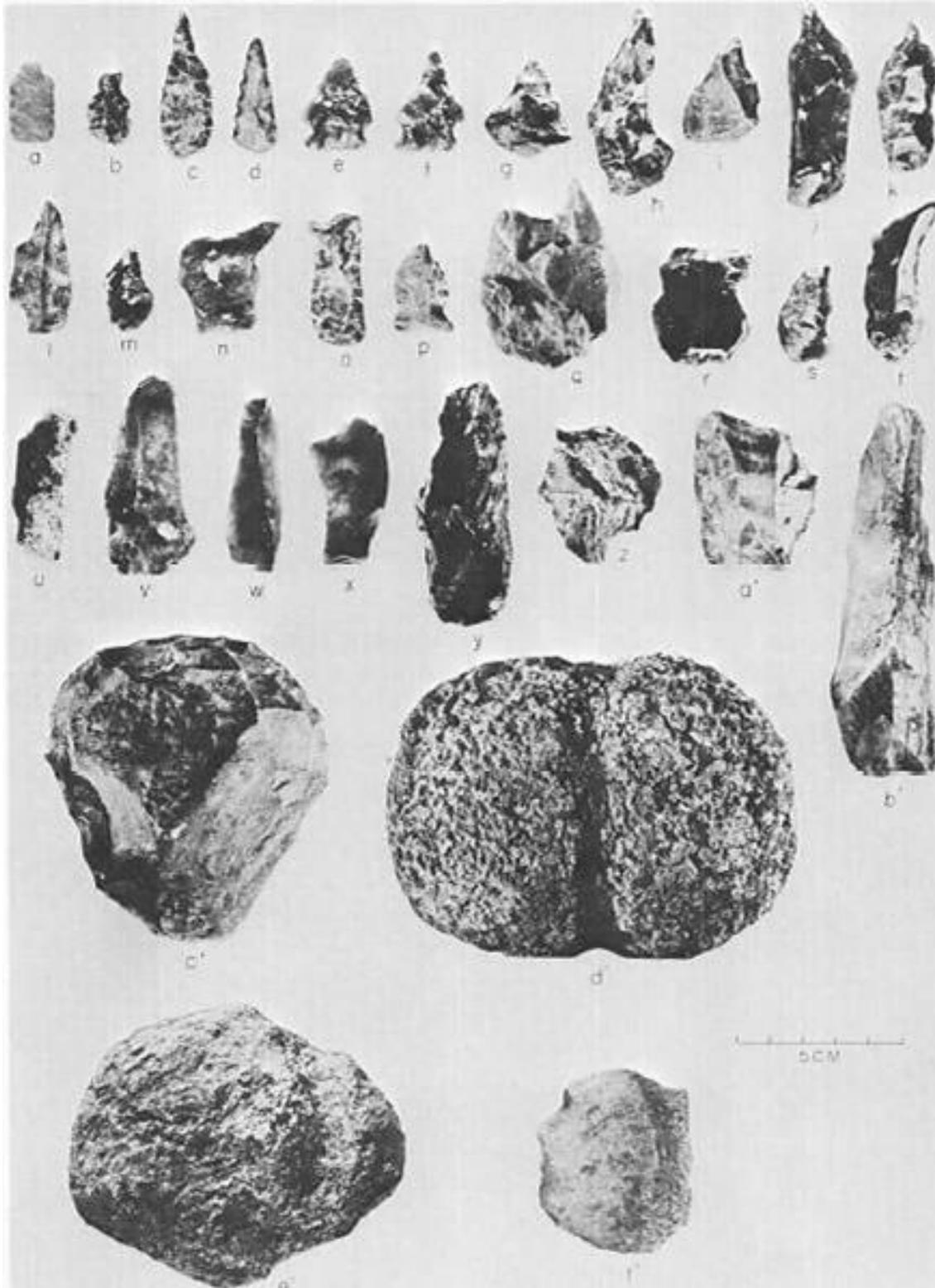


Figure 34. Miscellaneous stone tools, Stelzer Site, 39DW242: a-f, drills; g-p, gravers; q-s, notched flakes; t-w, utilized flakes; x-z, a<sup>1</sup>-b<sup>1</sup>, cores; d<sup>1</sup>-f<sup>1</sup>, mauls (Neuman 1975: Plate 10).



Figure 35. Projectile points, Stelzer Site, 39DW242 (Neuman 1975: Plate 7).

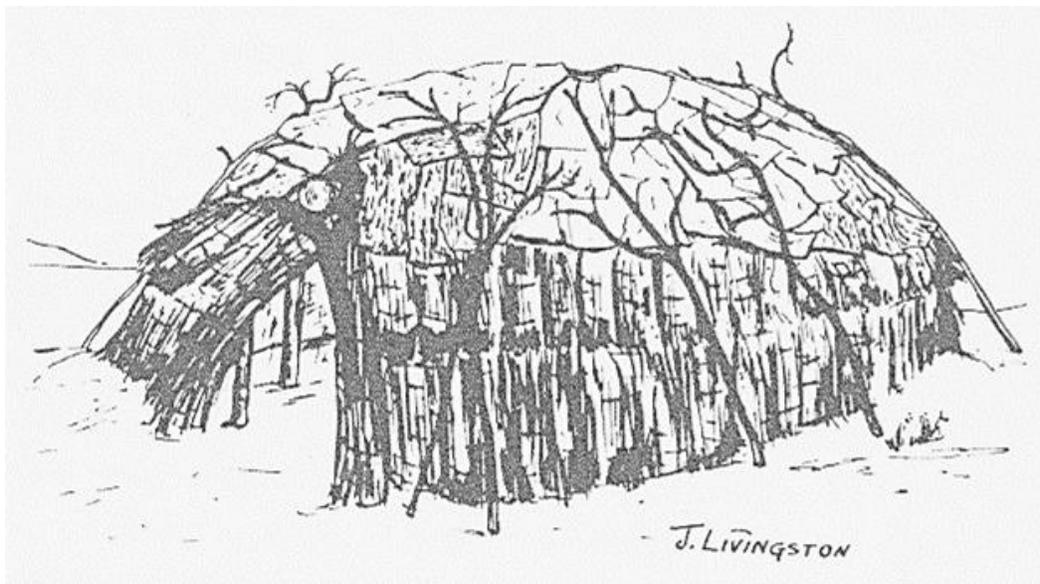
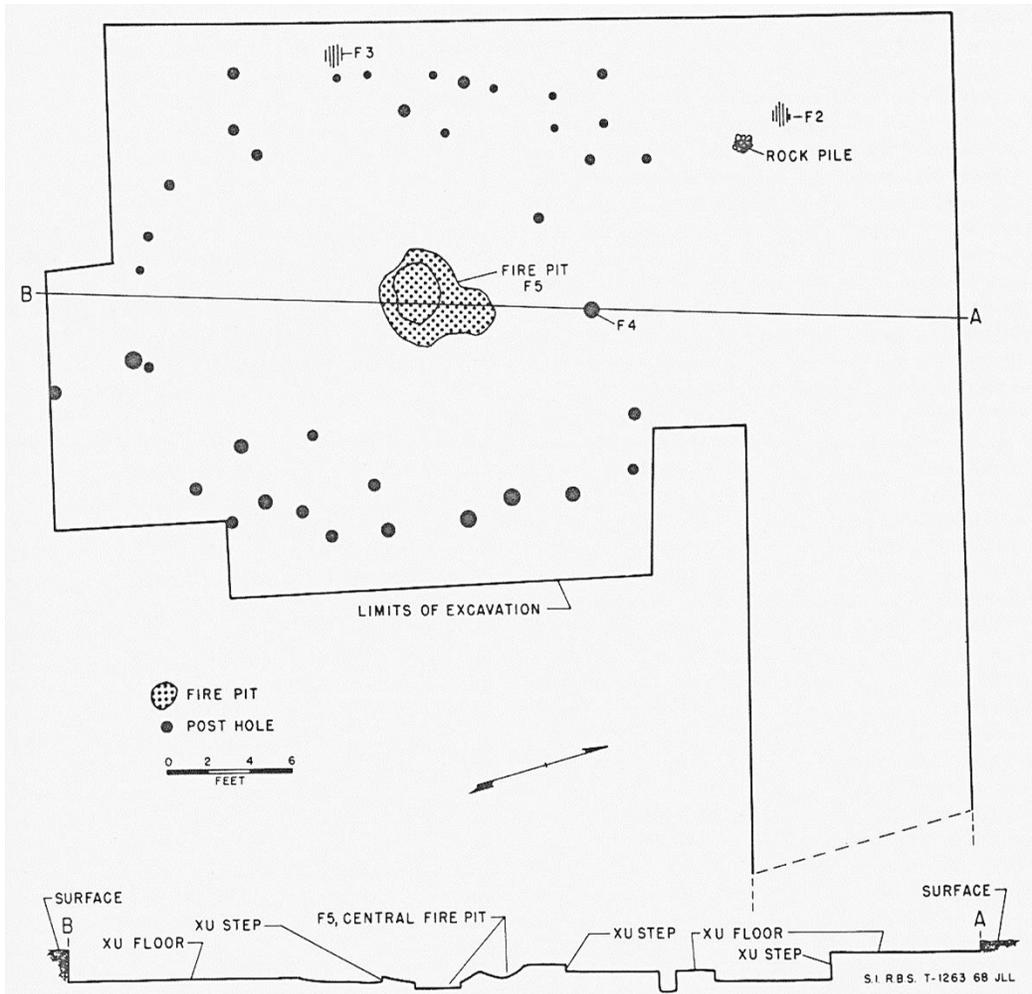


Figure 36. Plan, profile, and artist's reconstruction of Woodland house at Over's La Roche Site, 39ST9 (from Hoffman 1968).

## **Locational Characteristics**

Middle Woodland sites are concentrated in the eastern portion of the state and along the Missouri River, but occur throughout the state.

## **Context Definition**

Many of the unassigned Middle Woodland sites are burial mounds presumed to be of Woodland age and affiliation. Others contained Woodland ceramics that cannot be identified as belonging to a particular phase. Without question, many of these unassigned sites could be placed into a more specific phase or complex were they reanalyzed.

## **Voids in Research**

Apart from burial practices and the introduction of pottery, not much is known about Middle Woodland lifeways in South Dakota. Only one house has been excavated and described (Over's La Roche Site, 39ST9), and it is not clear whether such houses were placed in clusters or villages or hamlets. Some stone circle sites contain Woodland projectile points or ceramics, but the association between the artifacts and features is not certain.

## **Research Topics**

1. Do the unassigned Middle Woodland sites represent as-yet undefined local complexes or can they be placed into the known complexes?
2. What do these sites indicate about the shift toward horticulture and more permanent settlements?
3. What is the relationship between the Middle Woodland of the South Dakota and the Hopewell cultures of the Midwest?
4. Why did pottery come into production and use at this time? Does this reflect a shift in foodways?
5. Do the house features at the La Roche site and stone circle features indicate that different groups had different kinds of housing or do they represent seasonal patterns?
6. What does the practice of constructing burial mounds indicate about belief systems and social organization?
7. What goods were being exchanged for shell and obsidian? What do these trade networks indicate about the movement of peoples and cultural influences?

## **Research and Management Goals**

As noted, it may be possible to either link these sites to known complexes or to define local archaeological complexes based on existing and future data. Sites that may contain Middle Woodland or pre-ceramic components in eastern South Dakota and along the Missouri River will

be crucial to understanding the transition to semi-permanent villages and the complex social structures of the Protohistoric period. These sites should be given priority for preservation and research. Additional research on previously investigated sites can also help refine our understanding of the Archaic to Woodland and Woodland to Plains Village transitions.

## **National Register Listings**

39BE23, 39BE46, 39BE48, 39BE54, 39BE55, 39BE57, 39BE62, 39BE64, 39BF10, 39BF233, 39BF234, 39BF235, 39HU89, 39HU221, 39SP8, 39ST225

## **Archaeological Regions**

Grand-Moreau Tablelands, Grand-Moreau, Bad-Cheyenne, Big Bend, Fort Randall, Middle James, Upper James, Prairie Coteau, Lower Big Sioux, Upper Big Sioux

## **Unassigned Middle Woodland Sites**

39BE23, 39BE25, 39BE27, 39BE29, 39BE46, 39BE54, 39BE55, 39BE57, 39BE62, 39BE64, 39BF4, 39BF10, 39BF44, 39BF223, 39BF235, 39BF243, 39BK7, 39BN14, 39CH4, 39CH8, 39CH9, 39CH20, 39CH116, 39CH154, 39CH210, 39DA4, 39DA7, 39DA10, 39DA25, 39DA27, 39DA28, 39DA29, 39DE60, 39DW189, 39DW242, 39DW255, 39DA256, 39HU89, 39HU221, 39LM161, 39LN28, 39LN43, 39SL312, 39SP3, 39SP6, 39SP8, 39ST9, 39ST225, 39ZB72, 39ZB73

## **Unassigned Late Woodland**

### **Overview**

Late Woodland cultures of South Dakota continued the tradition of constructing burial mounds and retained much of the subsistence and settlement of the Middle Woodland period. This period saw two innovations: intensification of plant food production, including limited horticulture, and development of new pottery types. Burial mounds from this period take linear shapes, in addition to the earlier conical and ovoid forms. Pottery shifts from bag-like conical forms lacking necks and shoulders to slightly more spherical forms with somewhat constricted necks and more elaborate decoration. At this time, smaller projectile points similar to the Avonlea type appear, indicating the onset of use of the bow and arrow.

In the Dakotas, the Late Woodland appears to be largely a local development from the earlier Woodland cultures (Johnson and Johnson 1998:222; Tiffany 2007a). Sites contain cord-roughened pottery and some small, side-notched projectile points, probably for arrows.

### **Environmental Setting**

Sites occur in all settings.

## **Temporal Boundaries**

The Late Woodland of the Northern Plains is dated at 600–1000 CE, or 1400 to 1000 BP.

## **Spatial Boundaries**

Late Woodland sites probably occur in all parts of the state, with concentrations along the Missouri River and in eastern South Dakota.

## **Property Types**

Surface scatters representing short-term hunting-gathering camps and special activity stations; stone circle sites; burial mounds.

## **Locational Characteristics**

Late Woodland sites are concentrated in the eastern portion of the state and along the Missouri River, but occur throughout the state.

## **Context Definition**

Many of the unassigned Late Woodland sites are burial mounds that show differences from the Middle Woodland types. Other sites have been assigned to the period based on the presence of decorated, cord-roughened ceramics that cannot be identified as belonging to a particular phase or because they contain arrow points or identifiable Woodland points. It is likely that many of these sites can eventually be placed into existing phases as they are better studied or placed in new local phases as the latter are defined.

## **Condition**

Many Late Woodland sites have been damaged or destroyed by agriculture and construction activities. Some intact components exist in uncultivated plots.

## **Voids in Research**

Local complexes, if any, are not yet well defined. It is not known at present whether Late Woodland people lived in villages for part of the year, or how they managed mound construction projects and long-distance trade.

## **Research Topics**

1. Do the unassigned Late Woodland sites represent as-yet undefined local complexes or can they be placed into the known complexes?
2. What do these sites indicate about the shift toward horticulture and more permanent settlements?

3. What is the relationship between the Late Woodland of South Dakota and similar cultural developments in adjacent regions?
4. Can local pottery types be better described and linked to particular areas and time spans?
5. What kinds of houses or shelters were in use at this time? Do villages appear at this time?
6. What does the practice of constructing burial mounds indicate about belief systems and social organization?
7. Ludwickson *et al.* (1981:126–127) notes that the South Dakota sites Scalp Creek, Ellis Creek, Arp and White Swan may be defined as early Late Woodland upon reanalysis of their artifact assemblages. What are the ages and cultural affiliations of these sites?

## **Research and Management Goals**

As noted, it may be possible to either link these sites to known complexes or to define local archaeological complexes based on existing and future data. Sites that may contain Late Woodland or pre-ceramic components in eastern South Dakota and along the Missouri River will be crucial to understanding the transition to semi-permanent villages and the complex social structures of the Protohistoric period. These sites should be given priority for preservation and research. Additional research on previously investigated sites can also help refine our understanding of the Archaic to Woodland and Woodland to Plains Village transitions.

## **National Register Listings**

None

## **Archaeological Regions**

Black Hills, Grand-Moreau, Central Cheyenne, Bad-Cheyenne, White River Badlands, Big Bend, Fort Randall, Upper James, Prairie Coteau, Lower Big Sioux, Upper Big Sioux, Northeast Lowlands, Yankton

## **Unassigned Middle Woodland Sites**

39BK7, 39BN85, 39BR101, 39BR102, 39SH106, 39CH5, 39CH273, 39CL2, 39CO151, 39FA992, 39GT19, 39GT22, 39JK11, 39LM238, 39MH34, 39MH74, 39ST122, 39UN9, 39WW101, 39YK203, 39ZB71

## **Bibliography**

Johnson and Johnson 1998

# Lake Benton Phase

## Overview

The Lake Benton phase is a Late Woodland complex found in the eastern third of South Dakota and in adjacent portions of southwestern Minnesota and northwestern Iowa (Anfinson 1997:75–85). Lake Benton sites are fairly common in the Northeast Lowlands and Prairie Coteau regions. Ned Hanenberger and Miles Gilbert provide this summary:

Lake Benton subsistence and settlement patterns are not significantly different from the preceding Fox Lake phase. There is no evidence of horticulture. Unlike the Fox Lake phase, mortuary practices of Lake Benton people are believed to be burial mounds. This association, though, is largely indirect, based on temporal and spatial distributions of mounds and Lake Benton occupations. Interments typically occur as multiple secondary bundle burials within shallow pits. Funerary objects are few and, when found, are typically shell beads and pendants. Lake Benton pottery is tempered with crushed rock (i.e., grit). Rim exteriors are usually plain, with a few having vertical cord-marking (Benn 1990:120–122; Anfinson 1997:75–80). Vessels are large to midsize subconoidal jars with rims that are slightly outcurving to incurving or vertical. Vessel walls average from 6 to 7 mm in thickness. Below the rim exteriors, there is dense, fine, vertical cord-roughening (rolling). Remnant cord-marking is often visible on the vessel lip. Less common types of Lake Benton ware include undecorated types of Lake Benton [Vertical] Cord-Marked and Lake Benton Plain. Decorated vessels are more common and include the types Lake Benton Cord-wrapped Stick Impressed and Lake Benton Dentate Impressed. Decorations generally occur on plain rims and upper shoulders. Occasionally, there are cord-wrapped stick impressions on the interior rim and lip. Single rows of punctates around the rim exterior also sometimes occur in conjunction with cord-wrapped stick and dentate impressing. Designs include diagonal, vertical or horizontal impressions which are sometimes bounded. Projectile points are varied and include side-notched, corner-notched, unnotched, and stemmed points (Hanenberger and Gilbert 203:82–84).

Northeastern South Dakota has several sites interpreted as Lake Benton occupations; however, they have provided only limited information. The Winter site, 39DE5, contained Lake Benton ceramics, as did the Hartford Beach site, 39RO5 (Haug 1982, 1983c, 2004; Haug and Fosha 2008). In both instances, the Late Woodland component was sparse and mixed with later materials and features. A series of radiocarbon dates from the Winter site confirm a Late Woodland age for some of the features (Archaeological Research Center records). Major excavations at site 39BK7 in the Oakwood Lakes State Park vicinity revealed a lower, Woodland, component showing use of the site for bison hunting and processing and an upper, early Plains Village, component with an emphasis on lake resources like fish and waterfowl and cultivated maize (Hannus 1981).

Hartford Beach Village (39RO5) is a small, fortified village dating between 1100 and 1300 CE (Haug 1982, 1983c, 2004; Haug and Fosha 2008). Located on a bluff above Big Stone Lake, it is the only fortified village in the region. The village is surrounded on three sides by a ditch with post-holes indicating a single-bastioned palisade set inside the ditch; the steep bluff slope forms the east side of this fortification system. The site contained pottery of the Plains Village Cambria type with broad-trailed scroll decoration, as well as some Late Woodland Lake Benton type. Projectile points, too, included Late Woodland and Plains Village types. No definite house remains

were found, but a set of four braced post-molds may be from house supports. Features such as hearths and cache pits are typical of Plains Village settlements. The site had both bell-shaped and bag-shaped pits. Stone tools were made of local cherts and Knife River flint. Fill in cache pits included bison and other animal bone, clam shells, and corn kernels. Besides chipped-stone tools and debris, artifacts included black stone and clay tobacco pipe fragments, a bison scapula hoe, two bone awls, and a bone fleshing tool. In its age, layout, and tool assemblage, the Hartford Beach site is typical of other Late Woodland sites in the Northeastern Plains; however, its ceramic assemblage and fortification system seem to be localized developments.

Test excavations at the Dougherty Mounds site, 39RO10, indicated an extensive occupation site in an area near the burial mounds. These excavations exposed a pit containing animal bone, flakes, and a biface and a rock-filled roasting pit containing animal bone, fire-cracked rock, chipping debris, and a few pottery sherds. Apart from these features, shovel tests and test excavations unearthed additional Late Woodland ceramics, chipped-stone tools and debris, fire-cracked rock, and bone from bison or elk. Projectile points and ceramics were consistent with a Lake Benton phase age and affiliation for the site. The site stratigraphy indicated that one of the mounds had been constructed after the Late Woodland occupation of the site or at least after one portion of a Late Woodland occupation was abandoned (Messerli and Donohue 2005).

T.H. Lewis first described the Dougherty Mounds, 39RO10, as 11 circular and linear mounds (Lewis 1883). In the 1920s, W.H. Over relocated eight mounds and test-excavated five of them. He removed the remains of 14 individuals, along with some ceramics, a biface, conch shell beads, native copper, and a metal pendant. The human remains were later determined to be those of post-contact Dakota and Late Woodland people. It is not clear whether the Late Woodland burial, and the mound in general, belong to the Lake Benton phase (Messerli and Donohue 2005).

## **Environmental Setting**

Glaciated prairie lakes region in northeastern South Dakota and Missouri Coteau. Occupation sites are on the shores of natural lakes. Sites occur on bluffs and terraces and in floodplain locations.

## **Temporal Boundaries**

700–1200 CE, or 1300–800 BP.

## **Spatial Boundaries**

Northeastern South Dakota and adjacent portions of Minnesota and North Dakota.

## **Property Types**

Occupation sites and/or villages, surface scatters of ceramics and chipped-stone artifacts, burial mounds.

## **Locational Characteristics**

Glaciated prairie lakes region of northeastern South Dakota.

## **Condition**

Many of the Lake Benton occupation sites have been damaged or destroyed by agricultural activities; however, pockets of intact deposits are present at some sites. One site (39ML71) is described as lying well below the plow zone, suggesting the possibility of intact, deeply buried Lake Benton phase sites.

## **Voids in Research**

It is not clear whether the occupation sites represent villages or single-family homesteads. The economic base of this complex is not well understood.

## **Research Topics**

1. What is the relationship of Lake Benton to coeval and later complexes in the prairie lakes region?
2. What do Lake Benton phase sites reveal about the transition from Woodland to Plains Village lifeways?
3. To what extent did Lake Benton phase subsistence rely on maize farming? What explains the low number of scapula hoes in Randall components—sampling error or a lack of sustained horticulture?
4. What burial practices are associated with the Lake Benton phase? Which mound sites can be assigned to this phase?
5. What kinds of houses and settlements were used by Lake Benton phase people?

## **Research and Management Goals**

Sites with intact cultural deposits should be identified and preserved. To understand house and settlement structure, it will be necessary to conduct block excavations at unplowed sites.

## **National Register Listings**

None

## **Archaeological Regions**

Northeast Lowlands, Prairie Coteau

## **Lake Benton Sites**

39BK7, 39DA68?, 39DE5, 39DE11, 39DE12, 39ML35, 39ML71, 39RO5, 39RO10

## **Bibliography**

Anfinson 1997; Benn 1990; Haberman and Gilbert 2003; Haug and Fosha 2008

## **Arvilla Complex**

### **Overview**

The Arvilla complex comprises burial mounds in a region extending from central Minnesota to the Red River valley of eastern North Dakota, and including extreme northeastern South Dakota. The complex is recognized on the basis of linear and geometric burial mounds, some of which are very large (Anfinson 1997; Chomko and Wood 1973; Johnson 1973; Johnson and Johnson 1998). Arvilla complex sites date from 600 to 900 CE.

The only known Arvilla complex site in South Dakota is a series of 41 low mounds along the Little Minnesota River at the south end of Lake Traverse (Lewis 1883). The site was excavated in 1953 by a crew from the University of Minnesota. They uncovered 24 burial pits containing 40 secondary and partially disarticulated primary burials. At the time of the excavation, no mounds were visible; however, Arvilla burials were in subsurface pits with mounds constructed over them. It is not known whether intact burials have survived at this site because it has been used extensively as a gravel quarry (Bruce *et al.* 2010).

### **Environmental Setting**

Glaciated prairie lakes of northeastern South Dakota.

### **Temporal Boundaries**

600 to 900 CE, or 1400 to 1100 BP.

### **Spatial Boundaries**

Extreme northeastern South Dakota and adjacent regions of North Dakota and Minnesota.

### **Property Types**

Burial mounds.

### **Locational Characteristics**

Bluffs in the Northeastern Lowlands; beach deposits from glacial Lake Agassiz.

## **Condition**

Only one site has thus far been identified as belonging to the Arvilla complex in South Dakota, the De Spiegler site, 39RO23. It is not known whether anything remains of the site following the excavations in 1953 and subsequent gravel quarrying.

## **Voids in Research**

Non-burial aspects of the Arvilla complex in South Dakota are unknown.

## **Research Topics**

1. What is the nature of the Arvilla complex? Is it a legitimate taxonomic entity?
2. What are the non-burial aspects of the cultural entity represented by the Arvilla burial mounds?
3. How was Arvilla related to other Late Woodland complexes?

## **Research and Management Goals**

Preservation of remaining portions of 39RO23, if any, should be facilitated if possible. Future research on the complex in South Dakota will require discovery of additional sites.

## **National Register Listings**

None

## **Archaeological Regions**

Northeast Lowlands

## **Arvilla Site**

39RO23

## **Bibliography**

Johnson 1973; Anfinson 1997

## **Loseke Variant**

### **Overview**

The Loseke variant is a terminal Woodland-initial Plains Village development that overlaps in time and space with the Great Oasis and Randall complexes (Tiffany 2007a). Some Loseke sites appear to represent small unfortified hamlets and individual houses (Benn and Green 2000:477–

478; Tiffany 2007a). This variant or phase includes side-notched projectile points and globular vessels with high, flared rims that were either impressed with cord-wrapped sticks or left undecorated.

A pre-Plains Village level at the Scalp Creek site, 39GR1, probably belongs to this variant, as does similar pottery from the Ellis site, 39GR2. The excavator placed the Scalp Creek and Ellis material just before the Randall phase component (Hurt 1952; Hall and Hall 2004).

The Scalp Creek site contained evidence of repeated occupation over a fairly long period. Small, shallow pits, burned areas that probably indicate hearths, and scattered post molds were found, but no patterns of holes that could be taken as indications of house structures. The pottery was uniformly cord-roughened. Rims included several types, some with raised bosses around the rim, others with the imprint of single cords running horizontally about the vessel rim or forming triangular patterns. Projectile points include triangular, side-notched forms; and there was a considerable variety of chipped-stone knives, scrapers, choppers, and other implements. A boat-shaped stone, with an encircling groove around each end, was probably a weight for the atlatl or spear thrower. There were also simple clamshell ornaments of several kinds. Few bone or antler tools were found. There was no direct evidence of corn growing, although a bison scapula digging tool was present. A low mound near the Scalp Creek site yielded the partly flexed remains of six individuals, all without accompanying artifacts, but suspected of association with the nearby residence area (Wedel 1961:166).

At the Arp site, 39BR101, Ellis and Scalp Creek ceramics occurred alongside Randall Incised ceramics (Hurt 1967). Various Woodland and Plains Village materials were mixed in the upper portion of the site, with only the bottom portions of cache pits containing unmixed cultural deposits. The Woodland component(s) at the Arp Site dated to 240 to 810 CE, with a date of 750 CE on charcoal that appeared to be directly in association with hoes made of bison bone. This suggests that farming was part of the subsistence of the communities represented by Loseke materials in South Dakota, as at the type sites in Nebraska (Hurt 1967:50). The site contained no habitation features, and no burials that could be reliably assigned to the Woodland component.

The Spain site, 39LM301, also contained likely Loseke materials, but, as at Scalp Creek and Ellis, these received little attention in the excavation. The fourth recorded Loseke site in South Dakota is the Gavin's Point site, 39YK203. Based on the presence of ceramic types, researchers postulated a Loseke variant occupation there following a Middle Woodland and preceding a Great Oasis occupation (Blakeslee and O'Shea 1983; Hall and Hall 2004). Some Loseke variant pottery was found at 39LM256 from surface contexts and from material that was eroding from the river bank. This site has not been excavated.

## **Environmental Setting**

Missouri River trench

## **Temporal Boundaries**

Uncertain, but a reasonable estimate is 800 to 1000 CE, or 1200 to 1000 BP.

## **Spatial Boundaries**

Southeastern South Dakota.

## **Property Types**

Possible hamlets or houses, mounds.

## **Locational Characteristics**

Missouri River valley.

## **Context Definition**

Loseke variant sites are recognized on the basis of globular vessels with high, flared rims that were either impressed with cord-wrapped sticks or left undecorated and side-notched projectile points.

## **Condition**

Like many sites bordering the Missouri River, these sites have been inundated or damaged by construction of hydroelectric projects.

## **Voids in Research**

part from pottery types, little is known about the Loseke variant.

## **Research Topics**

1. What is the relationship of the various Late Woodland complexes to one another?
2. What does the temporal overlap of Woodland and Plains Village pattern sites in this region tell us about the process by which local cultures moved into the village-farming way of life?
3. What aspects of the Loseke variant made their way into the later Initial Middle Missouri and/or Great Oasis cultures of the region?
4. Does the Loseke variant represent a village and/or horticultural pattern? What was the economic base and social organization of the people who produced Loseke-related ceramics?

## **Research and Management Goals**

As with other sites affected by construction and operation of hydroelectric dams on the Missouri River, sites with Loseke components will need ongoing protection from shoreline erosion or excavation to salvage what cultural deposits still remain.

## **National Register Listings**

None.

## **Archaeological Regions**

Big Bend, Yankton

## **Loseke Creek Sites**

39BR101, 39GR1, 39GR2, 39LM256, 39LM301, 39YK203

## **Bibliography**

Blakeslee and O'Shea 1983; Hall and Hall 2004; Hurt 1952

## **Randall Phase**

### **Overview**

The Randall phase is a late Woodland complex encompassing distinctive ceramics and Plains Village-like features. Haberman (1993e) provides this summary:

Randall ware ceramics, particularly the Randall Incised type, are the most clearly recognizable diagnostic artifacts of the Randall phase sites. Chipped-stone tools, including small corner-notched and unnotched projectile points and a limited bone tool industry are present. Cache pits, including relatively large bell-shaped storage pits, were used. Subsistence appears to have been provided by a variety of hunting and gathering activities; horticulture was also practiced. Scapula hoes, of the types utilized by Plains Village tradition peoples, have not been found. The Randall phase dates from about 1050 to 1240 CE based on uncorrected radiocarbon assays. In spatial distribution, the Randall phase appears to occupy what is termed here as the Southern Riverine region, or subarea, of the Northeastern Plains (Haberman 1993e:76; Hall and Hall 2004).

Randall phase pottery consists of high-rimmed globular vessels with cord-impressed, trailed, or crosshatched decorative elements on the rim exteriors. Rims are high and flared or S-shaped (Hurt 1952; Haberman 1993e). Pottery is grit-tempered and cord-roughened, smoothed-over cord-roughened, or smooth. Vessels were constructed using a paddle and anvil technique.

### **Environmental Setting**

Randall phase sites occur in stream valleys and on stream terraces along the lower reaches of the James River and the Missouri River below the Big Bend.

### **Temporal Boundaries**

800 to 1000 CE, or 1200 to 1000 BP.

## **Spatial Boundaries**

Lower reaches of the Missouri and James River valleys.

## **Property Types**

Possible villages or hamlets.

## **Locational Characteristics**

South central and southeastern South Dakota in major river valleys.

## **Context Definition**

Randall phase sites are identified from distinctive pottery types dominated by grit-tempered high-rimmed globular vessels with cord-impressed, trailed, or crosshatched decorative elements on the exteriors of the flared or S-shaped rims. Vessel exteriors are cord-roughened, smoothed-over cord-roughened, or smooth.

## **Condition**

Most of the sites have been disturbed by plowing or shoreline erosion following dam construction; however, only one known site, 39GR1, is inundated.

## **Voids in Research**

The Randall phase is not widely recognized. It is likely that some Randall pottery from sites in this region has not been recognized as such. Since many of the Randall phase sites contain mixed components, more research is needed to clearly delineate all aspects of the complex.

## **Research Topics**

1. Randall ceramics show similarities to both Great Oasis and Initial Middle Missouri types. What is the relationship of these archaeological complexes? Does some pottery classified as Over focus belong to the Randall phase?
2. Does the Randall phase belong in the terminal Woodland or in the initial Plains Village tradition?
3. What do Randall phase sites reveal about the transition from Woodland to Plains Village lifeways?
4. To what extent did Randall phase subsistence rely on maize farming? What explains the low number of scapula hoes in Randall components—sampling error, lack of preservation of bone tools, or a lack of sustained horticulture?
5. What kinds of houses and settlements were used by Randall phase people?

6. What explains the more restricted distribution of Initial Middle Missouri sites as compared with the range of Randall phase sites?

## **Research and Management Goals**

A more complete understanding of terminal Late Woodland lifeways in South Dakota will require both new field studies and reanalysis of existing collections and data. In general, archaeologists working during the Smithsonian Institution-River Basin Surveys era focused on Plains Village components. Reanalysis of their findings may yield new data and insights on the local Late Woodland cultures of central and eastern South Dakota. Sites that are currently threatened by shoreline erosion, such as 39BR101, should be protected or professionally excavated before more information is lost.

## **National Register Listings**

39SP11

## **Archaeological Regions**

Big Bend, Fort Randall, Lower Big Sioux, Middle James, Upper James

## **Randall Phase Sites**

39BR101?, 39GR1, 39HD1?, 39HD3?, 39HD4, 39HT30, 39LN5?, 39MH7?, 39MH202?, 39SP11, 39UN1?

## **Bibliography**

Haberman 1993e; Hall and Hall 2004

## **Great Oasis**

### **Overview**

Great Oasis is a fairly widely distributed terminal Woodland complex. This complex occurs in eastern South Dakota, northwestern and eastern Iowa, southwestern Minnesota, western Illinois, and southeastern North Dakota (Haberman 1993c; Tiffany 2007a). Ceramics include globular vessels with high, decorated rims and smoothed-over-cord-marked surfaces. Great Oasis groups lived in unfortified, dispersed hamlets or farmsteads. Houses were large enough for a nuclear family or about eight people (Tiffany 2007a). They practiced maize horticulture, especially after about 1000 CE (Tiffany 2007a). They combined corn-growing with bison or deer hunting and use of waterfowl, shellfish, and native plants. This unspecialized economy allowed Great Oasis groups great flexibility of movement. Non-local items suggest limited trade with Mississippian groups far to the south.

Because they are concentrated on river terraces, many sites with Great Oasis components were lost to inundation. A Great Oasis occupation site recorded as 39BK7 contained ceramics, chipped-

stone tools and debris, one bone tool, and a clay effigy pipe (Buechler 1982). The tests also turned up large amounts of daub, suggesting the presence of at least one wattle-and-daub house, but no house floor or structural remains were detected. Excavations were too limited to determine whether the site represents a single house or a larger settlement. Secondary burials found in a bell-shaped pit exposed by shoreline erosion on the Missouri River at 39LM59 are of likely Great Oasis affiliation. The site contained a mixed Great Oasis and Initial Middle Missouri occupation, but no distinct house features (Archaeological Research Center records). Limited test-excavations at a single-component Great Oasis occupation site (39LN21) revealed an intact cultural deposit with features, ceramics, chipped-stone artifacts, and fire-cracked rock at a depth of 55 cm below surface (Trader 2015). The Heath site, 39LM15, is a set of burial mounds and a possible village site of Great Oasis affiliation. Site 39ML32/39ML45 is a series of burial mounds with Great Oasis pottery exposed in rodent burrows. This site is intact and has not been excavated (Archaeological Research Center records). Test-excavation units and surface survey there indicated an extensive site with house remains, but the site has not been studied in detail (Archaeological Research Center records). A possible Great Oasis village, 39RO42, has not been excavated (Archaeological Research Center records). Other excavated sites with Great Oasis ceramics were later Plains Village settlements built over the earlier Woodland occupations. The Woodland and Plains Village materials were typically mixed by plowing and bioturbation, so it was not possible to isolate the Great Oasis houses, if any were present.

Excavations at the single-component Bonander occupation site, 39MH102, indicated that the site deposits had been disturbed by agricultural activities. One feature, an ash-filled hearth, was found, but no distinct cultural level could be otherwise detected (Haberman 1993c, 1993d). This site is on and in a low terrace of the Big Sioux River. It contained Great Oasis ceramics, described as high-rimmed, globular vessels with cord-roughened or brushed surfaces and incised triangle, trapezoid, X, or oblique line designs on the rim. Other artifacts recovered from the excavations included two arrowpoints, one biface, two end-scrapers, four retouched flakes, two utilized flakes, two cores, a small amount of chipping debris, two sandstone abrading tools, and one mano. Faunal remains included bison, deer, and pocket gopher, but most of the bone was too fragmented to be identified. The site also contained mussel shell. The hearth contained small fish bones and scales, small mammal and bird bone, and mussel shell fragments. The hearth fill contained 304 fragments of corn, more than 1000 *Chenopodium* seeds, and smaller amounts of sunflower, grass, and ragweed seeds. Carbonized material from the hearth was radiocarbon dated at about 750 CE, indicating an early Great Oasis presence.

The distribution of Great Oasis sites is roughly the same as that of Initial Middle Missouri sites. The western/Chamberlain Initial Middle Missouri and the eastern/Mill Creek Initial Middle Missouri may have developed directly from Great Oasis (Haberman 1993c; Hall and Hall 2004; Tiffany 2007a; Tiffany and Alex 2001; Wood 2001:190).

## **Environmental Setting**

Riverside terraces and bluffs in eastern South Dakota.

## **Temporal Boundaries**

800 to 1260 CE, or 1150 to 690 BP.

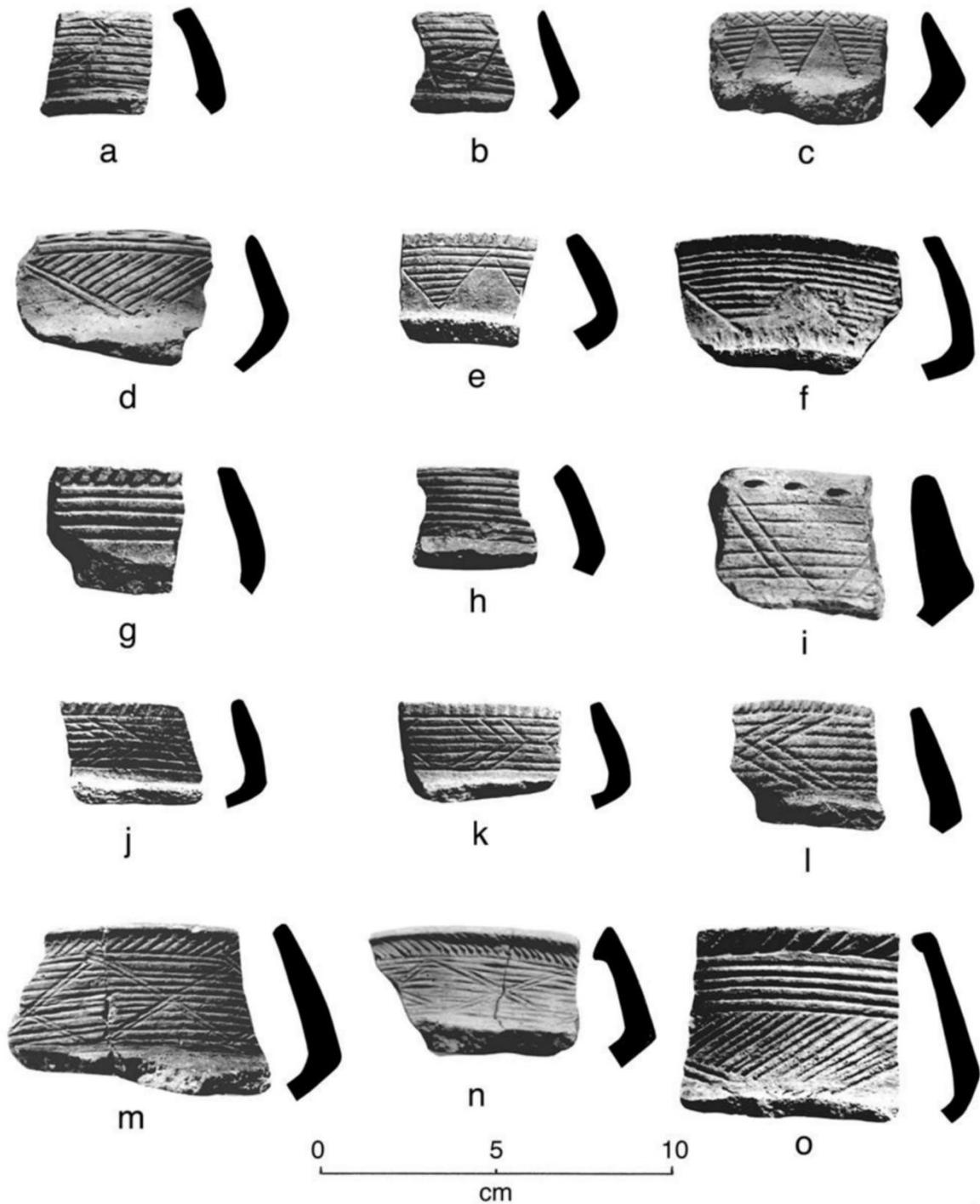


Figure 37. Great Oasis rim sherds: a, b, straight flag & dot horizontal incised rim; c, e-f, straight pendant triangle/horizontal incised rim; d, o, straight pendant triangle/diagonal incised rim; g-h, straight horizontal incised rim; i, straight triangular/horizontal incised rim; j-k, straight chevron/incised rim; l, straight chevron horizontal cord impressed rim; m-n, criss-cross horizontal incised rim (from C. Johnson 2007).

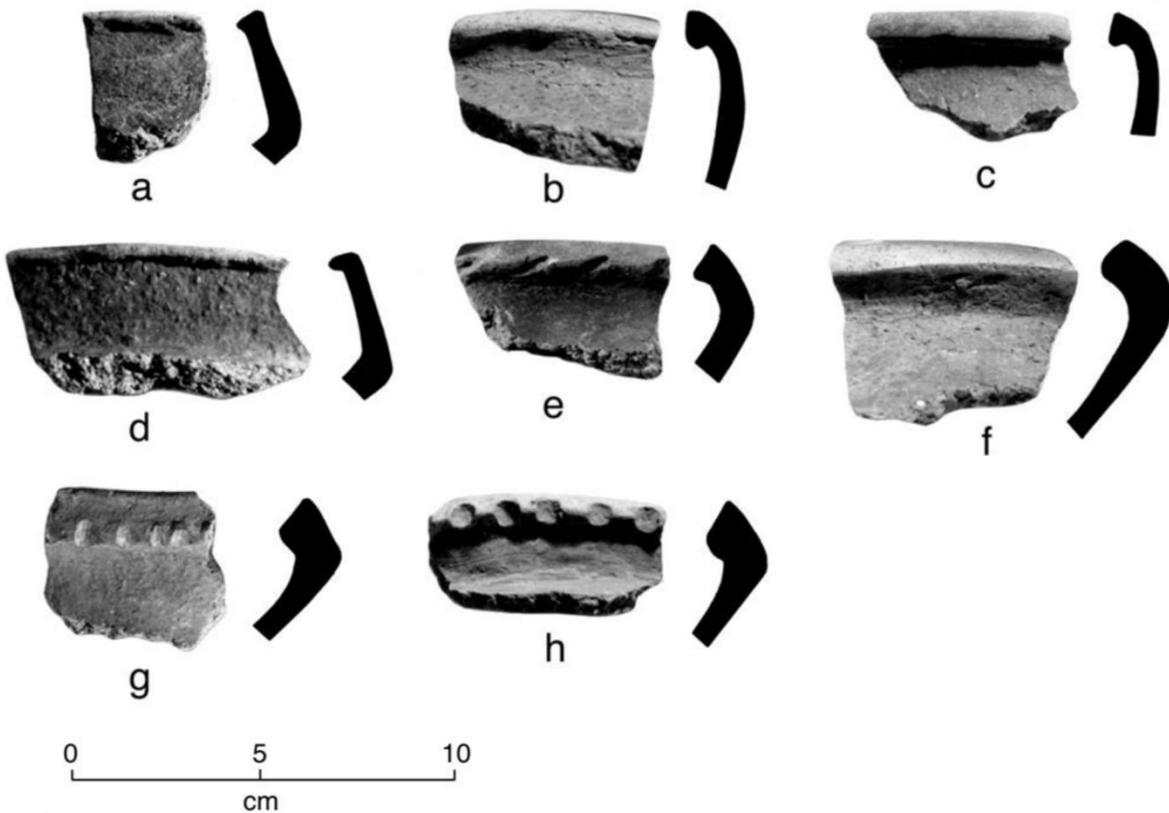


Figure 38. Great Oasis rim sherds, a-d, f, straight undecorated; e, g-h, straight tool impressed lip (from C. Johnson 2007).

## Spatial Boundaries

Great Oasis sites are found in the valleys of the Missouri, James, and Big Sioux rivers in central and eastern South Dakota and in the Northeastern Lowland region.

## Property Types

Surface scatters of chipped-stone artifacts and ceramics, houses and hamlets, secondary burials in mounds or small cemeteries.

## Context Definition

Great Oasis sites are identified from globular vessels with high, decorated rims and smoothed-over-cordmarked surfaces. These occur in association with small house features alone or in clusters.

## Locational Characteristics

Missouri, James, and Big Sioux River bluffs and terraces.

## **Condition**

Many sites have been lost to inundation and shoreline erosion; however, at least one mound site and two occupation sites remain intact.

## **Voids in Research**

It is not yet clear whether Great Oasis people lived in villages. Archaeologists also have not clearly traced the relationship between Great Oasis and coeval Late Woodland cultures and later Plains Village cultures.

## **Research Topics**

1. What was the role of Great Oasis in the development of the Plains Village tradition?
2. What is the relationship between Great Oasis and cultures producing different ceramic assemblages?
3. Can Great Oasis phases be defined on the basis of ceramic variation and/or lifeways?
4. Should Great Oasis be classified as part of the Woodland (Tiffany 1983:96–97) or Initial Middle Missouri tradition (Henning and Henning 1978:14)?
5. Was Great Oasis social organization pliable enough to adapt to different (environmental) circumstances and was mobility one of their economic strategies? Or does Great Oasis represent different ethnic groups with the same economic strategies?
6. Did Great Oasis peoples grow maize or did they trade for it, or do both?

## **Research and Management Goals**

Great Oasis sites in danger from shoreline erosion should be provided with protective management or excavation to prevent further loss of data. A variety of site types should be investigated to answer basic questions about Great Oasis cultural developments.

## **National Register Listing**

39ST239

## **Archaeological Regions**

Big Bend, Fort Randall, Lower Big Sioux, Upper Big Sioux, Lower James, Upper James, Northeast Lowlands, Yankton

## **Great Oasis Sites**

39BF227, 39BK8, 39BN85, 39BO58, 39BR202, 39CH7, 39CH29, 39CH45, 39CH205, 39DE5, 39DV29, 39DV30, 39HD3, 39LM59/39LM256, 39LM66, 39LM238, 39LN7, 39LN15,

39LN21, 39MH10, 39MH33, 39MH102, 39MH202, 39ML9, 39ML32/39ML45, 39ML35, 39R042, 39ST239?

## **Bibliography**

Anfinson 1997; Hall and Hall 2004; Hanenberger and Gilbert 2003; Shermer 2003; Tiffany 2007a

## **Blackduck and Sandy Lake**

### **Overview**

The Blackduck and Sandy Lake complexes are centered in the northeastern plains, from western Minnesota to southern Manitoba and eastern North Dakota. These are very late Woodland-like complexes dating from 930 to 1700 CE. Sandy Lake may represent proto-Dakota or proto-Assiniboine groups (Anfinson 1979), although the connection to Siouan groups has been questioned (Syms 1985). Blackduck is the earlier complex, with cord-roughened, globular pots with various kinds of decoration. The later, Sandy Lake, ceramics have smooth surfaces and either shell or grit temper, as in most of the Plains Village assemblages. The makers of Sandy Lake ceramics followed an economic base of wild rice gathering/cultivation, fish, waterfowl, and use of other water resources (Syms 1977). No Blackduck sites have been identified in South Dakota; however, site 39RO45 on a lake shore in South Dakota and Minnesota contained Sandy Lake ceramics in a Woodland component (Beissel *et al.* 1984). This site appears to have been a winter camp. Artifacts observed on the surface include Late Woodland projectile points, pottery, grooved mauls, hammerstones, and bone. The ceramics include a stick-impressed rim sherd, a neck sherd, and 42 body sherds. The sherds are shell-tempered with cord-marked exteriors. The ceramics suggest an affiliation with Sandy Lake ware.

### **Environmental Setting**

Glaciated prairie lakes and Lake Agassiz Plain

### **Temporal Boundaries**

930 to 1700 CE, or 1020 to 250 BP.

### **Spatial Boundaries**

Northeastern South Dakota and adjacent portions of the northern plains.

### **Property Types**

Surface scatters of ceramics and chipped-stone artifacts; camps.

### **Locational Characteristics**

Extreme northeastern South Dakota and adjacent Minnesota and North Dakota.

## **Context Definition**

Black Duck and Sandy Lake components are recognized on the basis of distinctive pottery types as described above.

## **Condition**

Unknown

## **Voids in Research**

Almost nothing is known of Blackduck and Sandy Lake cultures in South Dakota, if any.

## **Research Topics**

1. Do either Blackduck or Sandy Lake components occur in South Dakota?
2. How is shell-tempered Sandy Lake ware distinct from Oneota wares? How are the two related?
3. What settlement and subsistence patterns are indicated by these archaeological complexes?
4. Is it possible to link Sandy Lake to historic Siouan or Algonkian groups?

## **Research and Management Goals**

Archaeological work in northeastern South Dakota should take into account the possibility of Blackduck and Sandy Lake components. Any sites with these materials will be important to understanding western versions of this essentially eastern culture that had developed around use of wild rice.

## **National Register Listings**

None

## **Archaeological Region**

Northeast Lowlands

## **Sandy Lake Site**

39RO45

## **Bibliography**

Michlovich 1985; Syms 1985

# **Late Prehistoric Period**

## **Contexts**

Two contexts are outlined for the Late Prehistoric period: Avonlea Complex and Generalized Nomadic Northern Plains Bison-Hunting Groups.

## **Overview**

The introduction of the bow and arrow marks the beginning of the Late Prehistoric period, sometime around 1500 years ago. In the western half of the state, the Late Prehistoric is largely a continuation of patterns established during the Archaic period, with small groups following a seasonal round of bison hunting and plant-food gathering. Along the Missouri River and in the eastern half of the state, this is referred to as the Plains Village period, as the small settlements and experiments with horticulture of the Woodland period developed into larger villages dependent on agriculture for much of their economic base. These two patterns are discussed separately.

## **Environmental Setting**

All zones

## **Temporal Boundaries**

1500 to 200 BP; 500 to 1800 CE

## **Spatial Boundaries**

Entire northern Great Plains area

## **Property Types**

Base camps, hunting camp, special activity areas and camps, bison jumps, animal drive lines and traps, rock art

## **Locational Characteristics**

Entire state

## **Context Definition**

Late Prehistoric sites are generally recognized from the presence of arrow points, as opposed to dart or spear points.

## **Condition**

Variable



Figure 39. Selection of Late Prehistoric projectile points from Ludlow Cave, 39HNI (ARC photo).

## **Voids in Research**

Aspects of culture related to large-scale hunts are well known, largely because of the visibility of animal kill and butchering sites. Stone circle sites are also highly visible, but often contain few artifacts and features. Other kinds of sites, including special activity sites, plant-food processing sites, and rock art have received less attention. In South Dakota, more research is needed to identify the sites of particular ethnic and linguistic groups.

## **Research Topics**

1. What were the nature and extent of interactions between the Missouri River villagers and the Northern Plains bison hunters?
2. Define cultural complexes within the Late Prehistoric period in South Dakota. Can local developments be confidently placed into categories defined for other parts of the Northern Great Plains (*cf.* Reeves1983)?
3. Determine which Late Prehistoric groups of nomadic bison hunters used this area and then define their characteristic archaeological assemblages. Ethnographic and ethnohistoric evidence suggests that the area between the Missouri and Yellowstone rivers was used regularly by members of at least nine different ethnic groups (Athabaskans, Shoshone, Crow, Kiowa, Atsina, Cree, Assiniboine, Lakota, and Cheyenne) during the Late Prehistoric and Protohistoric periods,. For the most part these groups are archaeologically similar; however, a growing number of sites with Middle Missouri-like ceramics indicate occupation by the Crow or their forebearers, and a few sites in the area have yielded Intermountain Tradition pottery or steatite vessels that indicate Shoshone use or trade. Additionally, analysis of the characteristic Late Prehistoric period side-notched projectile point varieties suggests that different forms may indicate cultural and chronological distinctions.
4. Settlement patterns through time for specific tribal groups are poorly known. For instance, no one has differentiated the settlement patterns characteristic of the Middle Missouri and Coalescent traditions on the open plains away from the Missouri River.
5. Determine the nature of the transition to horse culture, especially with regard to social organization, settlement pattern, and cultural heterogeneity.

## **Research and Management Goals**

As sites are increasingly assigned to particular cultural groups, archaeological and ethnographic data can be combined to define cultural landscapes of significance to descendant groups, as well as better identifying which tribes should be consulted in making management decisions. Some types of Late Prehistoric sites have received relatively little attention because they are either ubiquitous (stone circles) or small (vision-quest sites), or simply because they are not thousands of years old. But for both research and public education, Late Prehistoric sites with highly visible features, such as tipi camp sites or bison kill sites, can provide both rich data and good opportunities for the public to understand archaeology and the past.

## **National Register Listings**

Excluding rock art sites (see listing under Rock Art context), no Late Prehistoric sites have been listed.

## **Archaeological Regions**

All regions, but prevalent away from the Missouri River.

## **Sites**

39AR1, 39BE69, 39BE89, 39BF244, 39BK14, 39BK27, 39BK74, 39BN50, 39BN112, 39BO33, 39BT8, 39BT39, 39BU107, 39BU213, 39BU221, 39BU226, 39BU258, 39BU262, 39BU334, 39BU439, 39CD36, 39CD71, 39CK27, 39CK28, 39CL13, 39CO85, 39CU2, 39CU244, 39CU264, 39CU402, 39CU477, 39CU498, 39CU555, 39CU577, 39CU595, 39CU625, 39CU658, 39CU767, 39CU774, 39CU782, 39CU806, 39CU825, 39CU890, 39CU1142, 39CU1145, 39CU1172, 39CU1182, 39CU1214, 39CU1240, 39CU1589, 39CU1661, 39CU1697, 39CU2565, 39CU2567, 39CU2839, 39CU3083, 39CU3170, 39CU3309, 39CU3419, 39CU3528, 39CU3905, 39CU4101, 39DG2, 39DW174, 39DW188, 39DW338, 39FA28, 39FA55, 39FA63, 39FA69, 39FA90, 39FA91, 39FA118, 39FA184, 39FA234, 39FA351, 39FA395, 39FA447, 39FA496, 39FA508, 39FA609, 39FA679, 39FA683, 39FA688, 39FA691, 39FA746, 39FA767, 39FA790, 39FA793, 39FA875, 39FA933, 39FA1010, 39FA1048, 39FA1049, 39FA1093, 39FA1154, 39FA1190, 39FA1203, 39FA1204, 39FA1216, 39FA1237, 39FA1246, 39FA1480, 39FA1637, 39FA1686, 39FA1694, 39FA2535, 39GR94, 39GR104, 39GT45, 39HD71, 39HK10, 39HK27, 39HN1, 39HN5, 39HN17, 39HN18, 39HN21, 39HN30, 39HN43, 39HN53, 39HN54, 39HN150, 39HN155, 39HN160, 39HN167, 39HN168, 39HN171, 39HN198, 39HN205, 39HN206, 39HN207, 39HN208, 39HN209, 39HN210, 39HN213, 39HN217, 39HN218, 39HN219, 39HN232, 39HN234, 39HN381, 39HN433, 39HN452, 39HN482, 39HN484, 39HN485, 39HN487, 39HN515, 39HN531, 39HN556, 39HN832, 39HN842, 39HN843, 39HN844, 39HN845?, 39HN846, 39HN964, 39HN1166, 39HN1202, 39HN1453, 39HT95, 39HU191, 39JK64, 39JK71, 39JK172, 39JK197, 39JK229, 39JK253, 39LA143, 39LA288, 39LA472, 39LA754, 39LA859, 39LA1289, 39LA1552, 39LA1563, 39LK40, 39LN12, 39LN50, 39MD48, 39MD81, 39MD82, 39MD135, 39MD136, 39MD242, 39MD245, 39MD257, 39MD261, 39MD267, 39MD311, 39MD314, 39MD353, 39MD440, 39MD724, 39MD739, 39MD855, 39MD878, 39MH165, 39MH212, 39MP3, 39MP21, 39MT15, 39MT46, 39PE63, 39PE184, 39PN54, 39PN86, 39PN100, 39PN136, 39PN150, 39PN200, 39PN214, 39PN219, 39PN233, 39PN445, 39PN540, 39PN809, 39PN937, 39PN966, 39PN972, 39PN976, 39PN1124, 39PN1135, 39PN1500, 39PN1651, 39PO63, 39PO74, 39SH84, 39SH90, 39SH93, 39SH133, 39SH172, 39SH187, 39SH212, 39SH241, 39SH261, 39SH349, 39SP273, 39ST257, 39TD27, 39TD32, 39TP70, 39TP76, 39WW23, 39WW145, 39ZB47

## **Bibliography**

Kornfeld et al. 2010; Reeves 1983

# Avonlea Complex

## Overview

The Late Archaic to Late Prehistoric transition on the Northern Plains is marked by the Avonlea archaeological complex. Avonlea sites on the Northern Plains indicate a strong emphasis on complex, ritualized communal bison procurement within the context of a highly mobile settlement pattern based on a seasonal round of movements to obtain a variety of resources. This continued a pattern established in Besant times. Avonlea dates from northwestern plains sites range from about 1400 to 1000 BP (Frison 1991). Avonlea hunters appear to have introduced the bow and arrow to the area. They produced a distinctive thin, triangular point with narrow side notches placed very close to the base, straight or very slightly convex bases and straight to excurvate blade edges. Avonlea overlaps the Besant complex, suggesting that the two complexes represent distinct cultural traditions (Frison 1991; Reeves 1983).

Avonlea subsistence in the northern portion of the Northwestern Plains was heavily dependent on communal bison procurement; however, in the southern Northwestern Plains, communal bison hunting was supplemented by smaller game and by seasonal exploitation of plant resources (Brumley 1976; Calder 1979; Frison 1991; Greiser 1985; Quigg 1974, 1981). Buffalo jumps and impoundments are especially common throughout the Avonlea period (Brink *et al.* 1985; Brumley 1976; Greiser 1985; Reeves 1983; Vickers 1994). In some areas of the northern Great Plains, small amounts of ceramics occur within Avonlea assemblages of the bison-hunting or hunting-and-foraging pattern (Quigg 1981; Reeves 1983; Vickers 1994).

Tipi-like habitation features are found at some Avonlea sites (Frison 1991; Reeves 1983). A single, localized burial pattern has been defined for the Avonlea of northeastern Wyoming (Frison 1991). It consists of primary flexed or extended pit burials with abundant ornamental and utilitarian grave goods. Other characteristic Avonlea feature types have not been identified.

The origins and cultural affiliation of the Avonlea complex are obscure (Beckes and Keyser 1983; Greiser 1984; Reeves 1983; Schlesier 1994; Vickers 1994). The most widely held view is that the Avonlea complex represents Athabaskan speakers who reached the plains from the northern Canadian boreal forest (Greiser 1994; Haskell 1987; Kehoe 1966; Wilcox 1988). Others view Avonlea as an *in situ* development from the Late Archaic Pelican Lake complex (Brumley and Dau 1988; Reeves 1983). Other researchers suggest a Siouan/Upper Mississippi Valley origin for the complex (Husted 1969; Morgan 1979; Syms 1977). The question of Avonlea origins remains to be settled.

Avonlea sites are relatively rare in eastern Montana, the Dakotas, and southeastern Montana (Vickers 1994:16). Even in its core area on the Canadian plains, Avonlea site density is low in comparison with Besant and other complexes (Schlesier 1994; Vickers 1994). While Avonlea-like projectile points are fairly common in the area, nothing resembling Avonlea pottery has been found in western South Dakota. Whether sites should be identified as Avonlea based on projectile points alone is questionable. Small, triangular projectile points are ubiquitous in the Late Archaic of the Northern Plains. Points classified as Avonlea on the Northwestern Plains are virtually identical to points classified as Initial Middle Missouri along the Missouri trench (Husted 1969). Black Hills Avonlea, if such exists, had not been well defined. Because White River

Badlands archaeological materials often display links to the cultures of the Middle Missouri, Avonlea points found there might be more appropriately compared to Initial Middle Missouri types.

For now, some researchers prefer to categorize points only as “small triangular,” rather than tying them to the Avonlea complex (cf. Kornfeld and Reher 1992). Other researchers are comfortable with using points as diagnostic indicators of an Avonlea presence in western South Dakota (Hannus 1994; Reeves 1983). Others recognize a distinct, but variant, complex, the Beehive complex, in the southern Northwestern Plains, including western South Dakota (Frison 1991; Greiser 1994; Morlan 1988). This discrepancy means that the number of identified Avonlea sites in western South Dakota is a consequence of the diverse and sometimes conflicting classificatory systems used by various researchers in the area.

In the Black Hills, site 39FA101 was hypothesized to represent an intrusion of a plains-adapted Avonlea group (Tratebas 1986). This site contained chipping debris, Avonlea points, scrapers, a spokeshave, a graver, and a drill. It appears to have been the locus of a hunting and tool-making camp. No features or subsistence remains were detected at the site, but only surface data were available. Other possible Avonlea hunting camps include 39CU625 and 39CU651 in the western Black Hills. Site 39CU625 is a scatter of artifacts on a ridge top (Noisat 1990). The surface of the site contained a small, delicately made corner-notched point, a larger point fragment, bone beads, and various other tools. No features were observed. Test excavations at the Lower Corral Spring site, 39CU651, yielded several projectile point bases (Avonlea and possible Early Archaic types), bifaces, a few flakes, an arrow shaft fragment, and chipping debris, as well as several hearths. Two hearths yielded dates of 2280 and 1190 BP (Noisat 1989; Shelley 1986).

The Mud Spring site (39CU773) is a dense concentration of chipped-stone artifacts, bone, and fire-cracked rock near a permanent spring in the western Limestone zone (Miller 1989; Noisat and Campbell 1986). The site received limited test excavation. Projectile points found at the site include Paleoindian, Middle Archaic (Oxbow and McKean), Late Archaic (Besant), and Late Prehistoric (Avonlea and Prairie Side-Notched) types. The site also contained bifaces, a combination end- and side-scraper, and burins. Tool stone included local material and obsidian imported from northwestern Wyoming. This site appears to represent a warm-weather hunting base camp or target camp.

Five other sites in the interior Black Hills appear to represent short-term Avonlea camps or tool-making areas. A bench above a draw contained the remains of a small camp and chipped-stone tool workshop area (39PN218). This site contained local chert and small amounts of yellow jasper and porcellanite. Surface observation and limited test excavation yielded chipping debris, a biface, a core, and a projectile point of either Oxbow or Avonlea affiliation (Noisat 1988). Site 39CU832 is located along a stream. The surface of the site contained a Pelican Lake point and an Avonlea-like point, a biface, retouched flake, a uniface, chipping debris, a small amount of unidentifiable bone, and a scatter of fire-cracked rock. The site was classified as a seasonal base-camp at which tool manufacturing and resource processing took place (Gleichman and Gleichman 1987). Site 39CU1251 contained an Avonlea point, biface fragments, flakes, and cores made of local stone. No features were observed at the site, and its function is undetermined (Miller 1993). Site 39LA165 was recorded as a possible Avonlea tool-stone procurement site. It contained large amounts of chipping debris and cores and a single scraper, all of opaque to clear white chert (Noisat

and Buechler 1992). The Wayne Compton Site, 39PN1119, contained a possible Avonlea point and chipping debris of porcellanite and local cherts and quartzites (Shetland 1992). A few unidentified seed casings were also found at the site. No features were observed on the surface or in test units at the site.

Three other possible Avonlea sites have been recorded in the southern Black Hills. Test excavations at 39FA327 revealed a lipped basin hearth, a charcoal stain, unidentifiable bone fragments, and chipping debris (Noisat and Buechler 1992). A possible Avonlea point fragment and flakes of local stone were found exposed in a blowout at 39 FA1216 (Agar 1992). A nearby artifact scatter exposed on bedrock contained possible Avonlea and Pelican Lake projectile point fragments, flakes, utilized flakes, and a scraper, all of local stone (Agar 1992).

Scores of projectile points reminiscent of Avonlea types were found at Ludlow Cave (39HN1) in the northwestern South Dakota and at Medicine Creek Cave (48CK64) in the northwestern Black Hills (Buckles 1964; Sundstrom 1996). Both sites are multiple-component ceremonial rock art sites. Both were excavated using poor field methods, and little contextual information is available for the collections. Because the sites contained some Mandan Tradition pottery, and are associated historically with Mandan and Hidatsa groups, it is possible that the projectile points belong to the Middle Missouri tradition, rather than to the Avonlea complex.

Perhaps the most complete information on Avonlea occupations in the Black Hills comes from test excavations at 39FA35 (Haug *et al.* 1992). This site contained Pelican Lake and possible Avonlea points, as well as 15 other lithic tools, a ground stone tool, a socketed antler artifact, a possible bone tool, and 155 flakes of local quartzite and chalcedony. Subsistence remains included pocket gopher, eastern cottontail, prairie dog, raven, and mussel. The site was hypothesized to represent a short-term camp.

The limited data available for possible Avonlea manifestations in western South Dakota do not suggest intensive use of the area by Avonlea groups. Because Avonlea subsistence focused on large-scale bison drives, this small number of sites is not unexpected (Tratebas 1986:363). Subsistence data from 39FA35 suggest a more diverse food base; however, we cannot tell whether this was a seasonal or long-term variant of the more typical Avonlea pattern, or whether it indicates an entirely different pattern for the Black Hills Avonlea.

At present, the data are not sufficient to allow firm conclusions about the extent or duration of Avonlea use of western South Dakota. The sites investigated so far suggest an emphasis on tool-stone procurement and seasonal hunting by special task groups. Two sites, 39FA35 and 39CU773, look more like base camps occupied by the entire social unit; however, their affiliation with the Avonlea complex is not certain as each contained non-Avonlea material.

Some research has placed the Avonlea-like components in western South Dakota in the Beehive complex, a southern Avonlea variant (Fredlund 1988; Morlan 1988; Greiser 1994; Hannus 1994). The Beehive complex is hypothesized to represent proto-Kiowa Apache (Naishan Dene) groups (Schlesier 1994; Greiser 1994). If this affiliation is correct, the small number of Avonlea sites in the Black Hills is puzzling, as both ethnographic and historical sources name the Black Hills as Kiowa and Kiowa Apache territory in the Late Prehistoric and Protohistoric periods (Schlesier 1994:329). The hypothesized Kiowa Apache affiliation with Avonlea sites in the Black

Hills is ripe for further study, including reanalysis of collections and other site data and excavation projects that can lead to more secure dating and definition of the Avonlea or Beehive complex in the area.

In the White River Badlands, Avonlea assemblages were found in the Pass Creek and Fog Creek drainages (Hannus *et al.* 1984:40-41). Dates from these sites cluster around 1500 BP.

Several other archaeological complexes coexist with Avonlea in western South Dakota. Radiocarbon dates for the Late Prehistoric period in the area peak at 1200 to 1000 BP and then fall off dramatically (Frison 1991; Sundstrom 1994). The same pattern is true of radiocarbon dates associated with Avonlea materials. Some of this apparent jump is removed when the dates are calibrated to fluctuations in atmospheric carbon, but an intensified human presence during this interval is still indicated by these data. This probably reflects a relatively mild, wet climate that could support large herds of bison (Frison 1991). Although most sites indicate an emphasis on bison procurement, it is possible that some sites dating to the early Late Prehistoric represent westward expansion of Woodland tradition villagers into new areas (Hannus *et al.* 1984). Woodland ceramics occur in small numbers throughout the project area, perhaps reflecting such an incursion of Woodland tradition peoples into the western plains.

## **Environmental Setting**

All settings west of the Missouri River

## **Temporal Boundaries**

1850 to 1000 BP

## **Spatial Boundaries**

Northern Great Plains

## **Property Types**

Base camps, hunting camps, special activity areas, bison kill sites

## **Locational Characteristics**

South Dakota west of the Missouri River

## **Context Definition**

The Avonlea complex is recognized by the presence of the characteristic projectile point. In the Canadian plains, some sites contain distinctive pottery; however, no Avonlea sites with pottery have been found in South Dakota.

## **Condition**

Variable.

## **Voids in Research**

Questions remain as to whether the Avonlea-like projectile points in South Dakota are representative of the Avonlea complex as defined for areas to the north and west. It may be possible to develop a better “key” for identifying Avonlea versus Middle Missouri tradition projectile points. The spotty distribution of Avonlea sites in western South Dakota calls for further study. Virtually nothing is known of Avonlea shelter types and settlement patterns.

## **Research Topics**

1. Are the sites with Avonlea-like projectile points in South Dakota part of the Avonlea complex as defined for other areas?
2. Did Avonlea and the adoption of the bow lead to changes in subsistence practices?
3. What patterns of settlement and seasonal movements can be discerned for the Avonlea complex?

## **Research and Management Goals**

The distribution of Avonlea sites is poorly understood at present. Additional research should address this in more detail and to outline the relationship of the Avonlea complex in western South Dakota to the western Avonlea and to Middle Missouri Tradition sites with similar projectile point types.

## **National Register Listings**

39HN1, 39HN204

## **Archaeological Regions**

Sandstone Buttes, Black Hills, South Fork Cheyenne, White River Badlands

## **Avonlea Sites**

39BT18, 39CU775, 39DW121, 39FA101, 39FA195, 39FA327, 39HN1, 39HN204, 39HN474, 39JK63, 39JK72, 39LA165, 39LK37, 39MP18, 39PN533, 39SH59, 39SH62, 39SH66, 39SH72, 39ST122

## **Bibliography**

Hannus and Nowak 1988; Kornfeld *et al.* 2010

# Unspecified Northern Plains Bison-Hunting Groups

## Overview

The latter half of the Late Prehistoric of the Northwestern Plains comprises a large number of defined complexes and phases. These are basically alike in their material expressions and inferred subsistence and settlement patterns. These represent mobile bison hunters who followed the herds and lived in hide tipis. Depending on the local environments in which they were based, these hunters also relied to varying extents on nongame resources. The different complexes are recognized primarily on the basis of projectile point styles. Such points are small and may be side-notched or simple unnotched triangles.

Several types of Late Prehistoric sites have been excavated in western South Dakota. Surface collections suggest use of the interior Black Hills for residence sites and use of the Hogback for various kinds of tool making and resource gathering (Tratebas 1986). A set of twelve extensive tipi ring complexes in the vicinity of Tepee and Hell Canyons in the southern Black Hills containing Late Prehistoric projectile points are assumed to have been used through this, and possibly earlier, periods (Sundstrom 1999). Since no ceramics occur among the thousands of artifacts observed in the area, these sites are assumed to lack any connection to Plains Village cultures. These stone circles or tipi rings are probably the remains of winter camps used over many centuries if not millennia. Although artifacts were abundant on the surface and in eroded areas of these sites, no metal or glass items were found. Given the good surface visibility and the large number of subsurface exposures examined, this was taken to indicate that use of these winter camps did not continue beyond the Late Prehistoric period. This apparent abandonment of what had been a popular locale probably reflects the widespread adoption of horses, which did not favor penetration into the heavily wooded interior Black Hills, and metal tools, which ended the attractiveness of the large chert quarries that overlook the cluster of tipi ring sites.

The Sanson Buffalo Jump in the eastern Black Hills is a classic Late Prehistoric cliff drive site. At least two drive line features lead from a bluff top to a cliff where bison were presumably stampeded over the edge by persons stationed along the drive line. Limited test excavations revealed chipped stone tools and bison bone. Hearths and bison bone were dated to 650, 920, and 1200 years before present; however only small amounts of animal bone were found (Agenbroad 1990; Vawser and Schilling 2013). Stone circles on the other side of a small stream indicate a camp possibly associated with the buffalo jump; however, this area was not test excavated.

Excavations at a stone circle site in the southern Black Hills revealed it to be a winter camp occupied around 1000 years ago (Tratebas 1979). A large pit hearth in the center of the dwelling contained the partial skeletons of an adult and a newborn, accompanied by a bone awl. Artifacts found outside the hearth/burial pit included end scrapers, grinding slab and mano fragments, another bone awl, and chipped-stone flake tools and debris.

A site in the White River Badlands, 39PN607, produced evidence of multiple uses throughout the Late Prehistoric period, but contained no ceramics (Rood *et al.* 1984). The site had four basin-shaped hearths, containing varying amounts of fire-cracked rock and carbonized seeds. Other features were three concentrations of chipping debris and three postmolds. The chipping debris included heat-treated cherts. The postmolds were difficult to interpret, but might represent

drying racks. Dates from the hearths ranged from 440 to 1310 CE. The presence of projectile points similar to Besant and Pelican Lake types supports the earlier dates. No definite Late Prehistoric projectile points were found, but the dates suggest sporadic use of the site throughout much of the period. The seeds and ground-stone tools (including a pitting or nutting stone) clearly indicate that plant-food processing was an important activity at this site. These included chenopods, goosefoot, grasses, dock, beans, prickly pear, plantago, and cocklebur. The site also contained bone, including jackrabbit, pocket gopher, fish, and woodrat. Overall, 39PN607 appears to be a campsite focused on plant-food processing, but also used for chipped-stone tool production and general group maintenance. The diverse food remains suggest a subsistence pattern making use of a wide variety of local resources.

Site 39PN616 contained a basin-shaped hearth that had been cleaned out (Rood *et al.* 1984). Charcoal from this feature was dated to about 96 CE. Cottontail rabbit and other small mammal bone, a few stone tools, and three fragments of groundstone were also uncovered during excavations. The site was interpreted as a short-term camp. A blue glass trade bead found on the surface was not associated with the other material at the site.

Late Prehistoric bison-hunting cultures generally left small sites marked by stone circles or scatters of chipped-stone artifacts. These sites contain various small, side-notched and unnotched arrow points, bison and other animal bone, and occasionally small amounts of pottery. Few burials date to this period, suggesting that most groups employed scaffold or tree burial.

## **Environmental Setting**

All settings

## **Temporal Boundaries**

1500-200 BP; 500-1800 CE

## **Spatial Boundaries**

Entire state

## **Property Types**

Base camps, hunting camps, special activity areas, bison kill sites

## **Locational Characteristics**

Entire state

## **Context Definition**

This context includes various Late Prehistoric sites that cannot be confidently assigned to named complexes. Late Prehistoric bison-hunting sites are recognized based on the presence of arrow points or material dating to the period. Site generally lack indications of permanent

structures, such as earth lodges, or significant amounts of pottery. Faunal remains are dominated by bison, but may include a wide variety of other animals, fish, and shellfish, as well as wild plant foods. Typical site types are tipi camps, special activity sites for stone-tool production, butchering, hide processing, and hunting camps.

## **Condition**

Variable; some sites have been damaged, but many are intact.

## **Voids in Research**

Relatively little is known of Late Prehistoric lifeways beyond subsistence practices.

## **Research Topics**

1. What changes in subsistence and settlement patterns occur during the Late Prehistoric?
2. Did the adoption of the bow lead to changes in subsistence practices?
3. What patterns of settlement and seasonal movements can be discerned for various Late Prehistoric complexes?
4. Can any of the Late Prehistoric projectile point types or artifact assemblages be linked to specific ethnic groups?
5. How did some Plains Village groups adopt the mobile bison-hunting pattern?
6. How did various Late Prehistoric groups interact with each other and with Plains Village groups? How were resources, such as bison, a cause of cooperation or conflict among these groups?
7. What indicators of trade are present in Late Prehistoric sites?
8. What does rock art reveal about Late Prehistoric beliefs, social organization, and intergroup interactions?

## **Research and Management Goals**

Late Prehistoric sites include small, ephemeral camps and activity areas, as well as large sites such as reused winter camps and tool-stone quarries. To obtain a complete picture of Late Prehistoric lifeways, it will be necessary to explore all of these site types.

## **National Register Listings**

None, apart from rock art sites (see listing under Rock Art context).

## Archaeological Regions

All.

## Bibliography

Hannus and Nowak 1988; Kornfeld *et al.* 2010

## Plains Village Pattern<sup>1</sup>

### Contexts

Thirty-three contexts and subcontexts are outlined for the Plains Village period: Middle Missouri, which includes the Initial, Extended, and Terminal Middle Missouri, Central Plains/Coalescent, which includes the Initial Coalescent, Extended Coalescent, and Post-Contact Coalescent; and Oneota. The Initial Middle Missouri includes the Eastern or Mill Creek variant (with three defined phases in South Dakota: Lower James, Brandon, and Big Sioux) and the Western or Chamberlain variant (with three defined phases: Grand Detour, Anderson, and Swanson). Extended Middle Missouri includes the Northern Extended variant (with one defined phase for South Dakota: Ft. Yates), and the Southern Extended variant (with a single defined focus: Thomas Riggs). The Terminal Middle Missouri is summarized here, but contains no phases that are present in South Dakota. The Central Plains/Coalescent tradition includes the Basal Coalescent (with a single defined phase: St. Helena); the Initial Coalescent (with three phases: Arzberger, Campell Creek, and Anoka); the Extended Coalescent (with one defined phase, Shannon, and three defined foci: Le Compte, La Roche, and Akaska); and the Post-Contact Coalescent (with four defined phases: Felicia, Talking Crow, Bad River, and Le Beau).

It is important to note that researchers disagree as to the validity and definitions of many of these classificatory units. The number of phases or foci assigned to a particular variant differs from one publication to the next, and units come and go as researchers acquire new data or reanalyze old assemblages.

### Overview

Along the Missouri River and in much of eastern South Dakota, Plains Village pattern cultures followed the Woodland era. The Plains Village pattern developed directly out of the Woodland pattern, influenced by cultures to the south and east, and was characterized by large, semi-sedentary earth lodge settlements clustered along the major waterways. Maize horticulture and seasonal bison hunting provided subsistence, with surpluses being stored in underground pits in the villages. Actual villages are rare in the western portion of the state; however, a few probable

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<sup>1</sup> Portions of this section were extracted from *National Historic Landmark Theme Study, Village Sites of the Middle Missouri Subarea, AD 1000-AD 1887*, by R. Peter Winham, W. Raymond Wood, and L. Adrien Hannus, Archaeology Laboratory, Augustana College, Sioux Falls, SD, for South Dakota State Historical Preservation Center, Vermillion (now Pierre), 1994.

villages are reported from the Black Hills peripheries and White River Badlands. Other off-river sites seem to represent temporary camps used on seasonal bison hunts.

This semi-sedentary, horticultural way of life had been established in the Middle Missouri subarea by about 1000 CE. Floodplains were used for gardens and uplands for game, especially bison, but the degree to which the inhabitants relied on crops, as opposed to game, and what subsistence variability existed, is not clearly established. The earlier of two Plains Village manifestations to occupy the Middle Missouri Subarea has been termed by archeologists the Middle Missouri tradition (Lehmer 1971; Wood 2001). The people associated with Middle Missouri tradition sites appear to have moved to the Missouri River from the south and east and to have occupied permanent settlements made up of substantial rectangular houses. They likely spoke Siouan languages. Some of these villages clearly represent proto-Mandan and subgroups of proto-Hidatsa peoples. “Though archeologists separate the Middle Missouri tradition and the Central Plains tradition, there are numerous specific similarities which suggest contacts and interaction....There is sufficient data to infer that contact between the Central Plains and the Middle Missouri began soon after A.D. 1000 and lasted to at least A.D. 1250” (Ludwickson n.d.).

A second Plains Village manifestation is the Coalescent tradition, also described as a tradition by Lehmer (1971). The material culture of these villagers indicates a blending of Middle Missouri attributes with those of other village cultures from farther to the south in the Central Plains. Coalescent and Middle Missouri life-ways were similar, and their components are distinguished principally by the wares and types of ceramics that were produced, as well as differences in house types and village organization. “During late prehistoric and protohistoric times, the Mandans, Hidatsas, Arikaras and Cheyennes all had material culture attributable to this complex” (North Dakota State Historic Preservation Office 1990:8.36).

Archaeologists have presented several taxonomic schemes to classify Middle Missouri and Coalescent cultural developments. These reflect a complex scenario of clusters of culturally similar villages moving east to west and south to north over time, while producing distinctive pottery types. A general taxonomic model of the Plains Village pattern is provided in Table 2 (after Toom 1992a:Table 2.2). Recent critical reviews of available radiocarbon dates for the western division of the Initial Middle Missouri variant (IMMw) (Toom 1992b) are incorporated in Table 2. The time frame 1000 to 1300 CE is some 200 years shorter than the previously accepted 900 to 1400 CE time frame (see Lehmer 1971; Thiessen 1977). Under this revised chronology it becomes possible to view the fortifications found at Middle Missouri villages as a response to incursions by Initial Coalescent immigrants from the south (Central Plains invaders) rather than a result of conflicts between the Initial and Extended variants of the same (Middle Missouri) tradition. However, Toom points out that at this time:

...our C-14 based chronology of the Plains Village (pattern) in the north is of questionable quality and too limited in scope to be considered completely accurate and fully reliable. Thus, we should not feel too secure in our present perceptions of Plains Village culture history in the Middle Missouri subarea. It is absolutely necessary to obtain many additional high-quality C-14 dates from a number of appropriate Plains Village components before closing the book on this chapter of Middle Missouri prehistory (Toom 1992a:1221).



Figure 40. Map of the Dodd Site, 39ST301, showing early rectangular house features and later round house features (from Lehmer 1954).

Donald J. Lehmer (1971) placed all Plains Village sites in South Dakota in the Middle Missouri and Coalescent traditions. Later researchers have refined Lehmer's system to account for new data and, especially, better chronological information. Dennis Toom (1992b, 1992c) and Dale Henning (2001) divide the Middle Missouri Tradition into eastern and western variants, with the former including southwestern Minnesota, northwestern Iowa, and southeastern South Dakota and the latter including the area between the White and Knife rivers. What Toom and Henning called IMMe (eastern Initial Middle Missouri) is referred to as the Mill Creek or Mill Creek/Over variant by other researchers, such as Joseph Tiffany (2003). Some researchers in northeastern South Dakota have placed village sites into the Cambria variant, centered in southwestern Minnesota (Wood 201). From there, the taxonomies diverge, with only partial agreement as to the definition of various phases, foci, aspects, and complexes. One point of argument is whether the Great Oasis complex belongs in the Middle Missouri tradition or the Late Woodland. Although it is included in the Woodland section here, many researchers consider it an early Middle Missouri variant (Wood 2001). No attempt will be made here to reconcile the various taxonomic schemes, which are summarized in Table 3.

Another Plains Village cultural development occurring in eastern South Dakota is the Oneota Tradition. This culture developed later than the early Middle Missouri and Coalescent traditions. It appears to represent the Siouan-speaking ancestors of the Omaha and Ponca nations of historic times. The Oneota Tradition occurs throughout the eastern Great Plains and into the prairie-woodland border, with sites in Kansas, Nebraska, Iowa, and Wisconsin. The various subdivisions or phases may reflect separate but related language or ethnic groups.

Plains Village sites and artifacts also occur in western South Dakota, albeit in much smaller numbers than along the Missouri. The Black Hills contains sites thought to be temporary camps used by Middle Missouri village dwellers on hunting or tool-stone procurement expeditions (R. Alex 1979; 1981b), a possible Crow encampment (Wheeler 1957), and two settlements possibly representing longer-term settlements (R. Alex 1981b).

The Cave Hills of northwestern South Dakota are composed of soft sandstone buttes, into which various prehistoric people carved images. Some of these rock art designs illustrate Mandan and Hidatsa stories about eagle trapping and the replenishment of the bison herds. Both Middle Missouri and Coalescent pottery has been found in the Cave Hills, as well as some that cannot be readily identified. Most researchers agree that these finds represent the traces of Plains Village hunting and eagle-trapping parties who visited the area in summer and fall, just as Mandan, Hidatsa, and Arikara peoples did in historic times (Sundstrom 2004).

In the White River Badlands, incised, grit-tempered pottery was found at 39SH80, a multicomponent springside site on Cuny Table. This pottery was not typed (Lueck and Butterbrodt 1984:15). Plain, sand-tempered ceramics were found at 39SH81, a chalcedony quarry (Lueck and Butterbrodt 1984:17). Incised, grit-tempered pottery, probably from a single vessel was found at 39SH82. At 39SH90 cord-impressed ceramics were found in a hearth dated at 845 BP (Lueck and Butterbrodt). Cord-marked, punctated sherds were found eroding from a buried soil at 39JK66, along with chipped-stone artifacts, bone, and a possible hearth (Lueck and Butterbrodt 1984). At the Long John Site, 39JK68, cord-impressed and burnished ceramics were found in a hearth dated at 1200 BP. A hearth designated 39SH93, containing a grinding slab but no ceramics, was dated at 785 BP. Several other sites in the Badlands contain small numbers of sherds associated with

undated artifact scatters (Lueck and Butterbrodt 1984; Sundstrom and Malone 1982). Ceramics identified as Woodland wares were found at 39JK63, along with Hanna, Besant, Avonlea, Pelican Lake, and Prairie Side-Notched, and Late Prehistoric triangular unnotched points. The relationship of the ceramics to the projectile points was not determined (Lueck and Butterbrodt 1984). A site with a Pelican Lake point, 39JK70, contained two cord-impressed and two plain sherds (Lueck and Butterbrodt 1984). Another site with Pelican Lake and Late Prehistoric triangular unnotched points was dated at 2050 and 1970 BP. Two Plains Side-Notched projectile points were noted at 39SH84, a nonceramic site. Site 49CK1396 yielded a localized ceramic type reminiscent of Middle Missouri wares. A date of 950 BP was associated with this pottery (Schneider *et al.* 1997).

Excavations at the Johnny Site in the Badlands yielded a component dated at 950 CE. This was identified as an Initial Middle Missouri early summer camp (Johnson 1993). The Initial Middle Missouri assemblage contained 315 sherds from about nine vessels, arrow points, triangular bifaces, preforms, Badlands knives (reworked pieces of plate chalcedony), retouched flakes, scrapers, a bone spatula, and an incised rib. All are congruent with Initial Middle Missouri materials found along the Missouri River. Bone included deer or pronghorn and duck. Virtually all of the tool stone was from local (Badlands) sources. A series of sites in the Fog Creek drainage contained Plains Woodland, Initial Middle Missouri, and Plains Village Tradition materials (Johnson 1993). These sites were interpreted as temporary camps. They contained thin buried cultural levels comprising charcoal, ash, fire-cracked rock, and flakes, with some bone and potsherds. Ceramics at 39PN590 were similar to Extended Coalescent ware. A Plains Village unnotched triangular projectile point was also found at the site, along with endscrapers, groundstone fragments, chipping debris, and fire-cracked rock. The site was interpreted as an occupation (Rood *et al.* 1984).

These results indicate four things. First, the Badlands area was used extensively during the Late Prehistoric period. Second, many if not most Late Prehistoric sites in the area contain ceramics of various types. This suggests movement of people or technology from the Middle Missouri culture area westward along the White River. Third, some archaeological material in the Badlands can be confidently affiliated with Plains Village Tradition complexes from the Missouri River and from Nebraska. Fourth, the Badlands and the area east of the Black Hills appear to have been used by a variety of groups, with homelands to the east, west, and south of the area, throughout the Late Prehistoric period.

## **Environmental Setting**

River terraces and bluffs

## **Temporal Boundaries**

900 – 1850 CE

## **Spatial Boundaries**

Plains Village sites occur throughout the state, but are concentrated along the Missouri trench and river east of the Missouri.

Lehmer		Ahler (North Dakota only)		Tiffany		Johnson	
IMM Variant 900-1400	Great Oasis	MM comp. 1000-1500	Fort Yates Huff Clark's Creek Nailati	Early MM 900-1300	Chamberlain Variant 900-1300 Phases: Anderson Grand Detour Swanson	IMM Variant Ft. Randall 900-1200	Great Oasis
	Swanson Grand Detour					IMM Variant Big Bend 900-1300	Great Oasis Swanson Grand Detour
	Anderson					IMM Variant Bad- Cheyenne 900-1250	Anderson
	Cambria Big Sioux Little Sioux				Mill Creek Variant 900-1300 Phases: Great Oasis Cambria Big Sioux Little Sioux	IMM Variant SW Minn & NW Iowa 900-1300	Great Oasis Cambria Big Sioux Little Sioux
	Lower James Brandon				Lower James Brandon	IMM Variant SE South Dakota 900-1300	Lower James Brandon
EMM Variant 1100-1500	Clark's Creek Nailati Fort Yates	Painted Woods 1300-1525	Clark's Creek Nailati	Early- Middle transition	No. Extended Variant Clark's Creek Phase Ft. Yates Phase	EMM Variant Grand- Moreau 1100-1250	Fort Yates
					Chamberlain Variant 1100-1300	EMM Variant Big Bend 1100-1350	Grand Detour
	Thomas Riggs				So. Extended Variant Thomas Riggs Phase	EMM Variant Bad- Cheyenne 1100-1500	Thomas Riggs
					Mill Creek Variant 1100-1300		
TMM Variant 1500-1675	Huff			Final period	Huff Phase		
IC Variant	Arzberger					IC Variant Big Bend	Campbell Creek

1300-1500	Campbell Creek Anoka			1300-1500	Arzberger
EC Variant 1500-1675	La Roche  Shannon  Le Compte Akaska Bennett Redbird			EC Variant Fort Randall 1500-1600  Big Bend 1450-1600  Bad- Cheyenne 1400-1600  Grand- Moreau 1450-1600	La Roche  La Roche Shannon  La Roche Le Compte  Le Compte La Roche Akaska
PCC Variant 1675-1886	Knife Heart River  Felicia Talking Crow  Bad River Le Beau			Fort Randall 1650-1750  Big Bend 1600-1800  Bad- Cheyenne 1600-1800  Grand- Moreau 1600-1800	Talking Crow  Felicia Talking Crow Bad River  Bad River Le Beau  Le Beau Historic Arikara

*Table 2. Middle Missouri taxonomy from Lehmer (1971), Ahler (1993), Tiffany (2003), and C. Johnson (2007). Abbreviations: IMM – Initial Middle Missouri, MM – Middle Missouri, EMM – Extended Middle Missouri, IC – Initial Coalescent, EC – Extended Coalescent, PCC – Post-Contact Coalescent.*

## **Property Types**

Large and small, fortified and unfortified villages; camp sites; special use sites; individual burials and cemeteries.

## **Locational Characteristics**

Village sites tend to be located on the lower river terraces with garden plots in the river floodplains and special use sites on the high bluffs. Many village were sited to take advantage of natural defenses, such as high, steep river bluffs. Hunting, eagle-trapping, and other special use sites are scattered far from the villages in the western part of the state.

## **Context Definition**

Plains Village sites are identified from house, fortification, and village features and from distinctive artifact assemblages. The latter include various types of ceramic vessels, generally globular in shape with thin walls and a wide variety of decorative elements. Plains Village sites typically contain large assemblages of bone and shell artifacts, as well.

## **Condition**

Many Plains Village sites in South Dakota were destroyed by construction of hydroelectric projects. Shoreline erosion from reservoirs continues to erode the remaining sites. Some sites are also threatened by looting and inadvertent damage from recreational activity.

## **Voids in Research**

Most existing knowledge of Plains Village manifestations in South Dakota comes from hastily completed salvage excavation projects. Archaeologists are now reexamining data from the salvage excavations and applying new techniques, such as remote sensing, to research in the area. Sites in areas away from the Missouri River have received relatively little attention. More research is needed on many of the Plains Village complexes in order to better define the history of each and the interactions of various Plains Village groups.

## **Research Topics**

1. Develop related support studies (e.g., microfauna, pollen, soil), building on stratigraphic work.
2. Continue basic data collection and development of comparative collections from ceramic sites located on the eastern edge of the Coteau du Missouri. What is the relationship (if any) between these Plains Village populations and groups from the Missouri River Trench and James River Basin?
3. Are the early Plains Village sites, such as the Hartford Beach village (Northeast Lowlands Region), a transitional cultural group or a relict fringe group? Define the cultural affiliation of these groups.

4. Were intergroup relations peaceful, or does the presence of fortifications at some sites indicate conflict between groups?
5. What was the division of labor by sex and social status?
6. What are the spatial and temporal limits of various Plains Village manifestations?
7. Reanalyze collections and refine the ceramic typology and seriation.
8. What was the system of interrelationships between Plains Village groups between village and non-village cultures?
9. What explains the Plains Village aspects of certain sites in the Black Hills, Badlands, Central Cheyenne, Grand-Moreau Tablelands, and Sandstone Buttes regions?

## **Research and Management Goals**

Many Plains Village sites in South Dakota were destroyed or inundated when dams were constructed along the Missouri River. The sites that remain along the Missouri River are threatened by shoreline erosion and looting. Efforts should be made to stabilize or excavate these sites before more information is lost. Research should focus on revisiting early work, especially as regards dating, to more clearly define the time span and movements of the various cultural groups present in South Dakota during the Plains Village period.

## **National Register Listings**

39CA1, 39FA1154, 39HN204, 39HU62, 39HU114, HU218, 39HU243, 39ST220, 39ST221, 39ST223, 39ST225, and 39ST234. Also, see lists for Middle Missouri, Coalescent, and Oneota.

## **Archaeological Regions**

Bad-Cheyenne, Big Bend, Fort Randall, Lower James, Middle James, Upper James, Lower Big Sioux, Upper Big Sioux, Yankton, Grand-Moreau, White River Badlands, Belle Fourche, Sandstone Buttes, South Fork Cheyenne, Lower White, Northeast Lowlandss, Grand-Moreau Tablelands

## **Plains Village Sites with Unassigned Components**

39BK13, 39BN30, 39BR23, 39BU2, 39BU217, 39CA215, 39C030, 39C064, 39DA8, 39DA26, 39DA27, 39DE6, 39DW59, 39DW66, 39DW84, 39FA860, 39FA861, 39GR7, 39GR11, 39GR28, 39HD1, 39HD4, 39HE201, 39HE202, 39HE203, 39HE301, 39HU3, 39HU4, 39HU5, 39HU7, 39HU8, 39HU10, 39HU12, 39HU15, 39HU16, 39HU22, 39HU23, 39HU24, 39HU26, 39HU27, 39HU29, 39HU30, 39HU31, 39HU32, 39HU33, 39HU34, 39HU37, 39HU38, 39HU39, 39HU45, 39HU46, 39HU61, 39HU62, 39HU63, 39HU83, 39HU95, 39HU114, 39HU131, 39HU132, 39HU207, 39HU217, 39HU218, 39HU221, 39HU222, 39HU223, 39HU224, 39HU225, 39HU231, 39HU233, 39HU234, 39HU238, 39HU241, 39HU250, 39JK2, 39LM1, 39LM2, 39LM4, 39LM8, 39LM12, 39LM17, 39LM51, 39LM55, 39LM65, 39LM67, 39LM69,

39LM70, 39LM82, 39LM83, 39LM84, 39LM85, 39LM92, 39LM94, 39LM95, 39LM98, 39LM111, 39LM112, 39LM113, 39LM115, 39LM117, 39LM160, 39LM166, 39LM203, 39LM206, 39LM213, 39LM215, 39LM216, 39LM218, 39LM219, 39LM220, 39LM228, 39LM234, 39LM245, 39LM246, 39LM301, 39LM302, 39LM304, 39MD133, 39MD205, 39MH23, 39MH82, 39ML7, 39ML56, 39ML57, 39MT9, 39MT12, 39PN326, 39PN561, 39PN586, 39PN943, 39P02, 39P05, 39P06, 39P08, 39P011, 39P012, 39P023, 39P0209, 39SH14, 39SH27, 39SH37, 39SH126, 39SL1, 39SL2, 39SL3, 39SL4, 39SL7, 39SL8, 39SL9, 39SL11, 39SL12, 39SL13, 39SL14, 39SL15, 39SL16, 39SL17, 39SL18, 39SL19, 39SL20, 39SL21, 39SL22, 39SL23, 39SL24, 39SL25, 39SL26, 39SL27, 39SL28, 39SL29, 39SL33, 39SL34, 39SL36, 39SL50, 39SL51, 39SL55, 39SL56, 39SL57, 39SL312, 39SP5, 39SP125, 39ST2, 39ST3, 39ST4, 39ST5, 39ST7, 39ST10, 39ST12, 39ST18, 39ST21, 39ST23, 39ST24, 39ST25, 39ST26, 39ST33, 39ST37, 39ST38, 39ST42, 39ST44, 39ST45, 39ST46, 39ST50, 39ST65, 39ST66, 39ST67, 39ST68, 39ST89, 39ST90, 39ST97, 39ST98, 39ST120, 39ST122, 39ST129, 39ST174, 39ST201, 39ST202, 39ST203, 39ST220, 39ST221, 39ST223, 39ST225, 39ST226, 39ST228, 39ST229, 39ST230, 39ST233, 39ST245, 39ST251, 39ST252, 39ST253, 39UN1, 39WW89, 39WW119, 39ZB202

### **Coalescent Sites with Unassigned Components**

39FK12, 39LM31

### **Site Classified as Woodland or Plains Village**

39GT5

### **Site Classified as Protohistoric Plains Village**

39GR202

### **Sites Classified only as Earth Lodge Village**

39AR1, 39AR2, 39AR3, 39AR4, 39AR5, 39AR6, 39AR7, 39AR202, 39AR203, 39AR204, 39AR205, 39AR206, 39AR207, 39AR208, 39AR209, 39BF7, 39BF205, 39BF206, 39BF226, 39BF301, 39B050, 39BR1, 39BR2, 39BR3, 39BR4, 39BR5, 39BR7, 39BR8, 39CA9, 39CA201, 39CA202, 39CA203, 39CA204, 39CA205, 39CH2, 39CH3, 39CH7, 39CH203, 39C02, 39C04, 39C07, 39C08, 39C015, 39C017, 39C018, 39C019, 39C020, 39C040, 39C041, 39C042, 39C043, 39C048, 39C049, 39C050, 39C052, 39C0202, 39C0203, 39C0205, 39C0206, 39C0207, 39C0208, 39C0210, 39DW4, 39DW5, 39DW7, 39DW8, 39DW13, 39DW15, 39DW16, 39DW17, 39DW18, 39DW20, 39DW201, 39DW202, 39DW203, 39DW204, 39DW205, 39DW206, 39DW207, 39DW208, 39DW209, 39DW210, 39DW211, 39DW212, 39DW214, 39DW215, 39DW216, 39DW217, 39DW218, 39DW221, 39DW223, 39DW227, 39DW228, 39DW229, 39DW230, 39DW232, 39DW235, 39DW236, 39DW241, 39DW254, 39GT6, 39HU14, 39LM3, 39LM20, 39LM25, 39LM237, 39WW6, 39WW8, 39WW201, 39WW202, 39WW203, 39WW204, 39WW206, 39WW300

## **Sites Classified Only as Village Sites**

39BF1, 39BF203, 39BF211, 39CH1, 39CH6, 39CH206, 39C021, 39C022, 39C029, 39C037, 39C046, 39CU521, 39CU679, 39FA1105, 39GR2, 39GR3, 39HN2, 39HT1, 39HT32, 39HU11, 39HU69, 39HU71, 39HU76, 39HU77, 39HU230, 39HU236, 39HU237, 39JN1, 39LM5, 39LM9, 39LM10, 39LM11, 39LM13, 39LM14, 39LM15, 39LM16, 39LM18, 39LM19, 39LM21, 39LM22, 39LM27, 39LM28, 39LM34, 39LM35, 39LM38, 39LM41, 39LM66, 39LM96, 39LM97, 39LM120, 39LM121, 39LM122, 39LM123, 39LM210, 39LM211, 39LM214, 39LM217, 39LM231, 39LM235, 39LM242, 39LM243, 39LM244, 39LM254, 39LM326, 39LN5, 39MP1, 39MP2, 39R013, 39R016, 39R019, 39R020, 39SL204, 39ST8, 39ST13, 39ST71, 39ST72, 39ST76, 39ST231, 39ST236

## **National Register Listings**

39CA1, 39FA1154, 39HN204, 39HU62, 39HU114, HU218, 39HU243, 39ST220, 39ST221, 39ST225, 39ST223, and 39ST234. Also, see lists for Middle Missouri, Coalescent, and Oneota.

## **Bibliography**

Lehmer 1971; Wedel 1961; Wood 1998

## **Middle Missouri Tradition**

### **Overview**

The Middle Missouri tradition likely represents the social and technological base for two of the historic village nations in the Northern Plains: the Mandan, and their cultural and linguistic neighbors, the Hidatsa. The Mandan, a historic North Dakota tribe, are generally linked to the Initial Middle Missouri variant, Extended Middle Missouri variant, and Terminal Middle Missouri variant of the Middle Missouri tradition (Wood 1967a, 2001), while the majority of the Hidatsa, also a historic North Dakota tribe, have a more complex and obscure culture history that is difficult to relate to the existing taxonomic framework (see Ahler *et al.* 1991). It is possible that some of the Hidatsa, namely the Awatixa, may derive from the Extended and Terminal Middle Missouri variants of the Middle Missouri Tradition (Toom 1992a:581).

Alfred Bowers (1965) suggested the existence of two major internal subgroups (northern and southern) of the Mandan prior to 1300. The northern subgroup eventually settled in the vicinity of the mouth of the Heart River in North Dakota. Bowers recognized three archeological antecedents for this group, the Cannonball focus (Lehmer's Extended Middle Missouri), the Huff focus (Lehmer's Terminal Middle Missouri), and the Heart River focus (Lehmer's Post-Contact Coalescent and Disorganized Coalescent). Oral tradition indicates that simultaneously with settlement of the northern Mandan subgroup in the Heart River area, the southern subgroup remained far to the south, eventually moving west towards the Black Hills, and then moving back to the Missouri River, establishing villages at the mouths of the Cheyenne, Moreau, and Grand rivers by around 1500 CE (Bowers 1948:96). By this time, the southern Mandan had adopted the use of circular lodges and made pottery exhibiting tool-impressed decorations. Oral tradition suggests that it was after 1500 that the southern Mandan moved to the Knife-Heart region and the

first of the Hidatsa groups moved onto the Missouri River from the east. However, some researchers have suggested that the Awatixa division of the Hidatsa nation may have been in the upper Knife-Heart region earlier (Toom 1988; Wood and Hanson 1986:36).

Subsequent researchers have presented refinements to this basic model, but have generally agreed that the Initial and Extended variants are distinct cultural, temporal, and geographic expressions of the Middle Missouri tradition, most likely stemming from a common ancestral group. Some research postulates only a fifty-year difference between the earliest dates for Initial Middle Missouri (in South Dakota) and the earliest dates for Extended Middle Missouri (in North Dakota). Given such a short timeframe, it would appear unlikely that the Extended Middle Missouri in North Dakota developed from the Initial Middle Missouri in South Dakota. A more detailed review of the dating evidence is necessary before concluding, however, that the Initial Middle Missouri disappears from the archeological record with no demonstrable association between Initial Middle Missouri peoples and any historic nation in the Great Plains (Krause 2001; Wood 2001).

Certainly, multiple phases likely occur within several of the above-named units. W. Raymond Wood (1967) regards sites of the Thomas Riggs focus as the earliest village sites culturally cognate with the Mandan. Tiffany remarks that the formal definition of a Southern Extended variant (Mandan) and a Northern Extended variant (Hidatsa) “provides a means by which the Hidatsa can be included in the Middle Missouri tradition and Bowers’s ideas can be tested” (Tiffany 1983:104). Lehmer saw evidence of a direct cultural continuity from the Fort Yates phase into the Terminal Middle Missouri, with the small, unfortified sites of the Fort Yates phase being replaced by much larger, heavily fortified villages. Terminal Middle Missouri sites are fewer in number than Extended Middle Missouri sites. Dates from the Huff site (Terminal Middle Missouri) average 1490 CE (Thiessen 1977:Note 1). “Ceramics from Terminal Middle Missouri villages are indistinguishable from those of the Extended Middle Missouri variant. They differ only in the proportion of various types” (Fawcett 1988:70-71).

## **Environmental Setting**

River terraces and bluffs.

## **Temporal Boundaries**

900 to 1675 CE

## **Spatial Boundaries**

Entire state, but mostly occurring along the Missouri, James, and Big Sioux rivers.

## **Property Types**

Villages, hunting camps

## **Locational Characteristics**

Major river valleys in the central and eastern parts of the state.

## **Context Definition**

The Middle Missouri tradition is the earliest expression of the Plains Village pattern in South Dakota. Middle Missouri people lived in villages with long, semi-subterranean rectangular houses with entrance ramps. Villages display a range of size and arrangement, with most containing between twenty and thirty houses. Some were fortified with a ditch and palisade system. Villages were placed on the higher terraces of the major river systems, with the floodplains and lower terraces used for family fields. People raised corn, beans, squash, sunflowers, and tobacco, and hunted for bison away from the villages on a seasonal basis. They made distinctive globular pots with decorations on the rims and shoulders and made a complex array of bone and stone tools. Stone tools include plate chalcedony knives, small formal end scrapers, chipped-stone knives, polish celts, and grooved mauls. Bone tools include awls, quill flatteners, scapula knives with hooked ends, and metapodial fleshers (R. Alex 1981a; Lehmer 1954). Ceramic vessels have flared or recurved (S-profile) rims. The two basic divisions of the Middle Missouri, Initial and Extended, are largely coeval, but generally occupied different stretches of the Missouri River.

## **Condition**

Many sites were inundated or destroyed by the construction and operation of hydroelectric dams on the Missouri River. Shoreline erosion is a serious and ongoing problem that results in the loss of sites and portions of sites, as well as attracting looters. A few sites remain intact.

## **Voids in Research**

A significant void is information about the Woodland predecessors of Middle Missouri sites. It is not clear when or why people began to gather into villages in the Middle Missouri region. The kind and extent of influences from Mississippian cultures to the south and east are not well understood. Little is known of Middle Missouri burial practices. The function of fortification systems is not clear, as some fortified villages do not seem to have been vulnerable to outside attacks.

## **Research Topics**

1. How did the Middle Missouri tradition develop? To what extent was it an evolution of local Woodland cultures versus importation of new peoples and ideas?
2. The chronology of the Eastern/Mill Creek variant needs to be reexamined to show more clearly whether the tradition is older in the east than in the west.
3. How did Initial and Extended groups interact? How did these groups interact with non-village groups that came into or near their territories?
4. What was the purpose of fortification?

5. To what extent were Middle Missouri peoples involved in regional and even continental trade? Since each village had the ability to sustain itself, what motivated trade?
6. What were the advantages and disadvantages of the more sedentary, farming-based economic systems of the Middle Missouri?
7. Is there evidence that these groups employed a matrilineal system of residence as did the later Mandan and Hidatsa societies?

## **Research and Management Goals**

As noted, many of the remaining sites along the Missouri River are threatened by shoreline erosion and looting. Efforts should be made to stabilize or excavate these sites before more information is lost. Research should focus on revisiting early work, especially as regards dating, to more clearly define the time span and movements of Middle Missouri societies.

## **National Register Listings**

See lists for Initial Middle Missouri, Mill Creek, Extended Middle Missouri, and Terminal Middle Missouri

## **Archaeological Regions**

Bad-Cheyenne, Big Bend, Fort Randall, Lower James, Middle James, Lower Big Sioux, Upper Big Sioux, Yankton, Grand-Moreau, White River Badlands, Belle Fourche, Sandstone Buttes

## **Sites**

See lists for Initial Middle Missouri, Mill Creek, Extended Middle Missouri, and Terminal Middle Missouri

## **Bibliography**

Ahler 2007; R. Alex 1981a; Johnson 2007; Lehmer 1971; Ludwickson *et al.* 1981; Toom 1992a; Wood 2001

# Initial Middle Missouri Variant

## Overview

About 85 sites in the Middle Missouri region have been reported to contain Initial Middle Missouri cultural materials. These sites extend north from Fort Randall Dam to the Cheyenne River; most are concentrated in the area from around the White River to the Cheyenne River. Other Initial Middle Missouri sites occur along the James, Big Sioux, and Little Sioux rivers in eastern South Dakota and northwestern Iowa.

Initial Middle Missouri dates cluster between 1000 and 1300 CE. Many of these sites are fortified. Houses were large, rectangular structures supported by a line of central posts holding up a ridgepole. Smaller posts supported the walls, and stringers were placed along the ridgepole to support the roof. These houses were covered with earth or possibly materials such as bark. Long, narrow entryways were general oriented to the southwest. A large central hearth for heat and cooking was placed inside the house near the entrance and large, bell-shaped pits for storing dried crops and other items were placed near the sides of the house. Subsistence strategies appear to have been directed towards exploitation of bison, with lesser emphasis on floodplain fauna (Chomko 1976; Ludwickson *et al.* 1981:151; Wood 2001). Horticulture was also important (Benn 1974). Crops included corn, beans, squash, sunflower, and tobacco. Burial patterns are not clear, but may have employed platform burials and reuse of Woodland era mounds (Wood 2001). Some classification schemes include the Great Oasis complex within the Initial Middle Missouri; others place it as a terminal Woodland complex. (For more information about Great Oasis, see the Woodland section, above.)

The Initial Middle Missouri artifact assemblage consists of pottery, chipped stone, tools, grinding stones, bone tools, and copper, shell, and obsidian imported from the Great Lakes, Pacific and Gulf coasts, and western Wyoming or eastern Idaho. Catlinite pipestone from western Minnesota is also common in Initial Middle Missouri sites. Pottery took the form of globular, grit-tempered vessels produced by molding and thinning with paddle and anvil. Most vessels have rounded shoulders and decoration on the shoulders and rims. Rims are straight, flared, or S-shaped. Potters usually made simple incised or cord-impressed designs on the rims, but sometimes extended the field of decoration to the shoulders (Wood 2001). Typical bone tools are hoes made of bison scapulae, hide-working tools, scoops made of bison or mountain sheep horns, knives, awls, and arrow shaft wrenches. Groundstone items included hammers, mauls, celts, shaft abraders, manos and metates, and smoking pipes.

Within the Middle Missouri subarea, the Swanson, Anderson, and Grand Detour phases have been proposed for the Initial Middle Missouri variant. Ludwickson *et al.* (1981:143) have discussed the problems of phase-level taxa, stating that the “Grand Detour and Anderson phases seem to differ little in terms of any material culture parameter, and the differences perceived between the Missouri trench sites and the James and Big Sioux sites to the east might change if a single, consistent ceramic typology was applied.”

## Environmental Setting

River terraces and bluffs

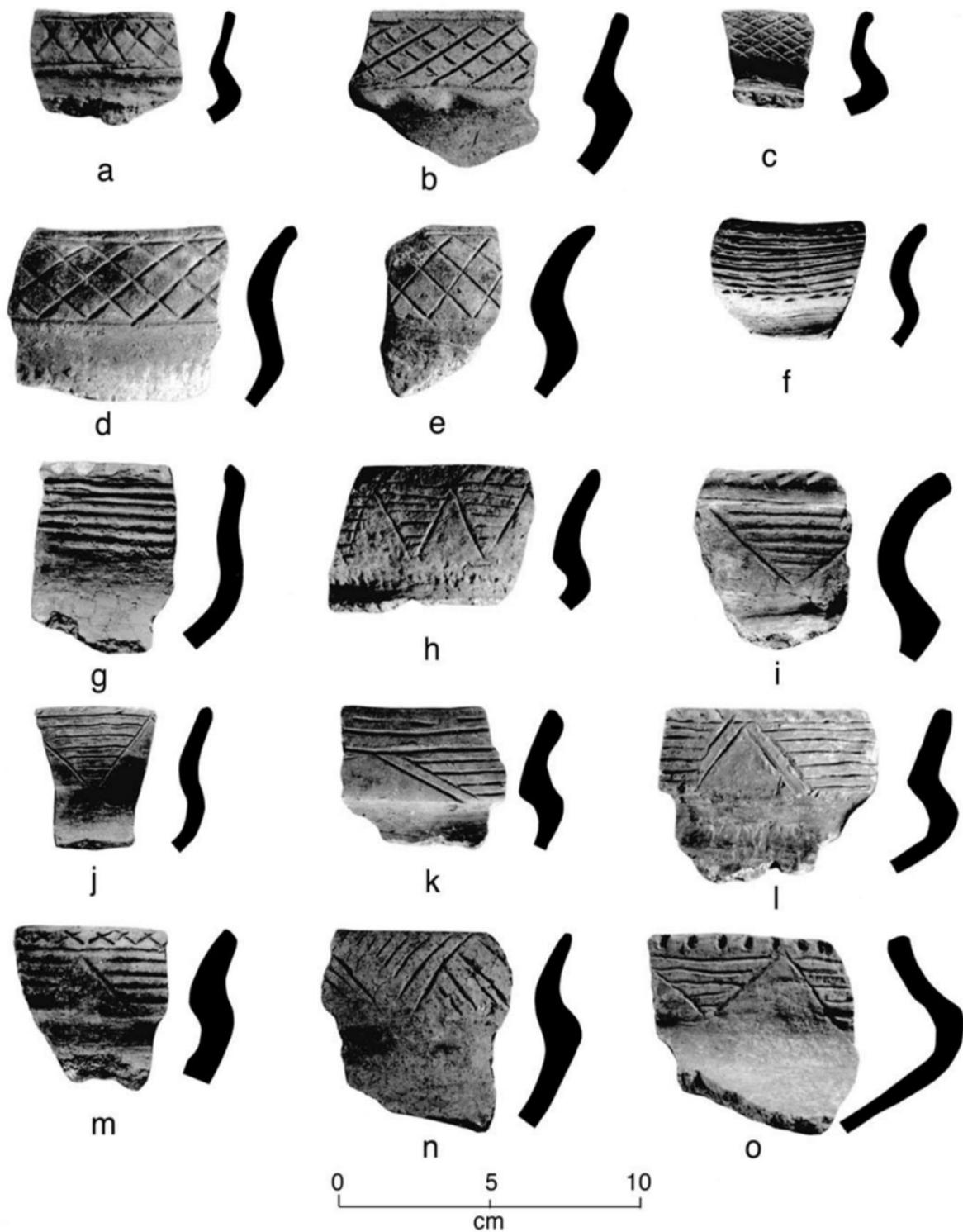


Figure 41. Initial Middle Missouri rim sherds: a–e, S-shaped cross-hatch incised rim; f–g, S-shaped horizontal incised rim; h–o, triangular incised rim (from C. Johnson 2007).

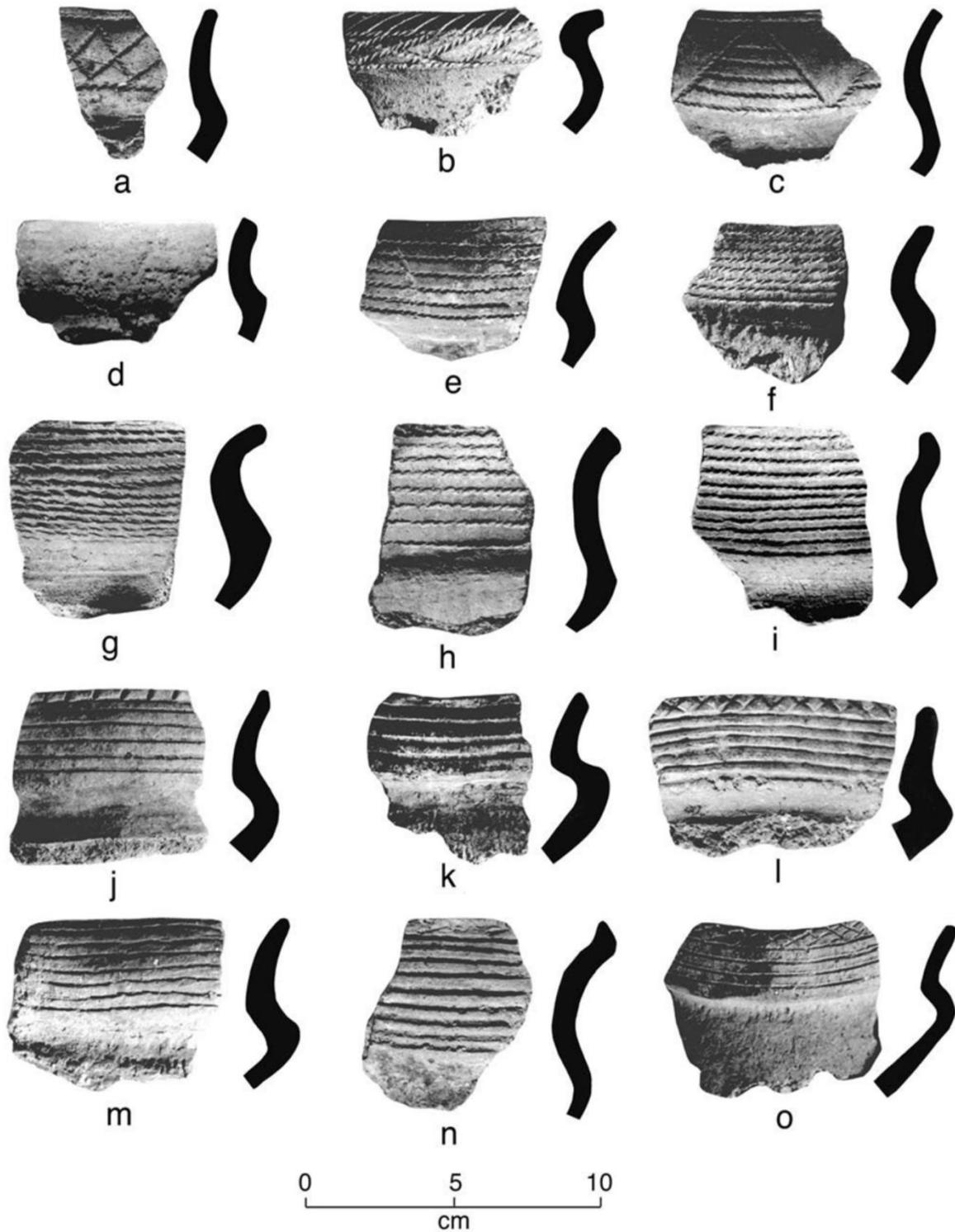


Figure 42. Initial Middle Missouri rim sherds: a–b, S-shaped crosshatch cord impressed rim; c, S-shaped triangular incised rim; d, S-shaped undecorated; e–i, S-shaped horizontal cord impressed rim; j–o, S-shaped horizontal incised rim (from C. Johnson 2007).

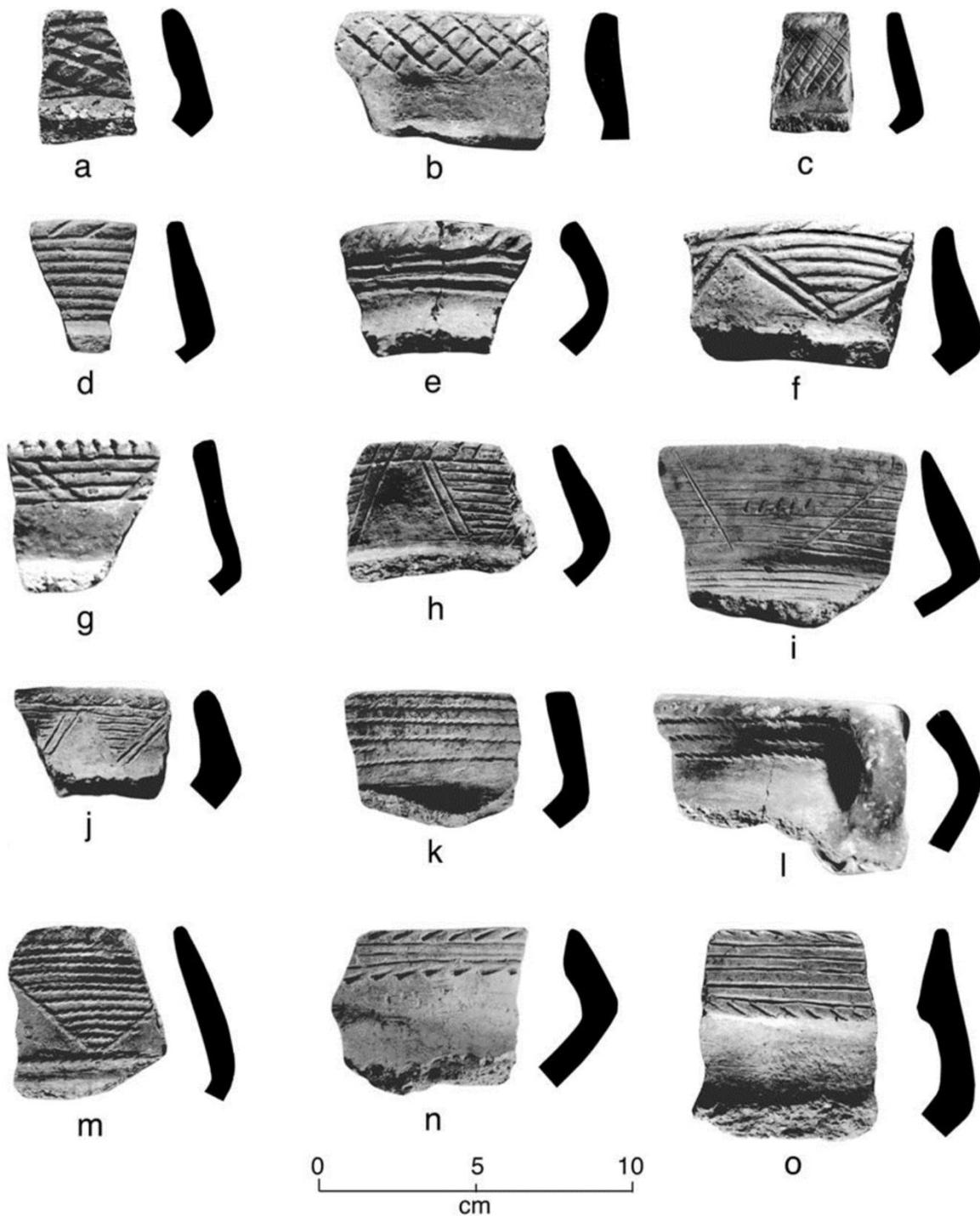


Figure 43. Initial Middle Missouri rim sherds: a–c, straight cross-hatch incised rim; d–e, straight horizontal incised rim; f–j, straight triangular incised rim; k–l, straight cord impressed rim; m, straight triangular cord impressed rim; n–o, S-shaped (collared) horizontal incised rim (from C. Johnson 2007).

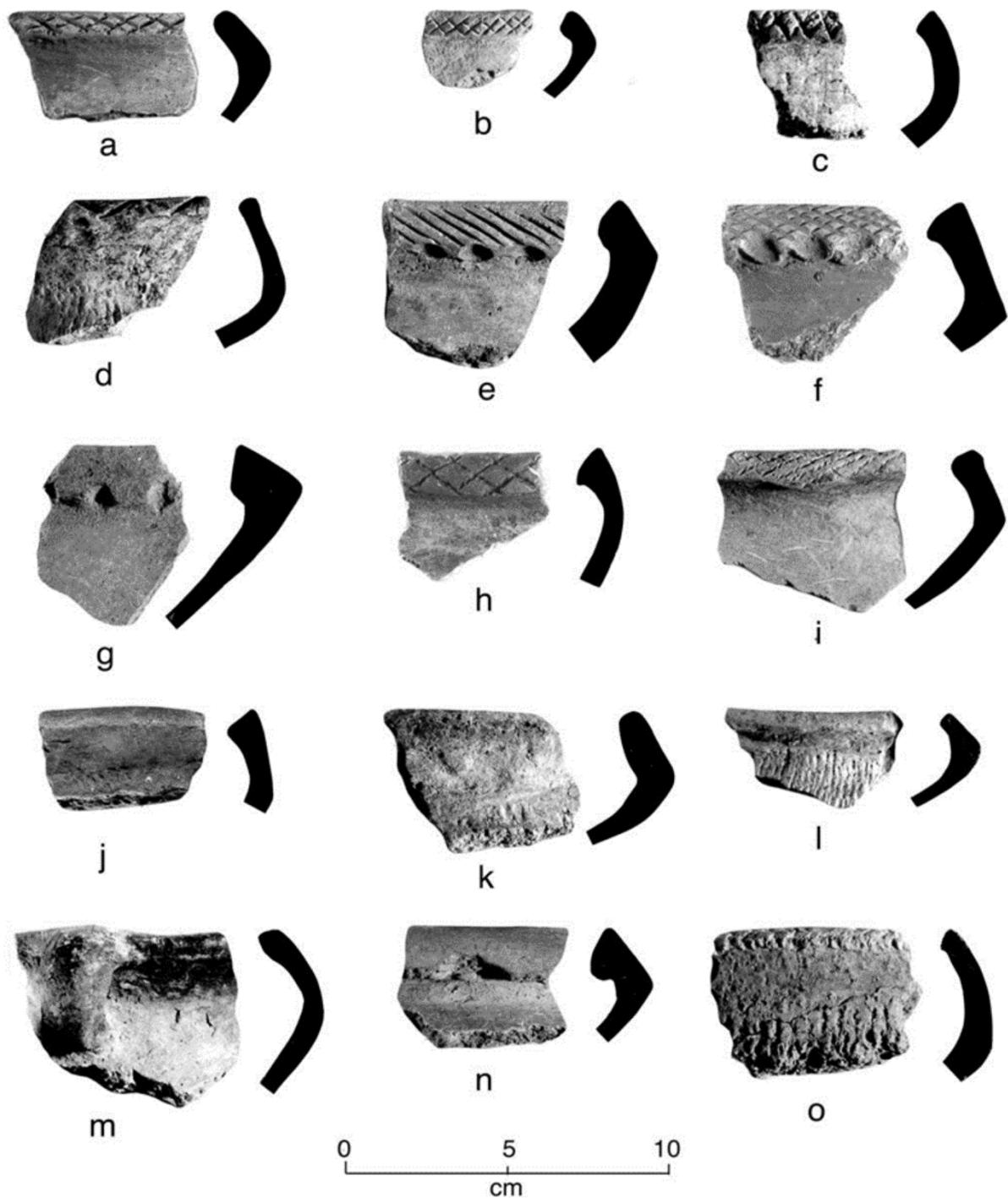


Figure 44. Initial Middle Missouri rim sherds: a–c, f, straight cross-hatch incised lip; d, straight zig-zag incised lip; e, straight tool/finger impressed lip; g, straight tool impressed lip; h–i, straight cross-hatch cord impressed lip; j–o, straight undecorated (from C. Johnson 2007).

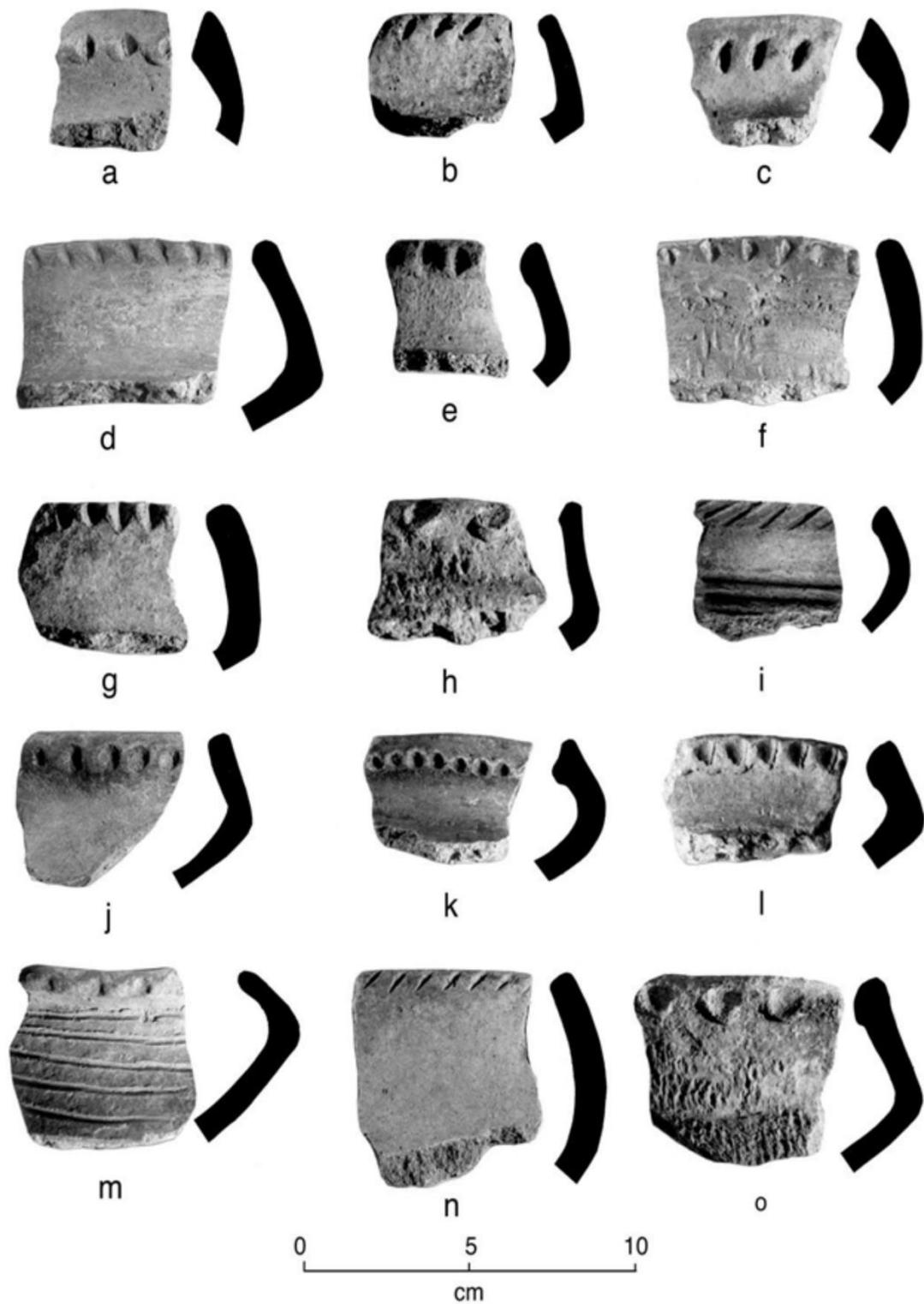


Figure 45. Initial Middle Missouri rim sherds: a–o, straight tool/finger impressed lip (from C. Johnson 2007).

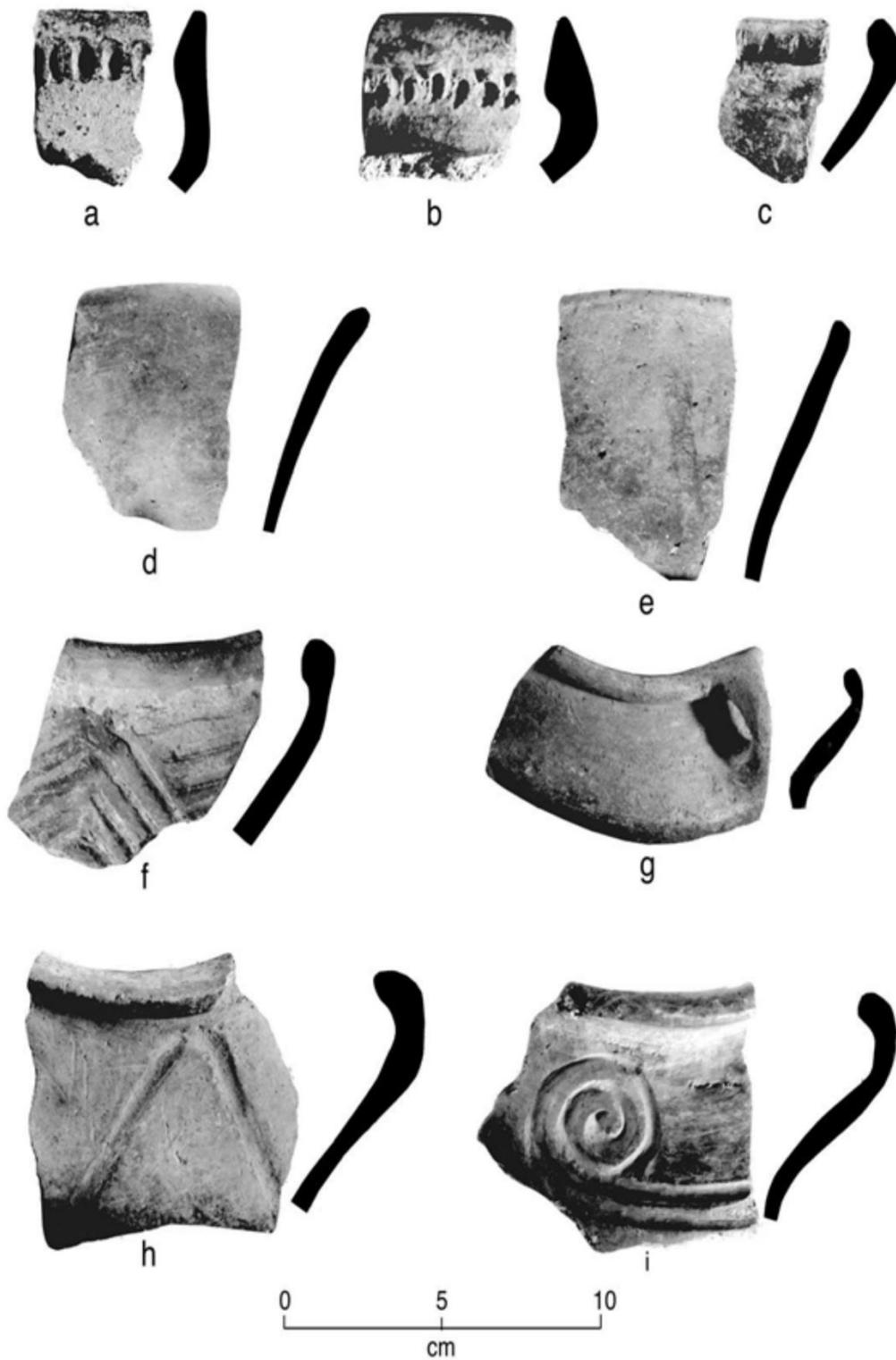


Figure 46. Initial Middle Missouri rim sherds: a–b, S-shaped (collared) tool impressed rim; c, f–i, Rolled rim; d–e, Bowls (from C. Johnson 2007).

## **Temporal Boundaries**

1000-1300 CE

## **Spatial Boundaries**

The southeastern two-thirds of South Dakota, primarily along the Missouri River from the mouth of the Cheyenne River to Chamberlain.

## **Property Types**

Villages

## **Locational Characteristics**

Terraces and bluffs of the Missouri, James, and Big Sioux rivers. Initial Middle Missouri sites form three clusters: one on the Missouri from Chamberlain north to the Cheyenne River; one in the lower portion of the James River; and one near Sioux Falls on the Big Sioux.

## **Context Definition**

Initial Middle Missouri sites are recognized on the basis of house forms, village configurations, and pottery types. In general, houses are long, rectangular gabled structures with a long, narrow entryway, and an interior hearth and storage pits. Villages contain between twenty and thirty houses. Some are fortified with a ditch and palisade system. Pottery takes various forms with flared or S-shaped rims, smooth surfaces, and decorations on the rim and shoulders.

## **Condition**

Many sites were destroyed or inundated by the Oahe and Big Bend dams, however some sites remain intact.

## **Research Topics**

1. Clarify the relationship between the Initial Middle Missouri variant and the Extended Middle Missouri variant. What happens to Initial Middle Missouri if it does not develop into Extended Middle Missouri?
2. The current ceramic classification needs to be revised to account for differences between Big Bend area Initial Middle Missouri variant sites and Chamberlain area Initial Middle Missouri variant ceramic assemblages.
3. What is the relationship between Initial Middle Missouri variant sites located outside the Missouri River trench with sites on both the James and Missouri rivers (e.g., Alex 1981a, 1981b)?
4. Are there Initial Middle Missouri sites in the Black Hills and other parts of western South Dakota?

5. Should Great Oasis be considered an Initial variant phase (Johnson 2007; Tiffany 1983)?

## **Research and Management Goals**

Sites with Woodland components underlying Initial Middle Missouri levels will be important to understanding the development of the Plains Village pattern. Existing data, including pottery types and dates, should be revisited to provide a more complete picture of Initial Middle Missouri social structure and patterns of interactions with other groups. Sites subject to shoreline erosion should be excavated to prevent further loss of data.

## **National Register Listings**

39BF11, 39DV1, 39DV2, 39HS1, 39HS23, 39HU75, 39LM1, 39LM2, 39LM22, 39LM33, 39LM208, 39LM225, 39LM226, 39LM247, 39ST55, 39ST56, 39ST88, 39ST90, 39ST223, 39ST228, 39ST235, 39ST238

## **Archaeological Regions**

Big Bend, Bad Cheyenne, Fort Randall, Lower Big Sioux, Upper Big Sioux, Lower James, Middle James, Yankton, Belle Fourche, White River Badlands, Sandstone Buttes

## **Sites**

39BF4, 39BF11, 39BF12, 39BF20, 39BF44, 39BF201, 39BF215, 39BF221, 39BF227, 39BK20, 39BK45?, 39BR13, 39BR16, 39BR29, 39BR39, 39BR101, 39CA3, 39CH5, 39CH205, 39DA7, 39DA15, 39BO100?, 39DV2, 39DV3, 39GR53, 39HS1, 39HS23, 39H846, 39HS75, 39HU60, 39HU75, 39HU211, 39HU213, 39HU223, 39JE1, 39JE2, 39LK18, 39LM1, 39LM2, 39LM4, 39LM7, 39LM33, 39LM47, 39LM55, 39LM57, 39LM58, 39LM59, 39LM84, 39LM146, 39LM174, 39LM208, 39LM209, 39LM212, 39LM225, 39LM226, 39LM232, 39LM247, 39LM248, 39LN7, 39MH1, 39MH30, 39PN561, 39SH68, 39SH133, 39ST9, 39ST11, 39ST12, 39ST16, 39ST19, 39ST23, 39ST30, 39ST37, 39ST38, 39ST55, 39ST56, 39ST69, 39ST74, 39ST88, 39ST89, 39ST91, 39ST214, 39ST223, 39ST224, 39ST235, 39ST238

## **Bibliography**

Ahler and Toom 1995; Johnson 2007; Krause 2001; Lehmer 1971; Winham and Calabrese 1998; Wood 2001

## **Eastern or Mill Creek Variant**

### **Overview**

The eastern Initial Middle Missouri or Mill Creek variant is similar to the Initial Middle Missouri variant defined for the Big Bend and Bad-Cheyenne region. This complex may date somewhat earlier than the western version, suggesting that the Middle Missouri tradition arose first around southeastern South Dakota, northwestern Iowa, and southwestern Minnesota. At present, it is unclear whether the spread of this cultural complex to central South Dakota was a matter of migration or cultural interaction. This variant is roughly synonymous with the Over focus or phase proposed by Wesley Hurt (1951) and Warren Caldwell and Richard Jensen (1969). For this reason, some researchers prefer the term Mill Creek/Over (Henning 2001; Winham and Calabrese 1998). Although Donald Lehmer omitted Mill Creek sites from the Initial Middle Missouri Tradition, subsequent researchers have found the Mill Creek village arrangements, house types, ceramics, and other material culture items wholly consistent with other early Middle Missouri Tradition sites (R. Alex 1981a; Anderson 1969; Henning 2001; Tiffany 2007).

### **Environmental Setting**

Terraces and bluffs of major rivers

### **Temporal Boundaries**

900-1300 CE

### **Spatial Boundaries**

Northwestern Iowa, southwestern Minnesota, and southeastern South Dakota

### **Property Types**

Villages

### **Locational Characteristics**

Southeastern portion of state

### **Context Definition**

The Mill Creek variant essentially comprises sites with Initial Middle Missouri traits occurring in southeastern South Dakota and adjoining portions of Iowa and Minnesota. It includes the Lower James phase, Brandon phase, and Big Sioux phase within South Dakota. Houses are long, semi-subterranean structures with two to six central support posts and a central hearth. The villages were small and compact. They were usually enclosed by a fortification ditch and palisade; some also had a ramp system to limit access. Burial sites take the form of ossuaries on hilltops overlooking villages.

## **Condition**

Some sites have been damaged or destroyed by urban development.

## **Voids in Research**

The link between Mill Creek and Initial Middle Missouri on the James River and near the Big Bend is not clearly understood at present. Sites in intervening areas will be key to filling in missing data on this. Sites with Woodland components will be important to outlining the Woodland-Plains Village transition. Sites that were excavated earlier should be reanalyzed with newer dating and pottery analysis techniques.

## **Research Topics**

1. How does Mill Creek differ from Initial Middle Missouri sites to the west? What does this indicate about origins and interactions?
2. Can Mill Creek dates be more closely calibrated to make clear the temporal relationships of various phases?
3. What is the relationship between Great Oasis and Mill Creek?
4. What indications of Mississippian influences are present in Mill Creek culture? What do these indicate about social structure, intergroup interactions, and trade?
5. The Eastern or Mill Creek variant disappears from the archaeological record. What happened to the groups represented by this archaeological culture?

## **Research and Management Goals**

Data from prior excavation projects should be compiled and reanalyzed. Remaining sites should be protected and excavated where threatened with loss from natural forces or development.

## **National Register Listings**

39CA1, 39DV2, 39ST228

## **Sites**

39CA1, 39CH29?, 39DV2 (Brandon), 39DV25 (Lower James Phase), 39HS1 (Lower James Phase), 39HT1 (Lower James Phase), 39MH1 (Brandon), 39ML9, 39ST228

## **Bibliography**

Tiffany 1983, 2007

# **Lower James Phase**

## **Overview**

The Lower James Phase is a localized expression of the eastern Initial Middle Missouri variant, represented by four village sites along the lower James River and its tributaries. These sites contained long, semi-rectangular, semi-subterranean houses with a central ridgepole supporting the walls and roof. They had wattle-and-daub walls and thatched roofs. Houses contained numerous subfloor storage pits, and other storage pits were placed outside. The most completely studied of the sites, the Mitchell site (39DV2), had 45 houses surrounded by two ditch and palisade fortifications (Alex 1973, 1981; Winham and Hannus 1988). This village overlooked Firesteel Creek, a tributary of the James River.

## **Environmental Setting**

River terraces and bluffs

## **Temporal Setting**

900-1300 CE?

## **Spatial Boundaries**

Lower James River

## **Property Types**

Villages

## **Locational Characteristics**

Lower portion of James River

## **Context Definition**

The Lower James phase includes those Initial Middle Missouri variant sites found in the Lower James region.

## **Condition**

The Mitchell site (39DV2) and the Goehring or Sheldon Reese site (39HS23) are well protected as an archaeological park and research center.

## **Voids in Research**

Mounds occur near some of the village sites, but their relationship to the villages has not yet been defined.

## **Research Topics**

1. What is the relationship of the Lower James phase to Great Oasis and to the other Initial Middle Missouri variant cultures?
2. Are the eastern Middle Missouri Tradition sites older than those in central South Dakota? Does the Lower James phase represent an independent, localized development or an importation of ideas or people?

## **Research and Management Goals**

This area is primarily private land. It seems likely that additional Lower James phase sites are present, but have not been discovered. An important management goal is simply to compile more information about site locations.

## **National Register Listings**

None

## **Archaeological Region**

Lower James

## **Sites**

39DV2/39DV3, 39DV25, 39HS1, 39HS23, 39HT1

## **Bibliography**

R. Alex 1973, 1981; Winham and Hannus 1988

## **Brandon Phase**

### **Overview**

The Big Sioux phase is a local expression of the Mill Creek or Eastern Middle Missouri variant.

### **Environmental Setting**

River terraces and bluffs

### **Temporal Boundaries**

900-1300 CE?

## **Spatial Boundaries**

Lower portions of the James and Big Sioux rivers

## **Property Types**

Villages.

## **Locational Characteristics**

Southeastern South Dakota on the James and Big Sioux rivers

## **Context Definition**

Brandon phase sites are identified on the basis of house features, village arrangement, and distinctive pottery types.

## **Condition**

Some sites have been damaged or destroyed by urban development.

## **Voids in Research**

As noted, the link between Mill Creek and Initial Middle Missouri on the James River and near the Big Bend is unclear. Sites in intervening areas will be key to filling in missing data on this. Sites with Woodland components will be important to outlining the Woodland-Plains Village transition. Sites that were excavated earlier should be reanalyzed with newer dating and pottery analysis techniques.

## **Research Topics**

See topics for Mill Creek or Eastern Middle Missouri.

## **Research and Management Goals**

Research focused on reanalysis of data from previous work in the region will help clarify the relationship of the Brandon phase to other Plains Village developments in the southeastern portion of the state. Efforts are needed to protect sites with intact deposits.

## **National Register Listing**

39DV2

## **Archaeological Region**

Lower James

## **Sites**

39DV2, 39MH1

## **Bibliography**

Lehmer 1971

## **Big Sioux Phase**

### **Overview**

The Big Sioux phase is one of several phases defined for the Mill Creek or Eastern Middle Missouri variant. It lies mostly in northwestern Iowa. Big Sioux groups lived in compact villages with houses arranged in rows. Houses were long, rectangular structures placed over shallow pits. Large posts running down the middle of the house provided support for a pitched roof. Houses had a central hearth and numerous subfloor storage pits inside and outside the walls. Village size varied widely, with just a few houses in some villages to more than 50 in others. Many of the villages were defended by ditch-and-palisade systems.

The Big Sioux phase economy was based on gardening, bison hunting, and use of wild plants, fish, and smaller game. There is some evidence in Iowa for development of ridged field farming systems. Sites contain abundant traded items, such as marine shell, indicating a lively trade with Mississippian societies far to the south and east. Among these items are early spoons, chunkee stones, smoking pipes, carved shell gorgets, and shell-tempered ceramics imported from the Cahokia complex at the location of present-day St. Louis. Some of the local ceramics mimic Mississippian forms and some artifacts bear distinctive Mississippian motifs, such as the weeping eye design, again showing that the Big Sioux groups were strongly influenced by the larger Mississippian cultures of the Southeast and Upper Midwest.

### **Environmental Setting**

River terraces and bluffs.

### **Temporal Boundaries**

1100 to 1250 CE

### **Spatial Boundaries**

Big Sioux River

### **Property Types**

Villages, burials

## **Locational Characteristics**

Along the Big Sioux River in southeastern South Dakota and northwestern Iowa

## **Context Definition**

Big Sioux phase sites are identified on the basis of ceramics, imported Mississippian goods, village configuration, house type, and location.

## **Condition**

Unknown regarding sites in South Dakota. It is likely that some sites have been destroyed or damaged by urban development and agricultural activities.

## **Voids in Research**

Little is known of this complex in South Dakota. The discovery and investigation of additional sites will be one key to sorting out the relative age of the eastern and western Initial Middle Missouri variant.

## **Research Topics**

1. Is the Big Sioux phase the same age as other Initial Middle Missouri phases? What does this suggest regarding the origins of the Middle Missouri Tradition?
2. What do Big Sioux sites reveal about the transition from gathering and hunting to a farming-based subsistence economy?
3. How were ties established and retained with Mississippian societies to the south? What was the level of influence of these communities in the development of semi-permanent village lifeways, trading practices, village fortification, and belief systems?
4. Big Sioux phase villagers appear to have abandoned the Big and Little Sioux rivers around 1250 CE. The causes of this apparent migration are still unknown.
5. What was the purpose of building fortification systems at the Big Sioux villages?
6. How did Big Sioux phase groups interact with one another and with related groups? What happened when Oneota groups began to enter this territory? Did non-village groups pose a military threat to the Big Sioux villages? Did Big Sioux villages serve as trade centers? How did this influence their development and interaction with other groups?
7. To what extent was the Middle Missouri a local development from a Woodland base versus a colonization or imitation of Mississippian peoples?

## **Research and Management Goals**

Sites with potential to yield information about the origins, age, and lifeways of Big Sioux phase peoples should be given high priority for protection and research. The Lake Herman site, 39LK50, contains a complex set of early village remains and should be protected from further loss of data to construction and maintenance of recreation facilities.

## **National Register Listings**

None

## **Archaeological Region**

Upper Big Sioux

## **Site**

39LK50

## **Bibliography**

Alex and Peterson 2010; Lehmer 1971

## **Western or Chamberlain Variant**

### **Overview**

This variant is intended to refer to sites in the Big Bend and Bad-Cheyenne regions; however, the definition can reasonably be expanded to include Initial Middle Missouri sites west of the Missouri River.

### **Environmental Setting**

River terraces and bluffs

### **Temporal Boundaries**

1000-1300 CE

### **Spatial Boundaries**

Central and western South Dakota

### **Property Types**

Villages, hunting camps, burials

## **Location**

Central and western South Dakota

## **Context Definition**

Initial Middle Missouri sites are recognized on the basis of rectangular long-houses, relatively compact villages that are sometimes fortified with ditch and palisade systems, and characteristic pottery styles. This variant includes the Grand Detour Phase, Anderson Phase, and Swanson Phase. Villages were placed on river terraces and ranged in size from 25 to 50 houses. Fortified sites are compact, with houses arranged in rows, while sites without fortifications exhibit a more dispersed pattern. Fortifications were placed on the landward side or sides of villages, with steep river banks affording protection on the other sides. Houses were consistent with the general Middle Missouri pattern of rectangular, semi-subterranean houses with a central ridgepole supporting the roof and walls. Walls and roof may have been covered by hides or woven mats, rather than earth; however, this detail is not clear at present.

## **Condition**

Many sites along the Missouri have been damaged or destroyed by construction of hydroelectric dams; others are eroding from wave action along the shorelines. Some sites remain intact.

## **Voids in Research**

Few sites with Woodland and Initial Middle Missouri components have been excavated. This presents a challenge in understanding Initial Middle Missouri origins. Relatively few non-village sites have been explored. Some of the material and notes from the River Basin Surveys project have yet to be completely analyzed and reported.

## **Research Topics**

1. Clarify the relationship between the Initial Middle Missouri variant and the Extended Middle Missouri variant. What happens to Initial Middle Missouri if it does not develop into Extended Middle Missouri?
2. The current ceramics classification needs to be revised to account for differences between Big Bend area Initial Middle Missouri variant sites and Chamberlain area Initial Middle Missouri variant ceramic assemblages.
3. What is the relationship between Initial Middle Missouri variant sites located outside the Missouri River trench with sites on both the James and Missouri rivers (e.g., R. Alex 1981a, 1981b)?
4. Are there Initial Middle Missouri sites in the Black Hills and other parts of western South Dakota? If so, should these be included in the Chamberlain variant?

5. Should Great oasis be considered an Initial variant phase (Johnson 2007; Tiffany 1983)?

## **Research and Management Goals**

Data from previous excavation and survey projects should be reexamined. Remaining sites should be protected from further loss to shoreline erosion or excavated to salvage the data they contain.

## **National Register Listings**

39BF11, 39LM23, 39ST55, 39ST88, 39ST223, 39ST228, 39ST235

## **Archaeological Regions**

Big Bend, Bad Cheyenne

## **Sites**

39BF11 (Swanson), 39BF12 (Anderson), 39BR13 (Swanson), 39BR16 (Swanson), 39BR38 (Swanson), 39BR101 (Swanson), 39BR202 (Anderson?, Swanson), 39LM69/39LM70/39LM23 (Anderson), 39LM57 (Anderson), 39LM201 (Anderson), 39ST55 (Anderson), 39ST88 (Anderson), 39ST214 (Anderson), 39ST223 (Anderson), 39ST224 (Anderson), 39ST228 (Anderson), 39ST235 (Anderson), 39ST239 (Anderson)

## **Bibliography**

Lehmer 1971

## **Swanson Phase**

### **Overview**

The Swanson Phase is an early expression of the Initial Middle Missouri variant in central South Dakota. Few reliable dates are available, but best estimates put the phase at around 1000-1100 CE. Along with the Sommers Phase, Swanson appears to represent development of a semi-permanent, semi-horticultural village lifeway in place from local Woodland cultures (Johnson 2007).

### **Environmental Setting**

River terraces and bluffs.

### **Spatial Boundaries**

Central portion of Missouri River as it runs north-south through the center of the state.

## **Property Types**

Villages.

## **Locational Characteristics**

Central South Dakota

## **Context Definition**

Swanson phase sites are identified on the basis of their ceramic assemblages, which contains large frequencies of incised S-shaped rims.

## **Condition**

Many sites related to the Swanson Phase were destroyed or inundated by construction of dams along the Missouri River. Remaining sites are threatened by shoreline erosion and looting.

## **Voids in Research**

With very little information available from Late Woodland complexes in this region of South Dakota, it is difficult to trace the degree to which Initial Middle Missouri cultures, such as that represented by the Swanson Phase, developed in place or were carried in via migration.

## **Research Topics**

1. Does the Swanson Phase represent a local development or an amalgamation of local Late Woodland cultures with people or influences entering the region from the east (Great Oasis, Mill Creek, and Cambria phases)? Do the apparent eastern connections indicate a movement of people in the Big Bend region or contact via trade or warfare?
2. What factors led to development of the Plains Village life-way in this region?
3. How did the Neo-Atlantic climatic episode contribute to the spread of horticulture and the introduction of new cultigens in the Swanson Phase?
4. Why are Swanson Phase villages fortified?
5. How did the various Initial Middle Missouri groups interact with one another and with nomadic groups?
6. How long were Swanson Phase villages occupied? The Swanson Site appears to have been reoccupied at least once. Is such reuse of sites typical of this phase?
7. Does the Crow Creek site represent a migration of Swanson Phase people?
8. To what extent did Mississippian cultural developments influence the Swanson Phase?

## **Research and Management Goals**

Remaining sites should be protected from further loss to shoreline erosion or excavated to salvage the data they contain.

## **National Register Listing**

39BF11

## **Archaeological Region**

Big Bend

## **Sites**

39BF11, 39BF12, 39BR13, 39BR16, 39BR38, 39BR101?, 39BR101, 39BR202, 39LM33?, 39LM55, 39LM225?

## **Bibliography**

Johnson 2007; Tiffany 2007

## **Sommers Phase**

### **Overview**

The Sommers Phase is an early expression of the Initial Middle Missouri variant in central South Dakota. Along with the Swanson Phase, Sommers appears to represent development of a semi-permanent, semi-horticultural village lifeway in place from local Woodland cultures (Johnson 2007), perhaps influenced by peoples or ideas from the east. The Sommers site is a large village containing more than 100 house depressions, of which about 18 are inside a fortification system. The presence of vessels with cord-impressed rims suggests that the phase developed directly from local Late Woodland cultures.

### **Environmental Setting**

River terraces and bluffs.

### **Temporal Boundaries**

1000-1100 CE

### **Spatial Boundaries**

Central portion of Missouri River as it runs north-south through the center of the state.

## **Property Types**

Villages.

## **Locational Characteristics**

Central South Dakota

## **Context Definition**

Sommers phase sites are identified on the basis of their ceramic assemblages, which contains large frequencies of cord-impressed rim sherds.

## **Condition**

Many sites related to the Sommers Phase were destroyed or inundated by construction of dams along the Missouri River. Remaining sites are threatened by shoreline erosion and looting.

## **Voids in Research**

With very little information available from Late Woodland complexes in this region of South Dakota, it is difficult to trace the degree to which Initial Middle Missouri cultures, such as that represented by the Sommers Phase, developed in place or were carried in via migration.

## **Research Topics**

1. Does the Sommers Phase represent a local development or an amalgamation of local Late Woodland cultures with people or influences entering the region from the east (Great Oasis, Mill Creek, and Cambria phases)? Do the apparent eastern connections indicate a movement of people in the Big Bend region or contact via trade or warfare?
2. What factors led to development of the Plains Village life-way in this region?
3. How did the Neo-Atlantic climatic episode contribute to the spread of horticulture and the introduction of new cultigens in the Sommers Phase?
4. What was the relationship between Sommers Phase groups and those of the Swanson phase?
5. How did the various Initial Middle Missouri groups interact with one another and with nomadic groups?
6. How long were Sommers Phase villages occupied?
7. What accounts for the differences between Sommers Phase and Swanson Phase pottery?

## **Research and Management Goals**

Remaining sites should be protected from further loss to shoreline erosion or excavated to salvage the data they contain.

## **National Register Listings**

39ST56, 39ST232

## **Archaeological Region**

Big Bend

## **Sites**

39HU60, 39ST56, 39ST232

## **Bibliography**

Henning and Toom 2003; Johnson 2007; Steinacher 1990; Tiffany 2007

## **Grand Detour Phase**

### **Overview**

Villages may be fortified or unfortified; houses are semisubterranean, rectangular structures with entrances on the south side. Sites contain cord-roughened pottery surfaces with plain shoulders. There is nothing distinctive about the nonceramic artifacts in this phase.

### **Environmental Setting**

River terraces and bluffs

### **Temporal Boundaries**

900-1300 CE

### **Spatial Boundaries**

Big Bend of the Missouri River

### **Property Types**

Villages

## **Locational Characteristics**

Central South Dakota

## **Context Definition**

Grand Detour phase sites are recognized by the presence of pottery with cord-roughened bodies and plain shoulders (Wood 2001). Specific wares associated with the phase are Grass Rope ware and Cable ware. Pottery has incised or cord-impressed S-shaped rims, with rims becoming higher and less angular over time. Villages are located on both sides of the Missouri River in the Big Bend region. Some villages are fortified; most contain 15 to 20 semi-subterranean rectangular houses. Houses were arranged in rows, with entrances facing south. It appears that the earliest fortification system was a bastioned moat, followed by a lack of fortification, and then a simple ditch-and-palisade system (Caldwell and Jensen 1969).

## **Condition**

Jiggs Thompson (39LM208) and Langdeau (39LM209) sites are in excellent condition. Pretty Head (39LM232) is completely inundated.

## **Voids in Research**

The phase was defined on the basis of limited investigations of three sites. Future research should explore the validity of this phase designation based on other sites in the region.

## **Research Topics**

1. Can Grand Detour sites be linked to a particular ethnic group?
2. What is the relationship between the Grand Detour phase and similar Initial Middle Missouri sites farther east on the Missouri?
3. Did the Grand Detour phase people differ from their contemporaneous neighbors in terms of economic activities or settlement patterns?
4. Origins and culmination of the Grand Detour phase.

## **Research and Management Goals**

Two of the three sites are listed on the National Register and receive protection from road-building and other development. Other sites should be reexamined for their potential to yield valuable information about early Plains Village life in the region.

## **National Register Listings**

39LM208, 39LM209

## **Archaeological Region**

Big Bend

## **Sites**

39LM208, 39LM209, 39LM232

## **Bibliography**

Caldwell and Jensen 1969; Henning and Toom 2003; Wood 2001

## **Anderson Phase**

### **Overview**

Anderson phase villages were located north of the Big Bend on the west side of the river. Some villages were fortified by a small ditch across the narrowest portion of a terrace spur, with steep bluff sides providing protection sides surrounded by the river. Pottery shows influences from Extended Middle Missouri (simple stamping using a grooved paddle, and some new rim forms.

### **Environmental Setting**

River terraces and bluffs.

### **Temporal Boundaries**

9000-1250 CE

### **Spatial Boundaries**

West bank of Missouri River, from the Big Bend extending northward

### **Property Types**

Villages

### **Locational Characteristics**

Central South Dakota

### **Context Definition**

Anderson phase sites are found on the west bank of the Missouri in and north of the Big Bend. Villages were placed on terrace extensions and protected by fortifications placed across the isthmus leading to the village.

## **Condition**

Some of the sites are inundated, including two of the best known: 39ST11 and 39ST30. Others have been partially or completely destroyed by shoreline erosion.

## **Voids in Research**

The motivations for building fortifications at some villages of this phase are poorly understood. Research at additional sites may clarify inter-village relationships.

## **Research Topics**

1. Can Anderson phase sites be linked to a particular ethnic group?
2. What is the relationship between the Anderson phase and similar Initial Middle Missouri sites farther east on the Missouri?
3. Did the Anderson phase people differ from their contemporaneous neighbors in terms of economic activities or settlement patterns?
4. Origins and culmination of the Anderson phase.

## **Research and Management Goals**

Sites that are threatened by shoreline erosion should be excavated to salvage remaining information.

## **National Register Listings**

39LM23, 39ST55, 39ST88, 39ST223, 39ST228, 39ST235

## **Archaeological Regions**

Bad-Cheyenne, Big Bend

## **Sites**

39BF215, 39BR202?, 39LM69/39LM70/39LM23, 39LM57, 39LM201, 39LM208, 39LM209, 39LM232, 39ST11, 39ST12, 39ST30, 39ST55, 39ST88, 39ST214, 39ST223, 39ST224, 39ST228, 39ST235, 39ST239

## **Bibliography**

Winham and Calabrese 1998; Wood 2001

# **Cattle Oiler Phase**

## **Overview**

While Henning and Toom (2003) propose this phase as a member of the western Initial Middle Missouri variant, they do not provide a definition. The Cattle Oiler site contained components assigned to the Initial Middle Missouri and the Extended Middle Missouri variants; however, it proved difficult to distinguish the ceramics of these two main components, but in general the Initial component pottery exhibited cord-roughened surfaces. House features assigned to the Initial component were long and rectangular.

## **Environmental Setting**

River terraces and bluffs.

## **Temporal Boundaries**

1000-1100 CE

## **Spatial Boundaries**

Central portion of Missouri River as it runs north-south through the center of the state.

## **Property Types**

Villages.

## **Locational Characteristics**

Central South Dakota

## **Context Definition**

The Cattle Oiler Phase is recognized on the basis of its ceramic assemblage, which contains high frequencies of S-shaped rims with horizontal and triangular cord-impressed motifs on their exterior surfaces, and from the form of the houses.

## **Condition**

All of the sites listed for this phase are at least partially intact and all are listed in the National Register of Historic Places.

## **Voids in Research**

With very little information available from Late Woodland complexes in this region of South Dakota, it is difficult to trace the degree to which Initial Middle Missouri cultures, such as that represented by the Cattle Oiler Phase, developed in place or were carried in via migration.

## Research Topics

1. Did the Cattle Oiler phase develop out of local Late Woodland culture or was it imported from the eastern Initial Middle Missouri variant, or is it a combination of both?
2. Did the occupants of the Cattle Oiler site relocate to the Sommers site after 1100 CE?

## Research and Management Goals

These sites are all threatened by shoreline erosion which is continually exposing and removing cultural material. These sites should be managed by stabilization or data recovery to prevent further loss of information from erosion. They contain cultural deposits that can answer questions about the origins of village life and horticulture in the state. Most of the sites also contain human burials. Sites should be monitored regularly to ensure that human remains are not exposed by erosion or looting.

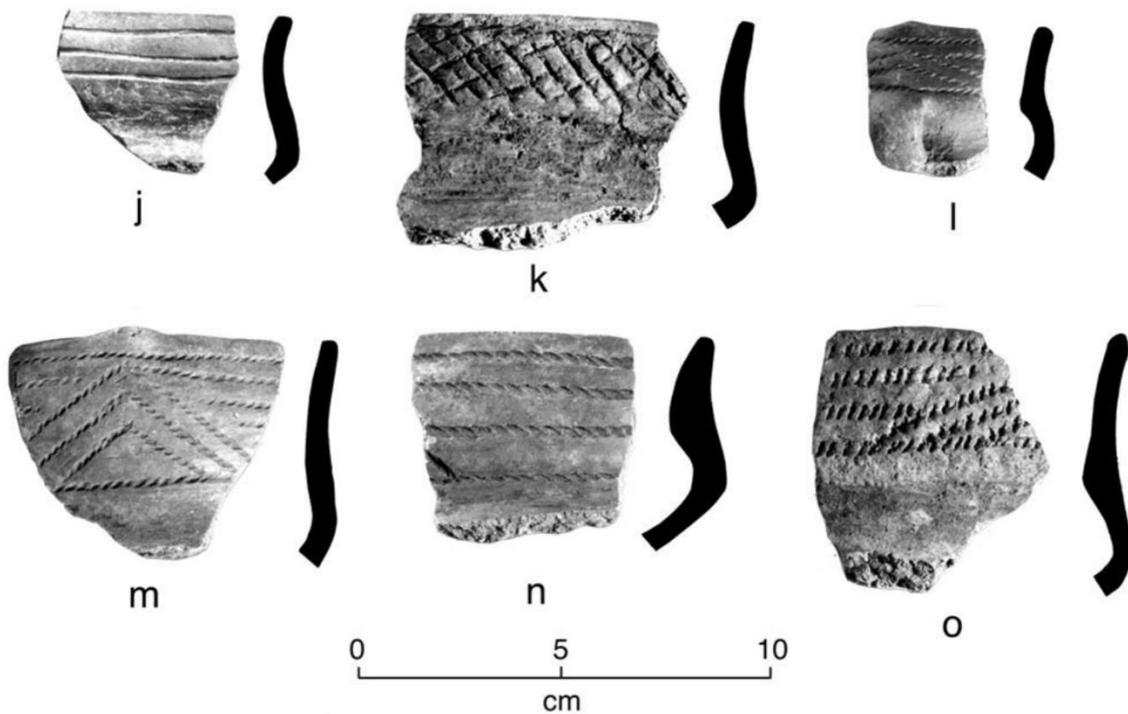


Figure 47. Extended/terminal Middle Missouri (j–o) rim sherds: j, S-shaped horizontal incised rim; k, S-shaped cross-hatch incised rim; l–o, S-shaped cord impressed rim (from C. Johnson 2007).

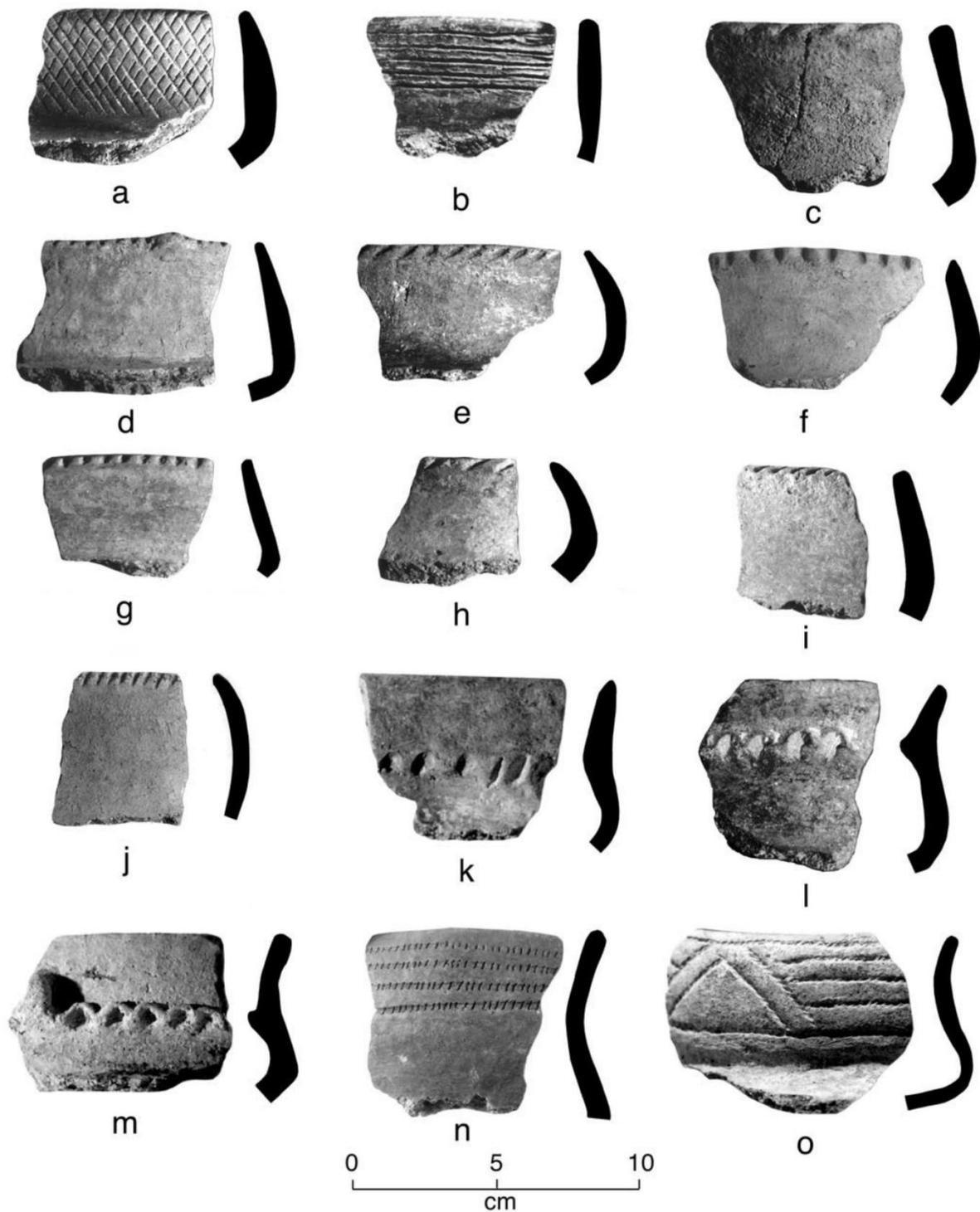


Figure 48. Extended/Terminal Middle Missouri rim sherds: a, Straight cross-hatch incised rim; b, Straight horizontal incised rim; c–j, Straight tool/finger impressed lip; k, S-shaped tool/finger impressed rim; l–m, S-shaped filleted rim; n–o, S-shaped cord impressed rim (from C. Johnson 2007).

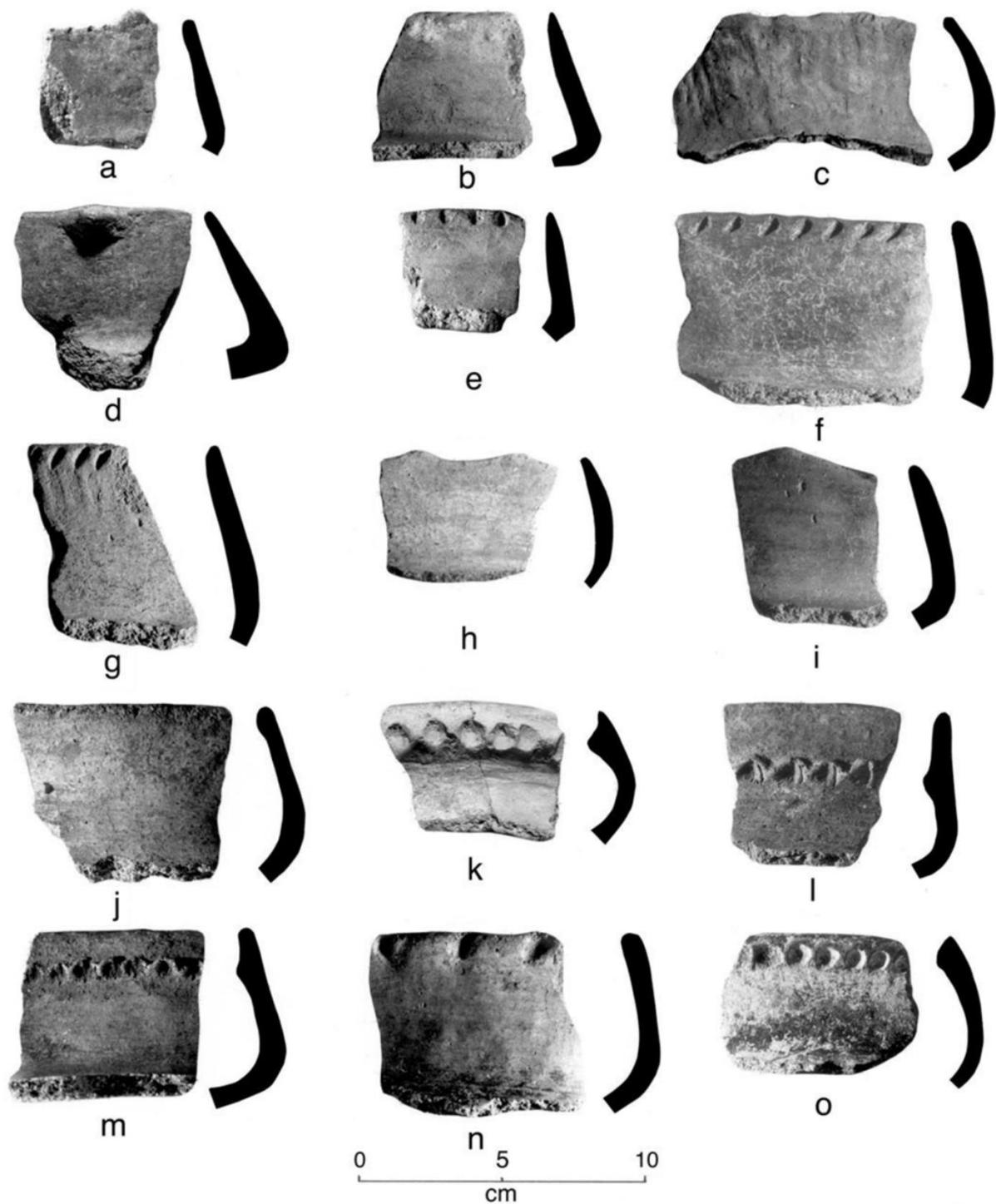


Figure 49. Extended/terminal Middle Missouri rim sherds: a–b, e–g, straight tool impressed lip; c, straight pinched lip; d, h–j, straight undecorated; k–m, o, straight filleted rim; n–o, straight finger impressed lip (from C. Johnson 2007).

## **National Register Listings**

39ST88, 39ST224, 39ST228, 39ST235

## **Archaeological Region**

Bad-Cheyenne

SITES: 39ST55, 39ST88, 39ST224, 39ST288, 39ST235

## **Bibliography**

Henning and Toom 2003; Johnson 2007; Tiffany 2007

## **Extended Middle Missouri**

### **Overview**

The Extended Middle Missouri variant appears about 1100 CE. It is distinguished from the Initial Middle Missouri by differences in ceramics and architectural features such as the shape of the lodges. Villages were small with fewer than twenty houses arranged around a central plaza. Houses were large rectangular structures built over pits with entryways oriented southwest. Like the Initial Middle Missouri houses, these had a central hearth and storage pits placed near the walls. Extended Middle Missouri sites extend from south of the Big Bend region of South Dakota the mouth of the Little Missouri River in North Dakota. Components from over 85 sites have been assigned to this variant. Most of the northern sites are not fortified, while those in the south generally are. This circumstance has been interpreted as evidence of conflict between Initial Middle Missouri and Extended Middle Missouri groups resulting from the intrusion of Extended Middle Missouri groups downstream into Initial Middle Missouri territory. Based on a recent reinterpretation of radiocarbon dates, Toom (1992b) has postulated conflicts between immigrant Initial Coalescent peoples from the Central Plains and the Middle Missouri village groups. Overlap between Initial Middle Missouri and Extended Middle Missouri groups is evidenced in the Bad-Cheyenne region by a number of sites which contain components of both variants.

To date, the various classification schemes which have been used to categorize the Plains Village materials from the Middle Missouri region have proved problematic. These problems have been summarized by Lovick and Ahler (1982:54-65). Research in the upper Knife-Heart region (Ahler 1993; Lovick and Ahler 1982) has shown that none of the existing general culture-historic models for the prehistory of the Middle Missouri region (e.g., Bowers 1948; Lehmer 1971) can specifically be applied to the archeological record.

### **Environmental Setting**

River bluffs and terraces

## **Temporal Boundaries**

1100-1500 CE

## **Spatial Boundaries**

West bank of Mo, from Big Bend extending northward

## **Property Types**

Villages

## **Locational Characteristics**

Central South Dakota

## **Context Definition**

Extended Middle Missouri villages are generally smaller than Initial Middle Missouri villages; ceramics differ in details of decoration. While Initial Middle Missouri variant ceramics are dominated by finger- and tool-impressed lips, Extended Middle Missouri variant ceramics are dominated by incised or trailed decorations on rims.

## **Condition**

Many sites were destroyed by dam construction and subsequent shoreline erosion.

## **Voids in Research**

The Extended Middle Missouri is poorly documented in comparison to the Initial Middle Missouri and Coalescent variants. More information is needed regarding subsistence, cultural exchange with non-village and Initial Middle Missouri peoples, burial practices, and pottery types.

## **Research Topics**

1. Are there any village sites in the Grand-Moreau Region that date earlier than 1100 CE? Are the Extended Middle Missouri sites in the Grand-Moreau Region as early as the dates from the Jake White Bull and Calamity sites would suggest?
2. Reevaluate Extended Middle Missouri versus Terminal Middle Missouri site assignments made by Lehmer (1971).
3. Increase sample of radiocarbon dates and recalibrate the estimated dates for this variant and its phases.

4. Examine Extended Middle Missouri and Terminal Middle Missouri subsistence strategies. Was there an environmental change at the transition between Extended Middle Missouri and Terminal Middle Missouri?

## **Research and Management Goals**

Conduct salvage excavations of sites that are currently threatened by shoreline erosion or looting. Reanalyze old collections with new methods to better establish the age, subsistence base, and evidence for cultural exchange of Extended Middle Missouri cultures. Only one Extended Middle Missouri site is listed on the National Register, which indicates a need to prioritize these sites in historic preservation efforts in the state.

## **National Register Listings**

39ST224, 39ST228

## **Archaeological Regions**

Big Bend, Bad-Cheyenne, Grand-Moreau

## **Sites**

39AR8, 39AR201, 39AR210, 39CA1, 39CA2, 39CA3, 39CA4, 39CA208, 39C03, 39C06, 39CO93, 39C0145, 39C0201, 39C0212, 39C0213, 39DW224, 39DW225, 39DW231, 39DW233, 39HU1, 39DW224, 39HU1, 39HU16, 39LM4, 39LM33, 39LM53, 39LM55, 39SL7, 39SL12, 39SL13, 39SL29, 39SL41, 39SL42, 39SL381, 39ST1, 39ST3, 39ST15, 39ST16, 39ST37, 39ST38, 39ST39, 39ST223, 39ST224, 39ST238, 39WW89

## **Bibliography**

Lehmer 1971; Wood 2001

## **Northern Extended Variant**

### **Overview**

The Northern Extended Middle Missouri Variant comprises sites from the Big Bend area north into North Dakota.

### **Environmental Setting**

River bluffs and terraces

### **Temporal Boundaries**

1100-1250 CE

## **Spatial Boundaries**

West bank of the Missouri from the Big Bend to the Grand-Moreau region

## **Property Types**

Villages

## **Locational Characteristics**

North-central South Dakota

## **Context Definition**

The Northern Extended Middle Missouri Variant includes the Fort Yates Phase (North and South Dakota) and the Nailati Phase (North Dakota).

## **Condition**

Many sites were lost to dam construction and to shoreline erosion.

## **Voids in Research**

Relatively few sites have been thoroughly studied on the South Dakota side.

## **Research Topics**

1. What sparked the northward expansion of Middle Missouri village cultures? What is the timing of these movements?
2. What explains the differences between the northern and southern Extended Middle Missouri cultures?
3. Do the northern and southern divisions represent different ethnic groups, different subsistence systems, or some other distinction?
4. What happened to existing local groups as the Extended Middle Missouri village cultures expanded?

## **Research and Management Goals**

No sites have been listed in the National Register. It is recommended that known sites be evaluated for eligibility and managed accordingly. Research should take place both via new field investigations and via reanalysis of existing excavation data.

## **National Register Listings**

None

## **Archaeological Regions**

Big Bend, Bad-Cheyenne, Grand-Moreau

## **Sites**

39CA2 (Fort Yates), 39CA208 (Fort Yates), 39CO1 (Fort Yates), 39DW225 (Fort Yates), 39LM55 (Fort Yates), 39SL381 (Fort Yates?), 39ST223 (Fort Yates)

## **Bibliography**

Lehmer 1971; Toom 1992a, 1992b; Wood 2001

## **Fort Yates Phase**

### **Overview**

Villages of the Fort Yates phase are located from the mouth of the Moreau River north into North Dakota. These villages generally are unfortified and, with one exception, contain fewer than 20 houses. In contrast to Initial Middle Missouri houses, these have entrances opening to the southwest and are arranged around a larger structure that may have served as a community gathering place. Houses are semi-subterranean and rectangular. Three sites in the Grand-Cannonball area are fortified. Fort Yates pottery is easily distinguished from Initial Middle Missouri types, but is homogeneous with Extended Middle Missouri wares from other areas. Pottery exhibits simple-stamped and smoothed surfaces.

### **Environmental Setting**

River terraces and bluffs.

### **Temporal Boundaries**

1100-1250 CE

### **Spatial Boundaries**

Missouri River north of the Moreau River

### **Property Types**

Villages

### **Locational Characteristics**

North-central South Dakota

## **Context Definition**

Fort Yates phase sites occur between the Moreau River in South Dakota and the Heart River in North Dakota. Most villages were small and not fortified. Unlike Extended Middle Missouri tradition sites farther south, Fort Yates villages lacked obvious central plazas.

## **Condition**

All sites except 39SL381 have been damaged by shoreline erosion.

## **Voids in Research**

Data from previous projects involving Fort Yates phase sites should be reanalyzed using newer methods of analysis, such as remote sensing.

## **Research Topics**

1. What sparked the northward expansion of Middle Missouri village cultures? What is the timing of these movements?
2. What explains the differences between the northern and southern Extended Middle Missouri phases?
3. Can the Fort Yates phase be linked to a specific ethnic or linguistic group?
4. What happened to existing local groups as the Extended Middle Missouri village cultures expanded?
5. What was the nature of interactions between the Fort Yates phase people and Initial Middle Missouri groups occupying the same region?
6. What do differences in pottery and village organization between the Fort Yates and Thomas Riggs phases mean in terms of social interaction?

## **Research and Management Goals**

Site management should focus on salvaging information from sites before they are completely destroyed by shoreline erosion.

## **National Register Listing**

39ST223

## **Archaeological Regions**

Big Bend, Bad-Cheyenne, Grand-Moreau

## **Sites**

39CA2, 39CA208, 39CO1, 39DW225, 39LM55, 39SL381?, 39ST223

## **Bibliography**

Wood 2001

## **Southern Extended Variant**

### **Overview**

The Southern Extended Middle Missouri Variant comprises sites in the Big Bend area and on the James River.

### **Environmental Setting**

River bluffs and terraces

### **Temporal Boundaries**

1100-1250 CE

### **Spatial Boundaries**

West bank of the Missouri at the Big Bend and the James River near Mitchell

### **Property Types**

Villages

### **Locational Characteristics**

Big Bend area of the Missouri River and the stretch of the James River near Mitchell

### **Context Definition**

The Southern Extended Middle Missouri Variant includes only one defined focus: Thomas Riggs.

### **Condition**

Some sites were lost to dam construction and to shoreline erosion. Site 39DV2 is well protected.

## **Voids in Research**

The distinction between the northern and southern divisions of the Extended Middle Missouri needs better definition to verify their viability as taxonomic units.

## **Research Topics**

1. What sparked the expansion of Middle Missouri village cultures? What is the timing of these movements?
2. What explains the differences between the northern and southern Extended Middle Missouri cultures?
3. Do the northern and southern divisions represent different ethnic groups, different subsistence systems, or some other distinction?
4. What happened to existing local groups as the Extended Middle Missouri village cultures expanded?
5. Given that the southern division has only one phase or focus (Thomas Riggs), is the north-south division a valid one, or should Thomas Riggs focus sites be included in a single Extended Middle Missouri unit?
6. What is the relationship of the two southern division sites on the Missouri with the one on the James? Are there sites in the intervening region that can help explain this seemingly discontinuous distribution?

## **Research and Management Goals**

Only one site, 39DV2, has been listed in the National Register. It is recommended that known sites be evaluated for eligibility and managed accordingly. Research should take place both via new field investigations and via reanalysis of existing excavation data.

## **National Register Listing**

39DV2

## **Archaeological Regions**

Big Bend, Lower James

## **Sites**

39DV2 (Thomas Riggs), 39HU1 (Thomas Riggs), 39LM55 (Thomas Riggs)

## **Bibliography**

Lehmer 1971, Wood 2001

# **Thomas Riggs Focus**

## **Overview**

Three sites in the Big Bend area and on the James River have been assigned to the Thomas Riggs focus, which is essentially the same as the Southern Extended Middle Missouri variant.

## **Environmental Setting**

River bluffs and terraces

## **Temporal Boundaries**

1100-1250 CE

## **Spatial Boundaries**

West bank of the Missouri south of the Moreau River and on the James River near Mitchell

## **Property Types**

Villages

## **Locational Characteristics**

Missouri River south of the Moreau and the stretch of the James River near Mitchell

## **Context Definition**

The Thomas Riggs focus is recognized on the basis of ceramic types and village organization. Pottery was paddle-stamped or smooth surfaced, with distinctive incised designs on the shoulders and decorated flared rims. Houses were rectangular structures built over shallow pits and arranged in a regular pattern around a central plaza. Most villages were not fortified; however, some had a palisade protecting the landward side of the village.

## **Condition**

Some sites were lost to dam construction and to shoreline erosion. Site 39DV2 is well protected.

## **Voids in Research**

The distinction between the northern and southern divisions of the Extended Middle Missouri needs better definition to verify their viability as taxonomic units.

## **Research Topics**

1. What sparked the expansion of Middle Missouri village cultures? What is the timing of these movements?
2. What explains the differences between the northern and southern (Thomas Riggs focus) Extended Middle Missouri cultures?
3. Do the northern and southern divisions represent different ethnic groups, different subsistence systems, or some other distinction?
4. What happened to existing local groups as the Extended Middle Missouri village cultures expanded?
5. Given that the southern division has only one phase or focus (Thomas Riggs), is the north-south division a valid one, or should Thomas Riggs sites be included in a single Extended Middle Missouri unit?
6. What is the relationship of the two southern division sites on the Missouri with the one on the James? Are there sites in the intervening region that can help explain this seemingly discontinuous distribution?

## **Research and Management Goals**

Only one site, 39DV2, is listed in the National Register. It is recommended that known sites be evaluated for eligibility and managed accordingly. Research should take place both via new field investigations and via reanalysis of existing excavation data.

## **National Register Listing**

39DV2

## **Archaeological Regions**

Big Bend, Lower James

## **Sites**

39DV2, 39HU1, 39LM55

## **Bibliography**

Lehmer 1971, Wood 2001

# **Terminal Middle Missouri**

## **Overview**

The Terminal Middle Missouri variant sites are typically very large villages. These contained more than 100 structures arranged around a central plaza.

## **Environmental Setting**

River terraces and bluffs.

## **Temporal Boundaries**

1400-1550 CE

## **Spatial Boundaries**

Missouri River between the Cannonball and Heart rivers

## **Property Types**

Villages

## **Locational Characteristics**

Central North Dakota; not present in South Dakota

## **Context Definition**

Terminal variant sites are found along the Missouri River in North Dakota from the Cannonball to the Heart River. These are very large villages, containing 80 to more than 100 houses. Villages are fortified with ditches, palisades, and bastions. Houses are. Ceramics are similar to rectangular earth lodges placed over shallow pits. Ceramics are like those of the preceding Extended Middle Missouri variant, with some types (high S-rim and braced rim) becoming more common. Some kinds of bone and shell artifacts no longer occur at this time (Lehmer 1971; Wood 2001).

## **Condition**

The Helb site, 39CA208, was originally assigned to the Terminal Middle Missouri variant; however, more recent research by Marvin Kay (1993, 1994, 1995a, 1995b) shows it to belong to the Extended Middle Missouri variant. This site has largely been destroyed by shoreline erosion and looting.

## **Voids in Research**

Marvin Kay and his students at the University of Arkansas have undertaken several studies of the Helb site (39CA208), reassigning it to the Extended Middle Missouri variant and confirming that Terminal variant sites are not present in South Dakota.

## **Research Topics**

1. What were the social dynamics that led to, and resulted from, consolidation of villages during the Terminal Middle Missouri variant?
2. What role did trade and other peaceful interaction have in the development of the Terminal Middle Missouri variant?
3. How did political organization shift as villages became larger?
4. What changes to horticultural practices were necessitated by the migration to more northern zones?
5. Can the Terminal Middle Missouri villages be linked to historic groups?
6. Is the Terminal Middle Missouri variant limited to North Dakota, or does South Dakota contain Terminal Middle Missouri variant sites that have not been recognized as such?

## **Research and Management Goals**

Additional excavations are recommended for the Helb site, before all remaining deposits are lost to shoreline erosion.

## **National Register Nominations**

None

## **Archaeological Regions**

None

## **Site**

None; 39CA208 was reassigned to Extended Middle Missouri variant

## **Bibliography**

Cogswell *et al.* 1998; Epley 1994; Falk and Ahler 1998; Falk and Calabrese 1973; Galan 1996; Kay 1993, 1994, 1995a, 1995b; Kendall 1997; Lehmer 1971; O'Neal 2001; Ott 1998; Rosebrough 1994, 1995; Strait 1999; Zalucha 1985

# Coalescent Tradition

## Overview

About 1300 CE, a new pattern emerged in central South Dakota. Like the Middle Missouri Tradition, this development involved people living in semi-permanent villages on the river terraces and farming the rich Missouri bottomlands. Houses and ceramics were similar to those of the Central Plains village tradition to the south, demonstrating a clear origin for much of what has been termed the Coalescent tradition. Some researchers have linked this northern migration of Central Plains villagers to changing climatic conditions that rendered their homeland too dry for successful farming; however, this is now viewed as only a partial explanation for the Coalescent Tradition (Johnson 1998). The term “coalescent” assumed that, as new people moved into the Middle Missouri area, they adopted various traits from the locals, resulting in a mixing or coalescence of the two Plains Village traditions. Some researchers today find little evidence for this mixing of cultures, and view the Coalescent Tradition as a northern extension of the Central Plains Tradition (Johnson 1998), while others accept the idea of cultural mixing resulting in a true coalescence of cultures (Krause 2001).

Ludwickson *et al.* (1981:161) note that the term *Coalescent* has been assigned several different meanings. It has been used to refer to the fusion of cultural characteristics derived from the Middle Missouri and Central plains traditions. The end product of this process of “coalescence” is the eventual emergence of the Post-Contact Coalescent variant (ca. 1650-1850 CE), which is found throughout the Middle Missouri Subarea (Toom 1992a:56). “Coalescence” may also refer to the apparent concentration into a small region of peoples who formerly inhabited a considerably wider area. As the Coalescent tradition evolved, a series of earlier cultural sequences ended. These include the Upper Republican, Smoky Hill, and Nebraska phases, and the Steed-Kisker complex, as well as the Initial variant of the Middle Missouri tradition. A third example of “coalescence” is embodied in the formation of large compact villages from the scattered farmsteads and loose hamlets of the earlier Central Plains tradition. With regard to Lehmer's Coalescent tradition, Lovick and Ahler (1982:64) discuss three examples of the process of coalescence: when Caddoan-speaking villagers moved out of the Central Plains and established themselves as the ancestors of the Arikara in South Dakota; when the southern Mandan group borrowed architectural and ceramic traits from elsewhere while living in the vicinity of the Black Hills; and when the two groups of Mandan and three groups of Hidatsa interacted in the Knife-Heart region. These three episodes of the process of coalescence were not necessarily chronologically sequential and did not necessarily involve any single group of people in all three episodes; hence, they do not necessarily constitute a cultural tradition in the sense that Willey and Phillips (1958:37) defined it (Lovick and Ahler 1982:641).

This period was marked by a general movement northward of both Middle Missouri and Coalescent people. The Coalescent territory expanded over time, but maintained a strong presence in the Big Bend and Bad-Cheyenne regions. Coalescent sites are similar to those of the Middle Missouri tradition in having villages of various sizes and configurations. Coalescent houses were oval, circular, or rounded square earth-covered structures with four large interior roof supports, central hearths, and sub-floor pits for storing crops and other items. These storage pits include cylindrical and bell-shaped forms. Some houses were built over shallow excavations and most

were smaller than Middle Missouri tradition houses. Houses were arranged in linear fashion along the river course or in small clusters, in contrast to the larger, more compact Middle Missouri tradition villages (Krause 2001; Lehmer 1971). Some villages were fortified with systems, palisades, and bastions. Fortified villages were more compact than those lacking fortifications. Initial Coalescent burial customs have not been clearly defined. Pottery shows a mixing of Central Plains and Middle Missouri tradition traits. Pots are typically globular, with cord-roughed surfaces and flared, collared, or vertical rims. Bone and stone tools also include both Central Plains and Middle Missouri types. Over time, Coalescent territory expanded from the Big Bend and Bad-Cheyenne area to encompass all of the Missouri River north of and including the Big Bend.

## **Environmental Setting**

Terrace, bluffs, and floodplains of the Missouri River

## **Temporal Boundaries**

1300 to 1886 CE

## **Spatial Boundaries**

Central South Dakota along the Missouri River

## **Property Types**

Villages, hunting camps, cemeteries

## **Locational Characteristics**

Major river valleys in the central portion of the state

## **Context Definition**

The Coalescent tradition reflects the migration of Central Plains people to the Missouri River. Coalescent houses were circular or shaped like rounded squares and were smaller than Middle Missouri tradition houses. Villages without fortification systems tended to have houses placed at random, while fortified villages had a more regular and compact arrangement of houses. Fortifications consisted of a ditch and palisade system, with bastions along the palisades. Villages were placed on the higher terraces of the major river systems, with the floodplains and lower terraces used for family fields. Crops included corn, beans, squash, sunflowers, and tobacco. In summer and fall, some families left the village to hunt bison and other game. Ceramics took the form of globular pots with straight, flared, or vertical rims and cord-roughened surface. The Coalescent tradition is divided into Initial, Extended, and Post-Contact periods.

## **Condition**

Many sites were inundated or destroyed by the construction and operation of hydroelectric dams on the Missouri River. Shoreline erosion is a serious and ongoing problem that results in the loss of sites and portions of sites, as well as attracting looters. A few sites remain intact.

## **Voids in Research**

The Coalescent Tradition is fairly well researched and understood. Questions remain about burial customs and social interaction between related and unrelated groups.

## **Research Topics**

1. What sparked the expansion of Central Plains groups northward to the central Missouri? Did their entrance into the area lead to conflict with groups already there?
2. How did Middle Missouri tradition and Coalescent tradition groups interact? How did these groups interact with non-village groups that came into or near their territories?
3. What can pottery distribution tell us about group interaction and social structure?
4. What was the purpose of fortification of villages? Were fortifications planned in advance, or added to villages later?
5. To what extent were Coalescent peoples involved in regional and even continental trade?
6. Did Coalescent people maintain relationships with other Caddoan speakers to the south of the Middle Missouri subarea?
7. Did the dispersed arrangement of Coalescent villages confer advantages in terms of resource gathering and defense? Or did Coalescent groups retain this earlier, Central Plains, settlement pattern as necessary to community cohesion?

## **Research and Management Goals**

As noted, many of the remaining sites along the Missouri are threatened by shoreline erosion and looting. Efforts should be made to stabilize or excavate these sites before more information is lost. Research should focus on revisiting early work, especially as regards dating, to more clearly define the time span and movements of Coalescent societies.

## **National Register Listings**

39BF3, 39BF11, 39BF206, 39DW234, 39HU5, 39HU6, 39HU7, 39HU61, 39HU63, 39HU88, 39HU102, 39HU126, 39HU202, 39HU204, 39HU205, 39HU206, 39HU207, 39HU210, HU214, 39HU217, 39HU219, 39HU220, 39HU229, 39ST235, 39HU242, 39LM1, 39LM2, 39LM22, 39ST139, 39LM207, 39ML222, 39ML223, 39ML224, 39ML227, 39ST17, 39ST98, 39ST106, 39ST202, 39ST218, 39ST219, 39ST222, 39ST223, 39ST224, 39ST228, 39ST232, 39WW203

## Archaeological Regions

Bad-Cheyenne, Central Cheyenne, Big Bend, Grand-Moreau, Grand-Moreau Tablelands, Lower White, White River Badlands, South Fork Cheyenne

## Sites

39AR5, 39AR7, 39BF215, 39BR11, 39CO8, 39CO17, 39CO18, 39CO202, 39CO204, 39CO205, 39DW7, 39DW13, 39DW15, 39DW16, 39DW17, 39DW19, 39DW209, 39DW210, 39DW211, 39DW217, 39DW254, 39HU15, 39HU39, 39HU45, 39HU46, 39HU47, 39HU63, 39HU21, 39HU222, 39LM4, 39LM31, 39ML47, 39LM64, 39LM65, 39LM69, 39LM70, 39LM80, 39LM84, 39LM85, 39LM86, 39LM201, 39LM217, 39LM219, 39LM238, 39LM242, 39LM243, 39LM301, 39PO8, 39PO9, 39PO11, 39PO13, 39PO14, 39PO201, 39PO209, 39SL2, 39SL7, 39SL8, 39SL9, 39SL10, 39SL12, 39SL13, 39SL14, 39SL16, 39SL17, 39SL20, 39SL21, 39SL23, 39SL26, 39SL29, 39SL30, 39SL31, 39SL34, 39SL36, 39SL37, 39SL40, 39SL51, 39SL55, 39SL56, 39SL202, 39ST2, 39ST3, 39ST7, 39ST21, 39ST23, 39ST26, 39ST40, 39ST42, 39ST43, 39ST45, 39ST49, 39WW8, 39WW204, 39WW233, 39WW234, 39WW301.

Also, see lists for Initial Coalescent, Extended Coalescent, and Post-Contact Coalescent.

## Bibliography

Ahler 2007; Johnson 1998, 2007; Krause 2001; Lehmer 1971; Ludwickson *et al.* 1981; Toom 1992a; Steinacher 1983

## Initial Coalescent

### Overview

At approximately 1250 CE, the onset of a drier climatic period may have influenced the movement of cultural groups out of the Central Plains north into the Missouri River area of South Dakota. “During the 13th and 14th centuries Central Plains peoples invaded and attempted to conquer the southern Middle Missouri region. After centuries of (apparently) peaceful interaction, strongly fortified villages of Central Plains tradition peoples appear on the Missouri River from Pierre south to Chamberlain” (Ludwickson 1979). The cultural contact between the Middle Missouri and Central Plains tradition peoples is the basis for the formation of Lehmer’s Coalescent tradition. He called the earliest manifestation of this coalescence the Initial Coalescent variant. Sites of this variant are found primarily in the Big Bend region, and consist of large, compact villages containing what some researchers have termed transitional Central Plains-like circular earth lodges randomly scattered inside a bastioned fortification ditch. Over twenty Initial Coalescent sites are reported from South Dakota, including the Arzberger (39HU6), Black Partisan (39LM218), Talking Crow (39BF2), and Crow Creek (39BF11) sites. Much of the current literature suggests that by 1500 CE these groups had replaced Initial Middle Missouri and Extended Middle Missouri groups in the southern Middle Missouri Subarea and that by 1500 the Extended Coalescent variant had emerged as a direct outgrowth of the Initial Coalescent. An alternative hypothesis sees the Central Plains-Initial Coalescent peoples expelling or eliminating the Initial Middle Missouri peoples almost immediately (Ludwickson n.d.:10-11). This postulates

that within a century the Initial Coalescent peoples were themselves defeated by the Extended Middle Missouri peoples and killed *en masse* (e.g., the Crow Creek massacre) or expelled. Ludwickson views the St. Helena phase sites in Cedar County, Nebraska, as being occupied by these expelled Initial Coalescent peoples. Ludwickson postulates that the Extended Middle Missouri peoples then withdrew back to North Dakota where they are recognized in the archeological record as the Terminal variant of the Middle Missouri tradition. Applying this scenario, the Extended Coalescent would represent a renewed incursion into the Middle Missouri region by Central Plains peoples to fill the void created by the expulsion of the Initial Coalescent peoples. There is a marked increase in the number of Extended Coalescent sites over the Initial Coalescent, but this circumstance may be in part attributable to a shift from nucleated settlements to smaller sites (individual farms or hamlets) with relatively short occupations.

## **Environmental Setting**

River terraces and bluffs

## **Temporal Boundaries**

1300-1600 CE

## **Spatial Boundaries**

Big Bend and Bad-Cheyenne reach of the Missouri River; one site in the White River Badlands

## **Property Types**

Villages

## **Locational Characteristics**

Central South Dakota

## **Context Definition**

Initial Coalescent sites are recognized on the basis of oval, square, or round house depressions and villages with houses arranged in a loose, linear pattern. Sites have carefully designed fortification systems combining ditches, palisades, and bastions. Sites contain a variety of stone and bone tools similar to other Plains Village types, but differing in a preference for light-colored chalcedony tool-stone and the presence of diamond-shaped beveled edge knives, plate chalcedony knives, carved stone smoking pipes, fully grooved and three-quarter grooved stone mauls, and bison skull hoe blades. Ceramics are globular vessels with constricted, rimmed mouths like those of other Plains Village cultures. They differ from Middle Missouri types in the prevalence of simple stamped, check stamped, and cord roughened surface treatment and in specific rim and shoulder decorations. Burial practices are poorly understood at present.

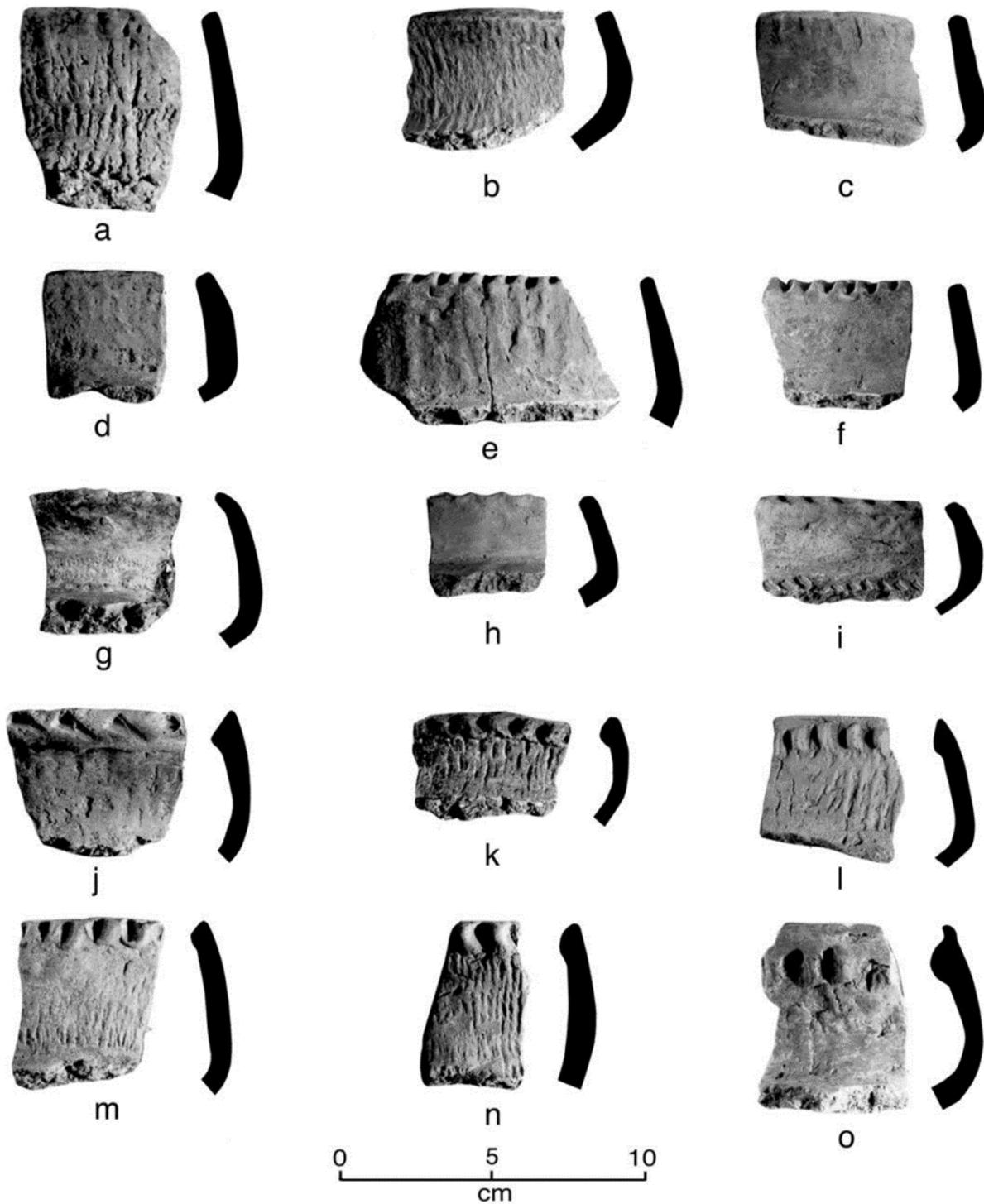


Figure 50. Initial Coalescent rim sherds: a–d, straight undecorated; e–j, straight tool impressed lip; k–o, straight finger impressed rim (from C. Johnson 2007).

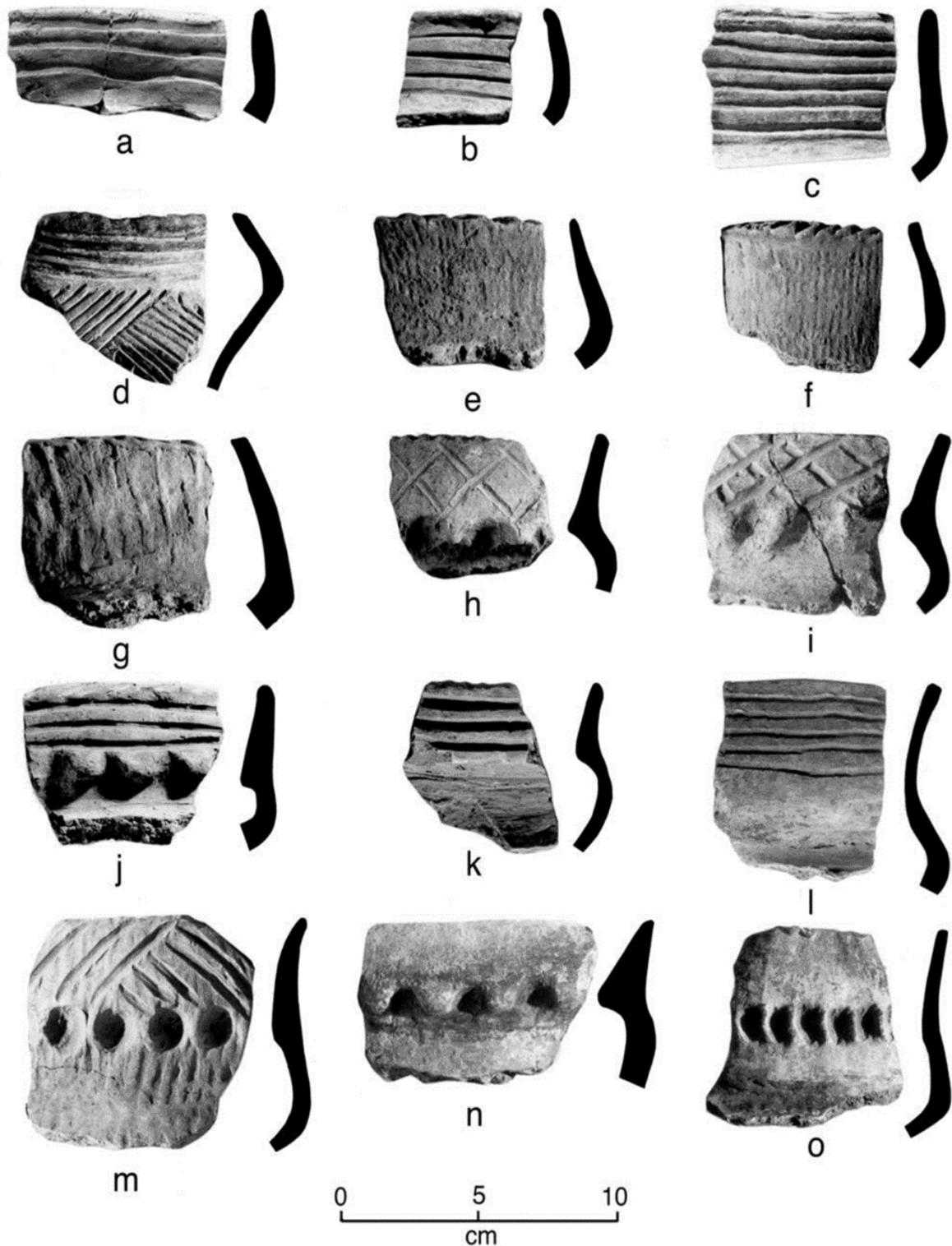


Figure 60. Initial Coalescent rim sherds: a–d, straight horizontal incised rim; e–g, straight tool impressed lip; h–i, S-shaped (collared) cross-hatch incised rim; j–l, S-shaped (collared) horizontal incised rim; m, S-shaped (collared) diagonal incised rim; n, S-shaped (collared) finger impressed rim; o, S-shaped (collared) tool impressed rim (from C. Johnson 2007).

## **Condition**

Many sites have been damaged or destroyed by construction of hydroelectric dams. Others remain partially or completely intact.

## **Voids in Research**

Although researchers agree that the Initial Coalescent derives from the Central Plains tradition, the route and exact timing of migrations are not clear, as no Initial Coalescent sites have been found in the intervening region. Some sites excavated during the River Basin Surveys projects have not been thoroughly studied.

## **Research Topics**

1. Does each Initial Coalescent variant site represent a settlement by a group of people from a single Central Plains tradition locality?
2. Did some Coalescent variant populations use a greater range of wild plant foods than Middle Missouri variant populations? Is there a fundamental difference in subsistence strategies between Middle Missouri and Coalescent populations?
3. Reanalyze materials from excavated sites to more clearly define the cultural affiliation, lifeways, and timing of the Initial Coalescent cultures.
4. Excavate portions of remaining sites using current techniques to address questions of cultural chronology, cultural variability and Arikara origins and adaptations.
5. Had the Big Bend region been largely abandoned by Middle Missouri groups by the time the Central Plains groups expanded into the area?

## **Research and Management Goals**

Excavate or protect those sites currently being damaged by shoreline erosion and looting, with the goal of minimizing additional loss of information. Involve the descendant (Arikara) people in management decisions and research planning.

## **National Register Listings**

39BF3, 39HU6, 39HU61, 39HU205, 39HU207, 39HU229, 39ST235

## **Archaeological Regions**

Big Bend, Bad-Cheyenne, White River Badlands

## **Sites**

39BF3, 39BF11, 39BF44, 39BF63, 39BF220, 39BF228, 39BF301A, 39BR6, 39GR1, 39HU6, 39HU13, 39HU61, 39HU83, 39HU205, 39HU207, 39HU224, 39HU225, 39HU229, 39HU242,

39HU241, 39LM2, 39LM6, 39LM23, 39LM26, 39LM82, 39LM218, 39SH111, 39ST121, 39ST235

## **Bibliography**

Johnson 1998; Krause 2001; Lehmer 1971; Ludwickson *et al.* 1987; Steinacher 1983

## **St. Helena Phase**

### **Overview**

This phase may have been ancestral to Initial Coalescent groups that settled in the Big Bend area (Johnson 2007) or it may represent a later movement of Central Plains groups upriver where they interacted with Middle Missouri groups and Coalescent groups already in the area (Steinacher and Carlson 1998:258-259). St. Helena phase sites are located along the Missouri River on the South Dakota-Nebraska border. This phase is generally viewed as a Central Plains Tradition development with influences from Middle Missouri and Oneota populations to the north (Blakeslee 1978). These village range in size from four to 31 lodges. The lodges have a square floor plan with an entrance ramp on one side, four support posts arranged around the center of the house, and smaller posts set along the edges. These lodges were placed over pits excavated to a depth of two to four feet. They vary widely in size and contain large interior subfloor storage pits. Artifacts include tools and ornaments made of bone and mussel shell. Pottery is similar to that of the Nebraska phase, but with a wider variety of decoration on the St. Helena vessels.

### **Environmental Setting**

River terraces and bluffs.

### **Temporal Boundaries**

1350-1450 CE

### **Spatial Boundaries**

Missouri River valley in southeastern South Dakota and northeastern Nebraska.

### **Property Types**

Villages.

### **Locational Characteristics**

Sites are located on river bluffs.

## **Context Definition**

St. Helena phase sites are recognized from the form of the lodges, the size of the villages, and distractive ceramics.

## **Condition**

The lone St. Helena phase site in South Dakota, Gavin's Point (39YK203) has been damaged by recreational development and shoreline erosion; however, the site is still largely intact.

## **Voids in Research**

The presence of St. Helena phase material in South Dakota is limited to one site. Assemblages from nearby sites of the same age should be reanalyzed to establish whether additional St. Helena components are present in the state.

## **Research Topics**

1. Does the St. Helena phase represent a relocation of Central Plains people who would contribute to the formation of the Initial Coalescent Tradition or does it represent a later development?
2. Can the St. Helena phase be convincingly linked to either the Arikara or Pawnee of historic times?
3. What kinds of interaction took place between Middle Missouri, Oneota, and St. Helena groups?
4. What impact did warfare and introduced epidemic disease have on the people represented by the St. Helena phase?
5. Does the movement northward along the Missouri River by St. Helena people suggest a permanent relocation or a short-term move?
6. Did the subsistence base of St. Helena people differ from that of neighboring groups?

## **Research and Management Goals**

Because the Gavin's Point site, 39YK203, contains multiple components, it will be key to reconstructing the cultural interactions and movements that marked the beginning of the Initial Coalescent variant. Areas of the site that are threatened by erosion should be excavated before additional loss of data takes place.

## **National Register Listing**

39YK203

## **Archaeological Region**

Yankton

## **Site**

39YK203

## **Bibliography**

Blakeslee 1988; Krause 2001; Lehmer 1971; Ludwickson *et al.* 1987; Steinacher and Carlson 1998

## **Anoka Phase**

### **Overview**

This phase is distinguished from other Initial Coalescent phases primarily on the basis of location (Johnson 2007). Its presence in South Dakota is questionable.

### **Environmental Setting**

River terraces and bluffs.

### **Temporal Boundaries**

1250-1350 CE

### **Spatial Boundaries**

Missouri River valley in southeastern South Dakota and northeastern Nebraska.

### **Property Types**

Villages.

### **Locational Characteristics**

Sites are located on river bluffs.

### **Context Definition**

The Anoka phase is defined on the basis of location of sites and presence of Initial Coalescent ceramics and features.

## **Condition**

Absent

## **Voids in Research**

At present, no Anoka phase sites have been identified in South Dakota.

## **Research Topics**

1. Does the Anoka phase represent a relocation of Central Plains people who would contribute to the formation of the Initial Coalescent Tradition or does it represent a later development?
2. Can the Anoka phase be convincingly linked to either the Arikara or Pawnee of historic times?
3. What kinds of interaction took place between Middle Missouri, Oneota, St. Helena, and Anoka groups?
4. What impact did warfare and introduced epidemic disease have on the people represented by the Anoka phase?
5. Does the movement northward along the Missouri River by Anoka people suggest a permanent relocation or a short-term move?
6. Did the subsistence base of Anoka people differ from that of neighboring groups?
7. Reexamine ceramic assemblages to see if they provide evidence for ceramic continuity from Mill Creek to Initial Coalescent (Alex and Peterson 2010)?

## **Research and Management Goals**

None at present.

## **Archaeological Regions**

None.

## **Sites**

None.

## **Bibliography**

Blakeslee 1988; Krause 2001; Lehmer 1971; Ludwickson *et al.* 1987; Steinacher and Carlson 1998; Witty 1962; Tiffany *et al.* 2011

# **Arzberger Phase**

## **Overview**

Two sites are currently assigned to the Arzberger phase of the Initial Coalescent variant, Arzberger and Black Partisan. The Arzberger site contained the remains of 44 houses inside a ditch and stockade with bastions on a bluff overlooking the Missouri River. Researchers disagree on the age of the site and the time span of the phase. Arzberger pottery includes collared rims decorated with incised crosshatching or parallel lines. These vessels often have punctates or finger impressions on the border of the collar. This division of the Initial Coalescent variant is based more on location than on demonstrated differences in the artifact assemblages and features types.

## **Environmental Setting**

River terraces and bluffs.

## **Temporal Boundaries**

1200-1350 CE or 1300-1600 CE or 1300-1500 CE

## **Spatial Boundaries**

Big Bend area of the Missouri trench

## **Property Types**

Villages.

## **Locational Characteristics**

Sites are located on river bluffs.

## **Context Definition**

The Arzberger phase is defined on the basis of location and the presence of Initial Coalescent pottery types.

## **Condition**

Portions of the Arzberger site are intact; however, much of the site was removed by gravel quarrying.

## **Voids in Research**

More research is needed to solidify the age of this phase and its relationship to other Initial Coalescent phases, as well as to archaeological complexes in Nebraska that have similar types of ceramics. At present, the database of archaeological sites in South Dakota does not list any sites

as belonging to this phase, although Johnson (2007) lists the Arzberger (39HU6) and Black Partizan (39LM218) sites.

## **Research Topics**

1. Does the Arzberger phase represent Upper Republican groups who relocated to the Big Bend area and later returned to Nebraska as proto-Pawnee Lower Loup phase people? If not, what accounts for the similarities between the ceramics of the three phases?
2. What is the age of the Arzberger phase?
3. Do sites of this phase contain evidence for links to Upper Republican and Lower Loup manifestations apart from ceramics?

## **Research and Management Goals**

The Arzberger site (39HU6) is listed on the National Register of Historic Places. It was damaged by gravel quarrying, but still contains intact archaeological deposits. Additional research at the Arzberger site will be crucial to understanding the place of the Arzberger phase in regard to local and imported cultural traditions, such as house types, village patterns, subsistence, and religious beliefs. The Black Partizan Site (39LM218) was inundated.

## **National Register Listing**

39HU6

## **Archaeological Region**

Bad-Cheyenne

## **Sites**

39HU6, 39LM218

## **Bibliography**

Johnson 2007; Spaulding 1956

## **Campbell Creek Phase**

### **Overview**

The Campbell Creek Phase is that division of the Initial Coalescent variant located at the Big Bend of the Missouri River. The phase is characterized by large, fortified villages. It is distinguished from other Initial Coalescent units by its distinctive ceramic assemblage. Pottery includes Campbell Creek, Talking Crow, and Grey Cloud wares, with cord-roughened, smooth, and simple-stamped exteriors in about equal proportions. The numerous human remains recovered

from a mass grave at the large Crow Creek site (39BF11) probably belong to this phase. These unfortunate victims of a decisive attack by some unknown group had expanded and fortified an earlier Initial Middle Missouri village, constructing at least 50 lodges and an elaborate defensive system. The battle and mass burial took place at 1325 CE (Willey and Emerson 1993).

## **Environmental Setting**

River terraces and bluffs.

## **Temporal Boundaries**

1300-1500 CE

## **Spatial Boundaries**

Big Bend of the Missouri River

## **Property Types**

Villages.

## **Locational Characteristics**

Sites are located on river bluffs.

## **Context Definition**

The Campbell Creek phase is defined on the basis of location and presence of Initial Coalescent pottery, which included S-shaped, collared, and indented-rim types. Some of the vessels are cord-marked or cord-roughened.

## **Condition**

Two of the four sites assigned to the Campbell Creek phase are partially intact: 39BF3 and 39BF11. The other two, 39BF220 and 39LM218 are inundated.

## **Voids in Research**

Only four sites are assigned to this phase. If additional sites are found to contain Campbell Creek phase or related components, a better understanding of developments in the Big Bend region can be developed. Further, additional work is needed at 39BF11 to shed light on the Middle Missouri to Coalescent transition and on the Initial Coalescent to Post-Contact Coalescent transition. Only one house was excavated at 39BF3, again raising questions about the history of Coalescent tradition developments. The other two known sites, 39BF220 and 39LM218 also contained both Initial Coalescent and Post-Contact Coalescent components; however, these sites are no longer available for further research.

## **Research Topics**

1. Does the Campbell Creek phase represent settlement by people from a single Central Plains tradition locality or does it represent an amalgamation of local and Central Plains groups?
2. How is the Campbell Creek phase related to other Initial Coalescent developments in the Big Bend region?
3. What does the evidence of warfare at 39BF11 indicate about the nature and frequency of intergroup conflict? What were the factors that contributed to intergroup conflict?
4. Can the Campbell Creek phase be convincingly linked to historic Pawnee or Arikara groups?

## **Research and Management Goals**

The remaining portions of the Crow Creek (39BF11) and Talking Crow (39BF3) sites preserve information important to our understanding of human adaptations during the Plains Village period and the Initial Middle Missouri to Initial Coalescent transition. Talking Crow is subject to minor cutbank erosion, but is generally stable. The Crow Creek site experiences more severe shoreline erosion and slumping. Periodic monitoring is recommended to assess erosion at each site. If archaeological deposits are being lost, excavations should be done to salvage the data. Attempts to protect the Crow Creek site with riprap have not succeeded. Both sites contain human remains and thus merit special monitoring and erosion prevention efforts.

## **National Register Listings**

39BF3, 39BF11

## **Archaeological Region**

Big Bend

## **Sites**

39BF3, 39BF11, 39BF220, 39LM218

## **Bibliography**

Neuman 1961; Smith 1977; Witty 1962

# **Extended Coalescent**

## **Overview**

Researchers agree that the Extended Coalescent variant represents the ancestors of the historic Arikara, Pawnee, Mandan, Hidatsa, Cheyenne, and Ponca nations. As in the Initial Coalescent, houses are circular earth lodges set in shallow pits. Villages are smaller than in the Initial Coalescent and are usually not fortified. Houses are dispersed over large areas. Where ditch and palisade fortification systems occur, house pits are found both inside and outside the fortification. The Extended and Initial Coalescent variants overlap in time, indicating that they represent different ethnic groups and not the same group at two different points in its history. Whether the Extended Coalescent represents a second migration of Caddoan-speaking people from the Central Plains is not clear, although patterns of village organization and house types are consistent with such a scenario.

Sites contain a wide variety of bone and shell tools, as well as distinctive pottery types. Extended Coalescent pottery assemblages include large amounts of incised or trailed rims, in contrast to the finger- or tool-impressed lips of Initial Coalescent pottery (Johnson 1998).

The economic base of these villages was bison hunting and farming of crops such as corn, beans, and sunflower, with extensive use of wild plants, as well. Butchering techniques differ from those of the Middle Missouri Tradition. People occupied villages on river terraces or bluffs in summer and sometimes on or near the floodplain in winter. This provided access to the farm plots in the bottomlands in summer and protection from harsh weather in winter. Intergroup interactions are not well understood, but some researchers posit that some periods were marked by a lack of conflict.

## **Environmental Setting**

River terraces and bluffs.

## **Temporal Boundaries**

1450 to 1650 CE

## **Spatial Boundaries**

Missouri River from the White to the Grand River

## **Property Types**

Villages

## **Locational Characteristics**

Central South Dakota along the Missouri River

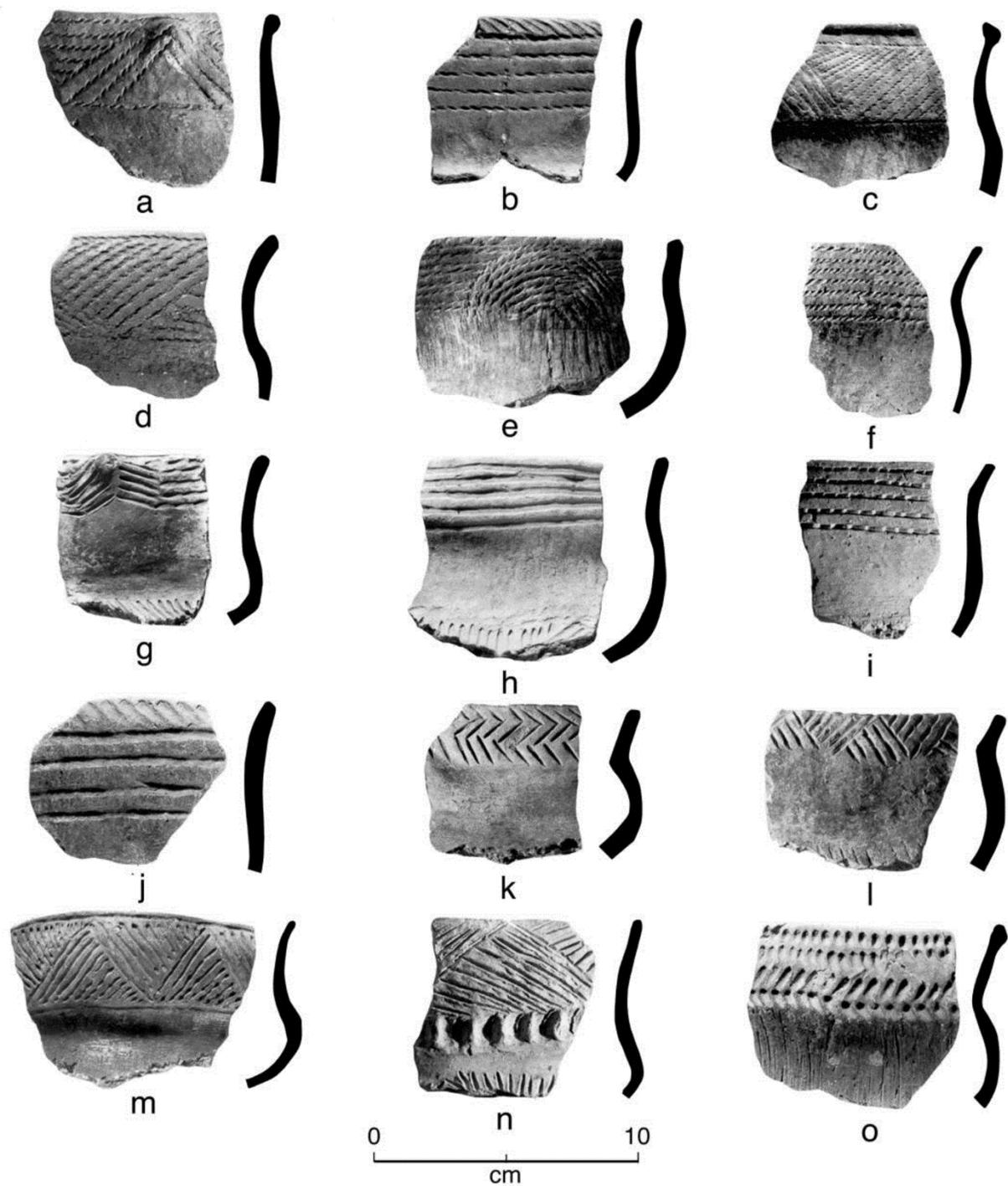


Figure 61. Extended Coalescent rim sherds: a–f, S-shaped cord impressed rim; g, h, j, S-shaped horizontal incised rim; i, S-shaped horizontal stab and drag incised; k, S-shaped herringbone incised rim; l–n, S-shaped diagonal incised rim; o, S-shaped tool impressed rim (from C. Johnson 2007).

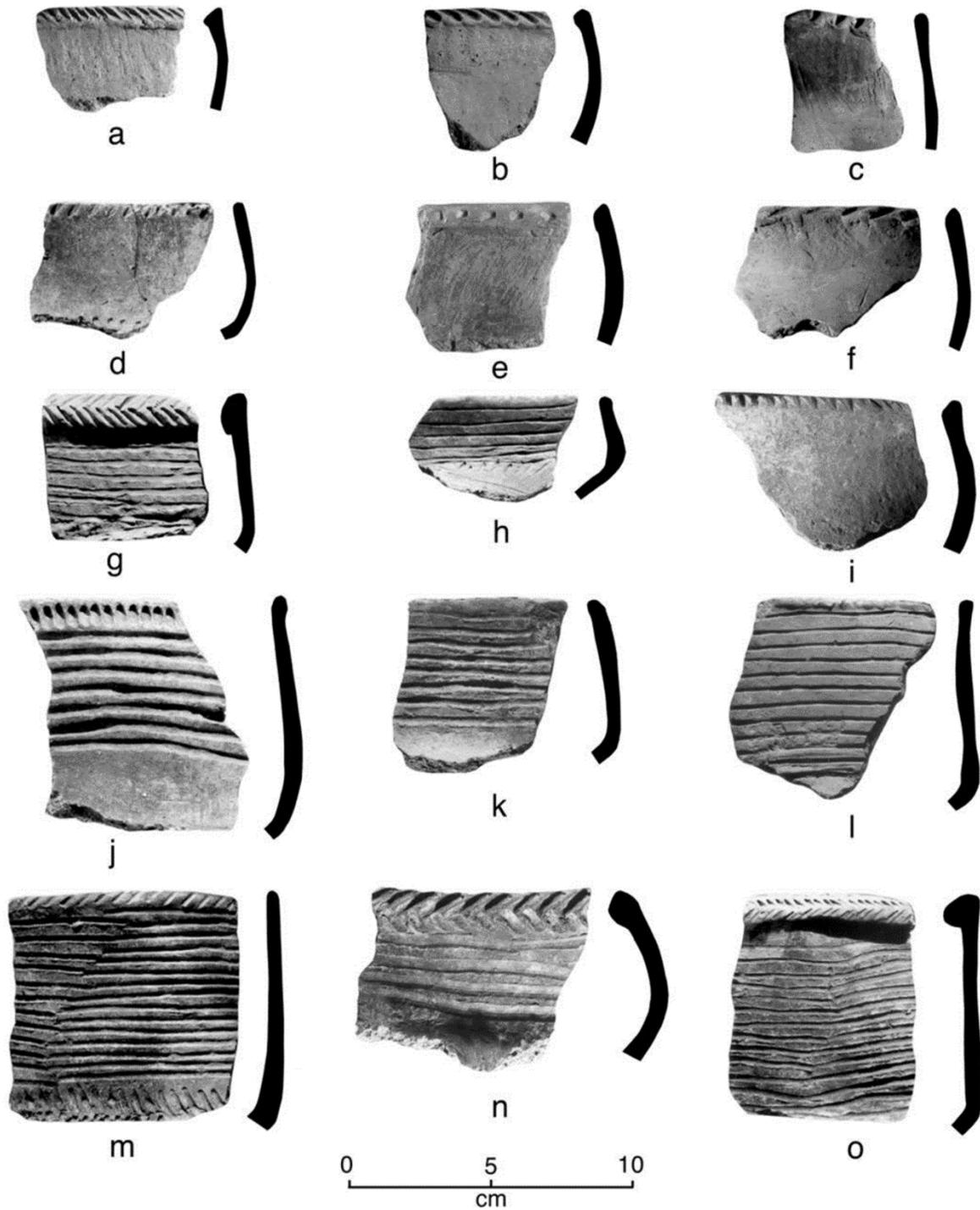


Figure 62. Extended Coalescent rim sherds: a–f, i, straight rim tool impressed lip; g–h, j–o, straight rim horizontal incised rim (from C. Johnson 2007).

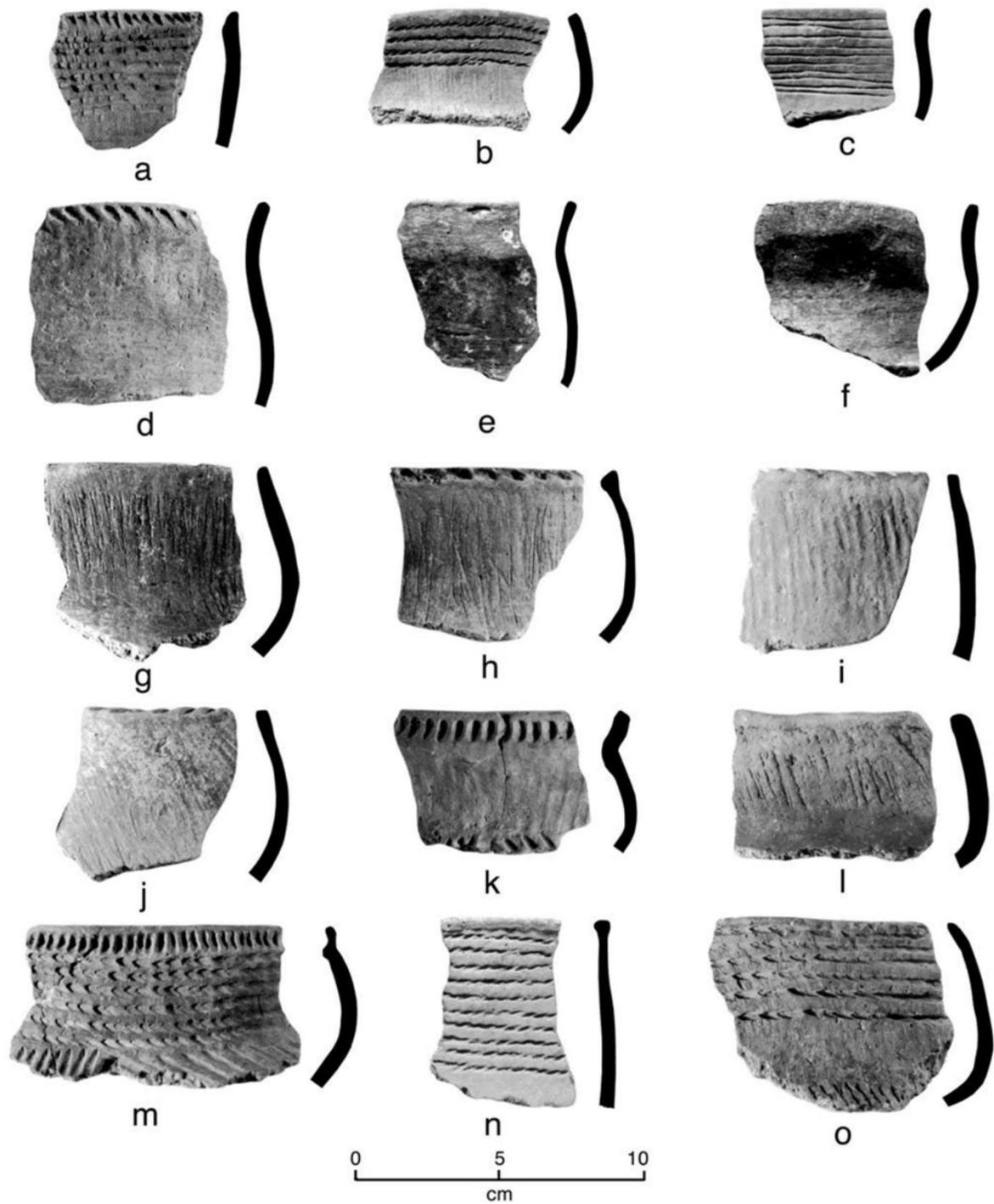


Figure 63. Extended Coalescent rim sherds: a, m, o, straight horizontal stab and drag incised rim; b, n, straight cord impressed rim (combined with cord impressed lip); c, S-shaped horizontal incised rim; d, k, S-shaped tool impressed rim; e, f, S-shaped undecorated; g, straight undecorated; h–j, straight tool impressed lip; l, straight finger impressed lip (from C. Johnson 2007).

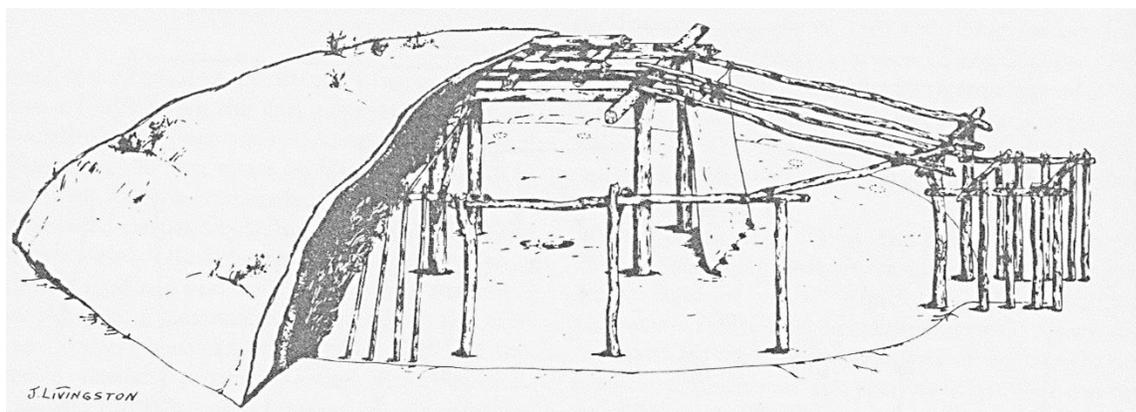
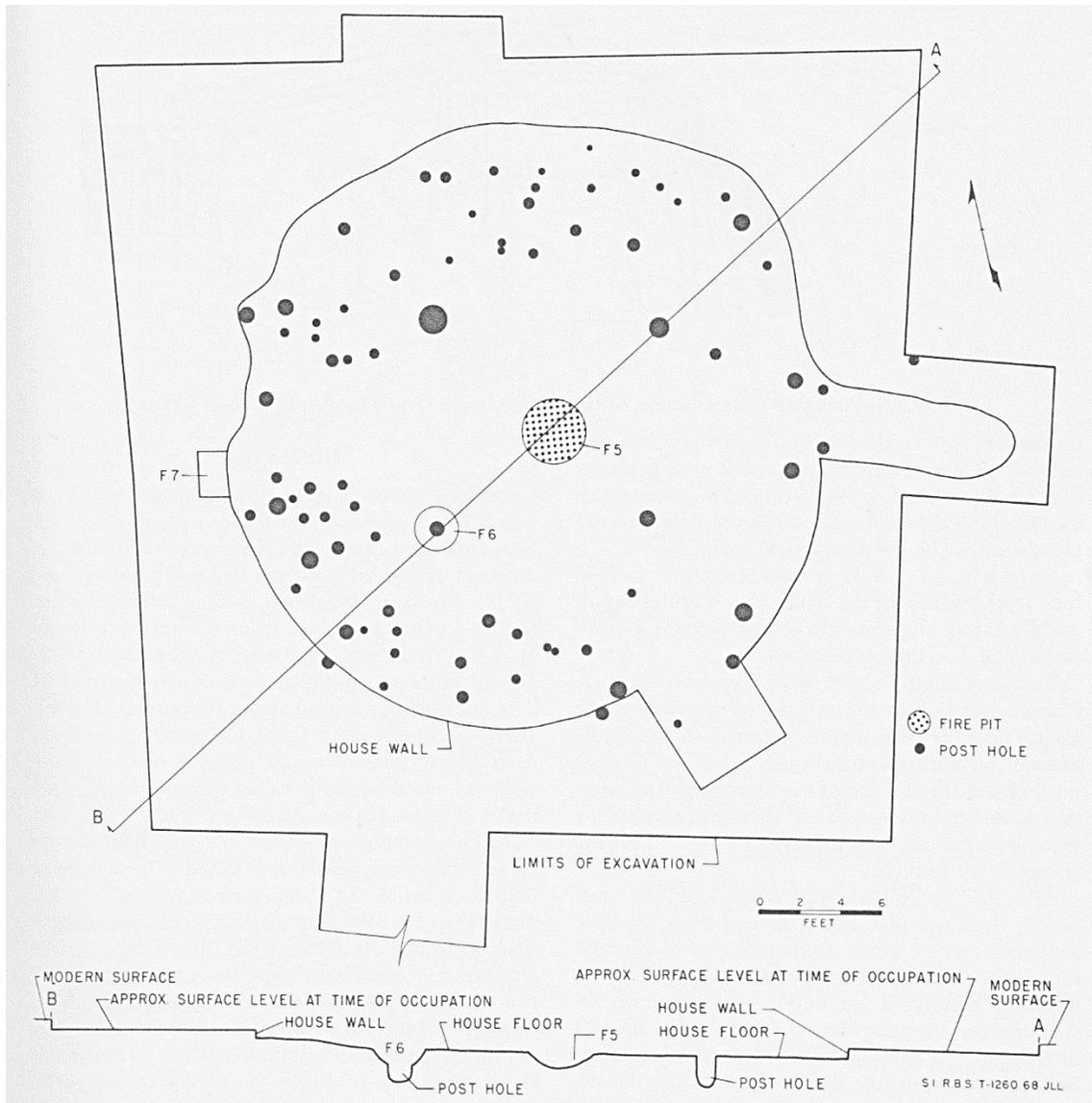


Figure 64. Extended Coalescent house plan, profile, and artist's reconstruction, Over's La Roche Site, 39ST9 (from Hoffman 1968).

## **Context Definition**

Extended Coalescent sites are defined by their location, age, house types, village organization, and ceramics. Villages are usually unfortified and dispersed. These villages are smaller than those of the Initial Coalescent variant, with an average of only 15 houses (Johnson 1998). The few fortified sites have houses both inside and outside the palisade and ditch. Fortifications are rounded and may or may not have bastions. Houses are circular and vary widely in size. Some larger structures occur, which may have served as community gathering places. Entrances are toward the river or to the east, southeast or southwest. Burials occur in pits inside and outside houses, usually without grave goods.

Extended Coalescent ceramics include thin vessels with small amounts of temper. Surfaces are usually simple-stamped or smoothed, with some vessels exhibiting brushed, incised, or trailed decoration on the rim. The bone and shell tools are similar to those of the Initial Coalescent, with the addition of ice gliders and antler hide-scraping tools similar to those from Middle Missouri tradition sites.

## **Condition**

Many of the Extended Coalescent villages have been inundated by reservoirs or damaged or destroyed by shoreline erosion.

## **Voids in Research**

Additional chronological data, combined with ceramic seriation, is needed to address questions of when and by whom Extended Coalescent culture arose in South Dakota. Earlier excavation data should be reexamined in light of new data and methods.

## **Research Topics**

1. Examine Extended Coalescent sites in the Grand-Moreau Region in light of the dates from the Davis (Lower Grand) village (39CO14). What do these dates indicate about the proposed coalescence of Central Plains and Middle Missouri tradition cultures?
2. What factors influenced interactions between local and extralocal village groups and between village and non-village cultures during this period?
3. Hoffman (1963a) sees Extended Coalescent as representing both Pawnee and Arikara. What do detailed analyses of Extended Coalescent and Lower Loup ceramic assemblages, especially in the Big Bend and Fort Randall regions, suggest in this regard?
4. Define the range of variation in size and location of Extended Coalescent villages. Were different landforms or villages occupied during different seasons?

## **Research and Management Goals**

Many sites have been destroyed or damaged by shoreline erosion and looting. Others were inundated by the reservoirs of hydroelectric dams. It is recommended that remaining sites be protected from further erosion or excavated to recover data before it is lost to erosion.

## **National Register Listings**

39BF206, 39DW234, 39HU7, 39HU102, 39HU126, 39HU202, 39HU204, 39HU205, 39HU206, 39HU210, HU214, 39HU217, 39HU219, 39LM1, 39LM2, 39LM22, 39LM207, 39ML222, 39ML223, 39ML224, 39ML227, 39ST202, 39ST218, 39ST219, 39ST222, 39ST228, 39ST232, 39WW203

## **Archaeological Regions**

Big Bend, Bad-Cheyenne, Grand-Moreau, Fort Randall, Upper Big Sioux, Central Cheyenne, South Fork Cheyenne, White River Badlands, Lower White

## **Sites**

39AR2, 39BF205, 39BF206, 39BR10, 39BR36, 39BR201, 39CO1, 39CO5, 39CO9, 39CO10, 39CO12, 39CO14, 39CO19, 39CO35, 39CO78, 39CO213, 39CO214, 39DW1, 39DW3, 39DW6, 39DW14, 39DW18, 39DW101, 39DW110, 39DW123, 39DW134, 39DW213, 39DW219, 39DW220, 39DW225, 39DW226, 39DW234, 39DW253, 39DW347, 39FA45, 39FA860, 39GR1, 39HK20, 39HU7, 39HU28, 39HU44, 39HU60, 39HU63, 39HU77, 39HU83, 39HU88, 39HU97, 39HU102, 39HU126, 39HU202, 39HU203, 39HU204, 39HU205, 39HU206, 39HU208, 39HU210, 39HU214, 39HU216, 39HU217, 39HU219, 39JK4, 39JK101, 39LK18, 39LM1, 39LM2, 39LM7, 39LM22, 39LM23, 39LM25, 39LM39, 39LM41, 39LM60, 39LM139, 39LM154, 39LM166, 39LM167, 39LM204, 39LM206, 39LM207, 39LM216, 39LM222, 39LM223, 39LM224, 39LM227, 39LM228, 39LM238, 39LM249, 39LM304, 39LM308, 39LM337, 39LM354, 39MT301, 39PN590, 39PO7, 39PO21, 39SL4, 39SL15, 39SL22, 39SL24, 39ST1, 39ST9, 39ST10, 39ST35, 39ST39, 39ST86, 38ST111, 39ST117, 39ST124, 39ST144, 39ST145, 39ST152, 39ST175, 39ST202, 39ST203, 39ST215, 39ST218, 39ST219, 39ST222, 39ST223, 39ST224, 39ST228, 39ST232, 39ST249, 39TD4, 39WW10, 39WW30, 39WW119, 39WW203, 39WW302, 39WW303

## **Bibliography**

Johnson 1998; Krause 2001; Lehmer 1971

# **Shannon Phase**

## **Overview**

See Extended Coalescent context, above.

## **Environmental Setting**

River terraces and bluffs

## **Temporal Boundaries**

1400-1650 CE

## **Spatial Boundaries**

Big Bend region

## **Property Types**

Villages

## **Locational Characteristics**

Big Bend region

## **Context Definition**

The Shannon phase includes Extended Coalescent sites in the Big Bend region.

## **Condition**

Many of the village sites have been damaged or destroyed by construction of reservoirs or by shoreline erosion.

## **Voids in Research**

Excavated sites should be reanalyzed in light of methodological advances and new information about Central Plains Tradition expansion.

## **Research Questions**

1. How does the Shannon phase differ from other Extended Coalescent phases? What do these differences suggest about interactions between various groups?
2. Can the Shannon phase be more exactly defined in light of revised ideas about its relationship to the Central Plains Tradition?

3. Did Shannon phase groups move back and forth between the Big Bend region and the Central Plains proper?

## **Research and Management Goals**

Preserve and protect remaining sites from further loss to shoreline erosion.

## **National Register Listing**

39LM223

## **Archaeological Region**

Big Bend

## **Sites**

39LM47, 39LM223, 39LM301

## **Bibliography**

Johnson 1998; Krause 2001; Lehmer 1971

## **Le Compte Focus**

### **Overview**

Le Compte focus villages were fortified. No Heart Creek (39AR2), Molstad (39DW234), and Potts (39CO19) are examples. These fortifications did not surround the entire village; some houses lay outside the fortification ditch and palisade. This Extended Coalescent development appears to have happened about 50 years after the Extended Middle Missouri villagers had abandoned the Grand-Moreau region (Johnson 2007).

### **Environmental Setting**

River terraces and bluffs

### **Temporal Boundaries**

1450-1650 CE

### **Spatial Boundaries**

North-central South Dakota

## **Property Types**

Villages

## **Locational Characteristics**

North-central South Dakota along the Missouri River

## **Context Definition**

Le Compte villages typically have fortification systems including bastions. Houses were placed both inside and outside the fortifications.

## **Condition**

The Walth Bay site (39WW203) has been heavily damaged by shoreline erosion, construction of recreational facilities, and looting. The Potts and Le Compte village (39CO19) complex has been mostly destroyed by shoreline erosion.

## **Voids in Research**

Excavated sites should be reanalyzed in light of methodological advances and new information about Central Plains Tradition expansion.

## **Research Topics**

1. How does the LeCompte focus differ from other Extended Coalescent phases? What do these differences suggest about interactions between various groups?
2. Can the Le Compte focus be more exactly defined in light of revised ideas about its relationship to the Central Plains Tradition?
3. Did LeCompte phase groups move back and forth between the Big Bend region and the Central Plains proper?

## **Research and Management Goals**

Remaining sites should be protected from further loss to shoreline erosion or excavated to salvage information before it is lost.

## **National Register Listing**

39WW203

## **Archaeological Region**

Grand-Moreau

## **Sites**

39CO19, 39CO20, 39CO202?, 39WW203

## **Bibliography**

Johnson 1998; Krause 2001; Lehmer 1971

## **La Roche Focus**

### **Overview**

The La Roche focus is an Extended Coalescent development typified by small, non-fortified villages. One researcher referred to this period as the “Pax La Roche” because it lacks evidence of violent confrontations.

### **Environmental Setting**

River terraces and bluffs.

### **Temporal Boundaries**

1450-1650 CE

### **Spatial Boundaries**

Missouri River from the White River to the Grand River

### **Property Types**

Villages, hunting camps

### **Locational Characteristics**

Central to north-central South Dakota; south of the Black Hills

### **Context Definition**

La Roche focus sites are identified on the basis of village organization (scattered and generally not fortified) and ceramics.

### **Condition**

Many sites were damaged or destroyed by shoreline erosion or inundation; a few remain intact.

## **Voids in Research**

More information is needed to understand the links between sites along the Missouri and those in the Central Plains proper.

## **Research Topics**

1. How does the La Roche focus differ from other Extended Coalescent phases? What do these differences suggest about interactions between various groups?
2. Can the La Roche focus be more exactly defined in light of revised ideas about its relationship to the Central Plains Tradition?
3. Did La Roche phase groups move back and forth between the Big Bend region and the Central Plains proper?
4. What does the apparent lack of fortification systems indicate regarding political and social organization and intergroup interactions?

## **Research and Management Goals**

Remaining sites should be protected from further loss to shoreline erosion or excavated to salvage information before it is lost.

## **National Register Listings**

39ST219, 39ST238

## **Archaeological Regions**

Big Bend, Bad-Cheyenne, Grand-Moreau, South Fork Cheyenne

## **Sites**

39BR36, 39DW225, 39HU97, 39HU201, 39HU203, 39HU206, 39LM1, 39LM22, 39MT301, 39SL29, 39ST9, 39ST144, 39ST145, 39ST203, 39ST214, 39ST219, 39ST232, 39ST238, 39WW303

## **Bibliography**

Johnson 1998; Krause 2001; Lehmer 1971

# **Akaska Focus**

## **Overview**

Akaska Focus sites are Extended Coalescent settlements in the Grand-Moreau region. They exhibit some influences from Terminal Middle Missouri and Heart River complex developments to the north (Johnson 1998).

## **Environmental Setting**

River terraces and bluffs

## **Temporal Boundaries**

1450-1650

## **Spatial Boundaries**

Missouri River north of the Moreau River

## **Property Types**

Villages

## **Locational Characteristics**

Missouri River in the Grand-Moreau region

## **Context Definition**

The Akaska focus is identified on the basis of ceramic typology.

## **Condition**

The only site listed as Akaska focus, 39PO3, is inundated.

## **Voices in Research**

The only site listed as Akaska focus, 39PO3, indicated a temporary settlement on the order of a camp rather than a village.

## **Research Topics**

1. Do Akaska villages occur in South Dakota?
2. How do Akaska focus sites differ from other Extended Coalescent sites? Do they show more influence from Middle Missouri Tradition groups?

3. How is Akaska related to other village and non-village cultures in the Grand-Moreau area?

## **Research and Management Goals**

The only site listed as Akaska focus, 39PO3, is described as a temporary settlement on the order of a camp rather than a village. As defined, Akaska focus sites are semi-permanent villages. More research is needed to determine whether Akaska villages occur in South Dakota.

## **National Register Listings**

None

## **Archaeological Region**

Grand-Moreau

## **Site**

39PO3

## **Bibliography**

Barries and Dallman 1961; Johnson 1998; Krause 2001; Lehmer 1971

## **Post-Contact Coalescent**

### **Overview**

The Post-Contact Coalescent variant encompasses Plains Village components that include horse bones and Euro-American trade goods. This archaeological culture is thought to represent the ancestors of the historic Arikara, Mandan, and Hidatsa nations. With massive population losses from imported infectious diseases and loss of military control over the Missouri River, these groups would ultimately band together into a single village north of the Knife River in North Dakota in 1844. In the two centuries preceding that move, these and other groups occupied clusters of similar earth lodge villages along the Missouri and its tributaries. These villages were concentrated near the major tributaries from the Bad to the Knife River.

Post-Contact Coalescent sites are large and sometimes feature an open central plaza. About one-third of the villages are fortified; some with more than one ditch and palisade. The presence of deep middens and evidence for rebuilding or expanding fortification systems suggests that villages were occupied for relatively long periods. Villages are larger and fewer in number than in the preceding Extended Coalescent variant. Some had large structures that may have been used for ceremonies or other community gatherings.

Houses fall into two size categories: one about 55 feet in diameter and the other about 32 feet. These structures are round and presumably looked like the earth lodges in use during historic times. Entryways extended outward from the house, generally in the direction of the river.

Pottery is somewhat thicker than that of the Extended Coalescent variant and was made with more temper in the paste. Surfaces were simple-stamped or smoothed, with smoothing or simple stamping on rims. Fewer of the vessels have decoration than in the Extended Coalescent, but some have cord- or finger-impressed rims or lips. Bone and stone tools decreased in number as metal items were retooled to serve their purposes.

## **Environmental Setting**

Bluffs and terraces of the Missouri River

## **Temporal Boundaries**

1600 to 1886 CE

## **Spatial Boundaries**

Missouri River

## **Property Types**

Villages

## **Locational Characteristics**

Missouri River in central North and South Dakota

## **Context Definition**

Post-Contact Coalescent sites are identified by the presence of Euro-American trade goods alongside Coalescent features and artifacts.

## **Condition**

Many of the large village sites have been inundated or destroyed by shoreline erosion.

## **Voids in Research**

Knowledge of Post-Contact Coalescent developments would benefit from reanalysis of data compiled during excavation projects.

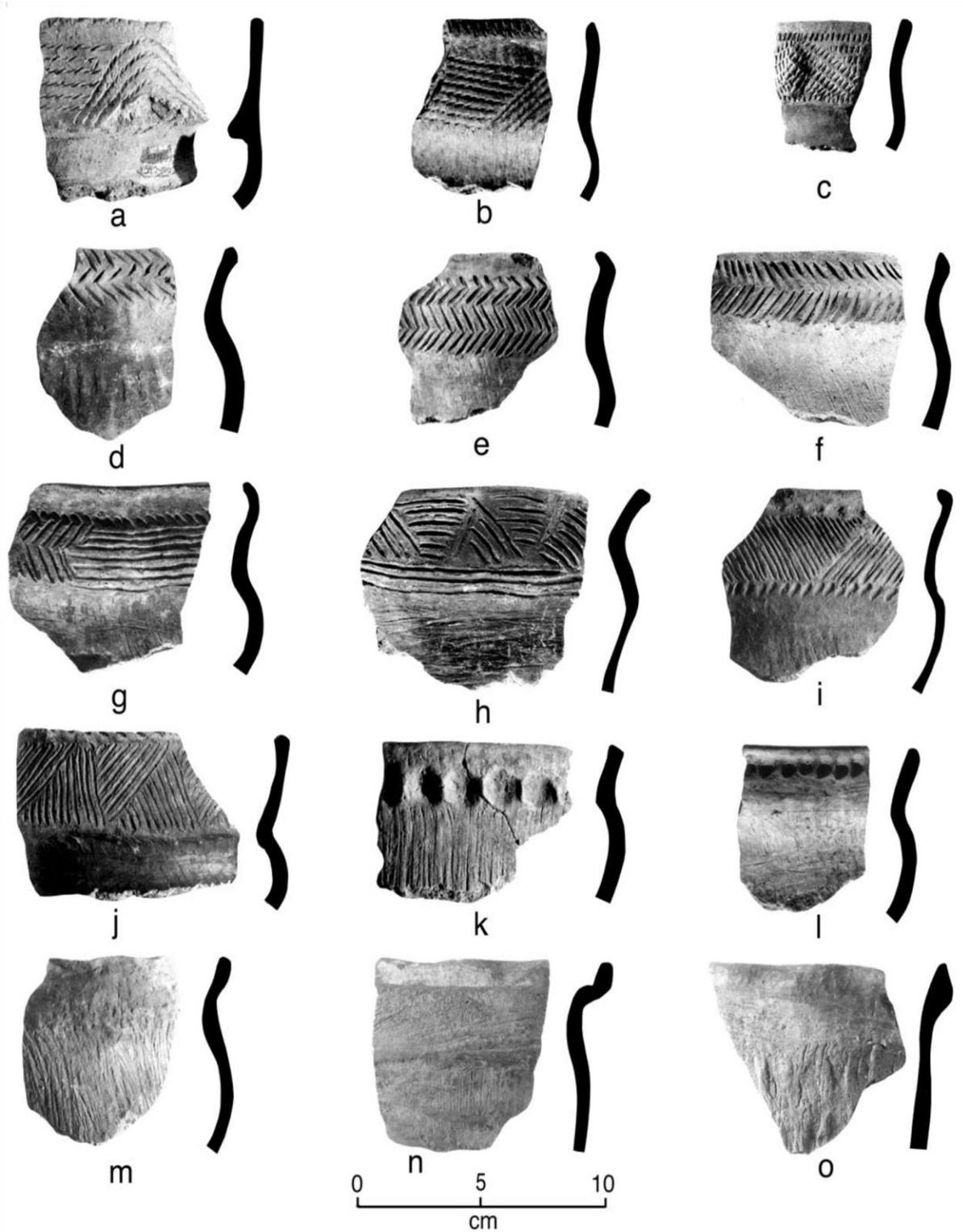


Figure 65. Post-Contact Coalescent rim sherds: a–c, S-shaped cord impressed rim; d, e, S-shaped herringbone incised rim; f, h–j, S-shaped diagonal incised rim; g, S-shaped horizontal incised rim; k, l, S-shaped tool/finger impressed rim; m–o, S-shaped undecorated rim (finger impressed lip) (from C. Johnson 2007).

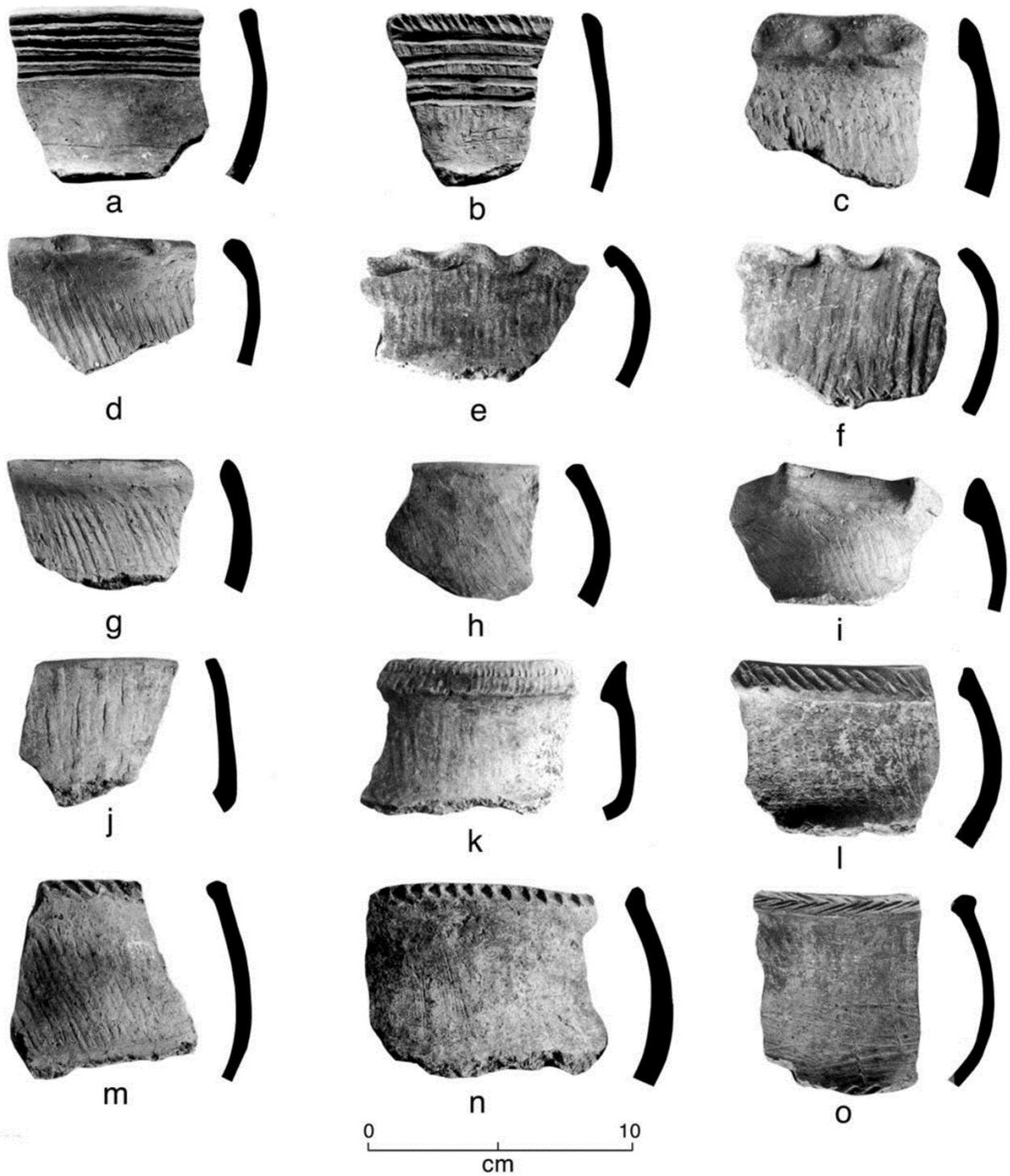


Figure 66. Post-Contact Coalescent rim sherds: a, b, straight horizontal incised; c-f, straight finger impressed; g-j, straight undecorated; k-o, straight tool impressed lip (from C. Johnson 2007).

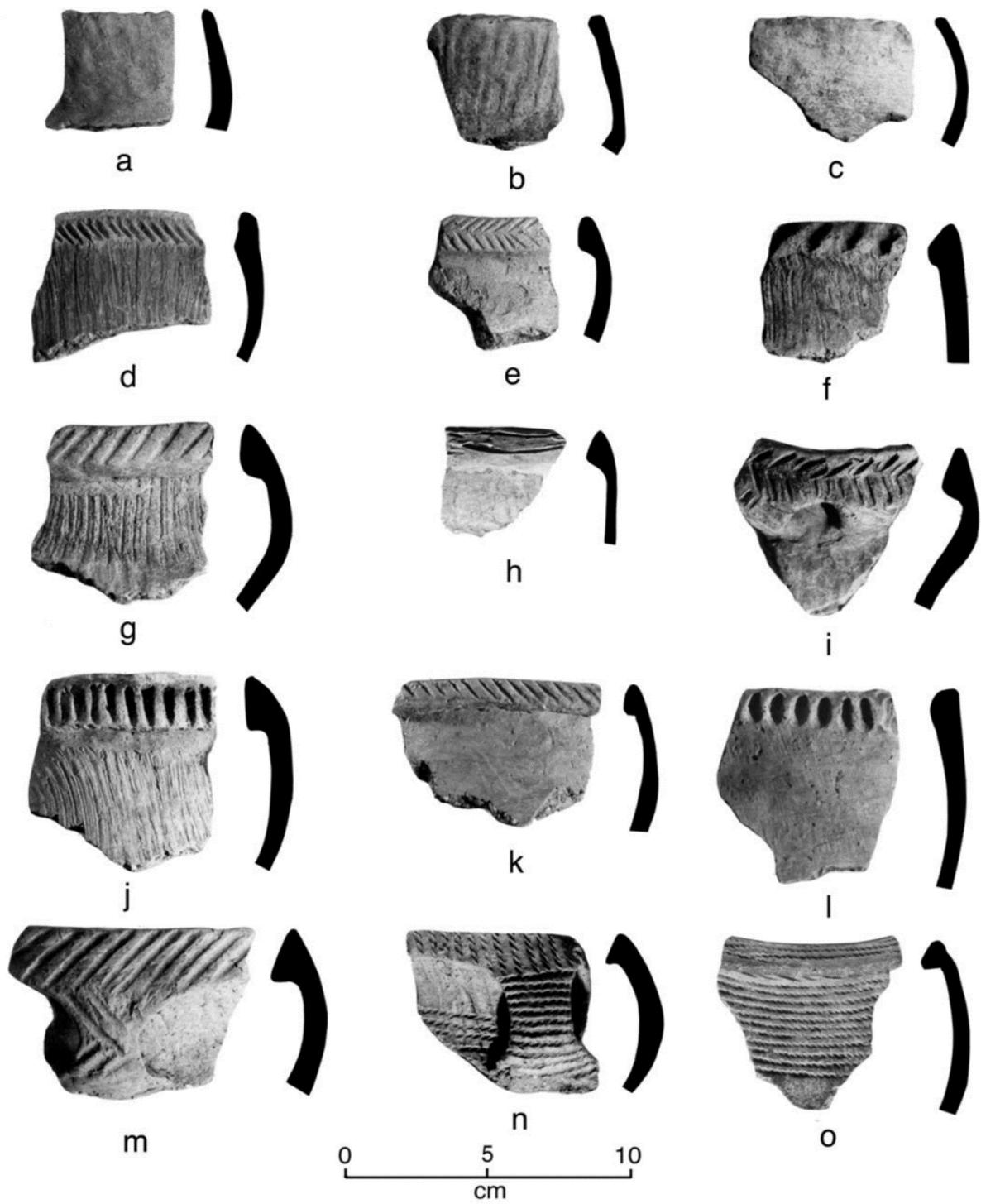


Figure 67. Post-Contact Coalescent rim sherds: a-m, straight tool impressed lips; n, o, straight cord impressed lip (from C. Johnson 2007).

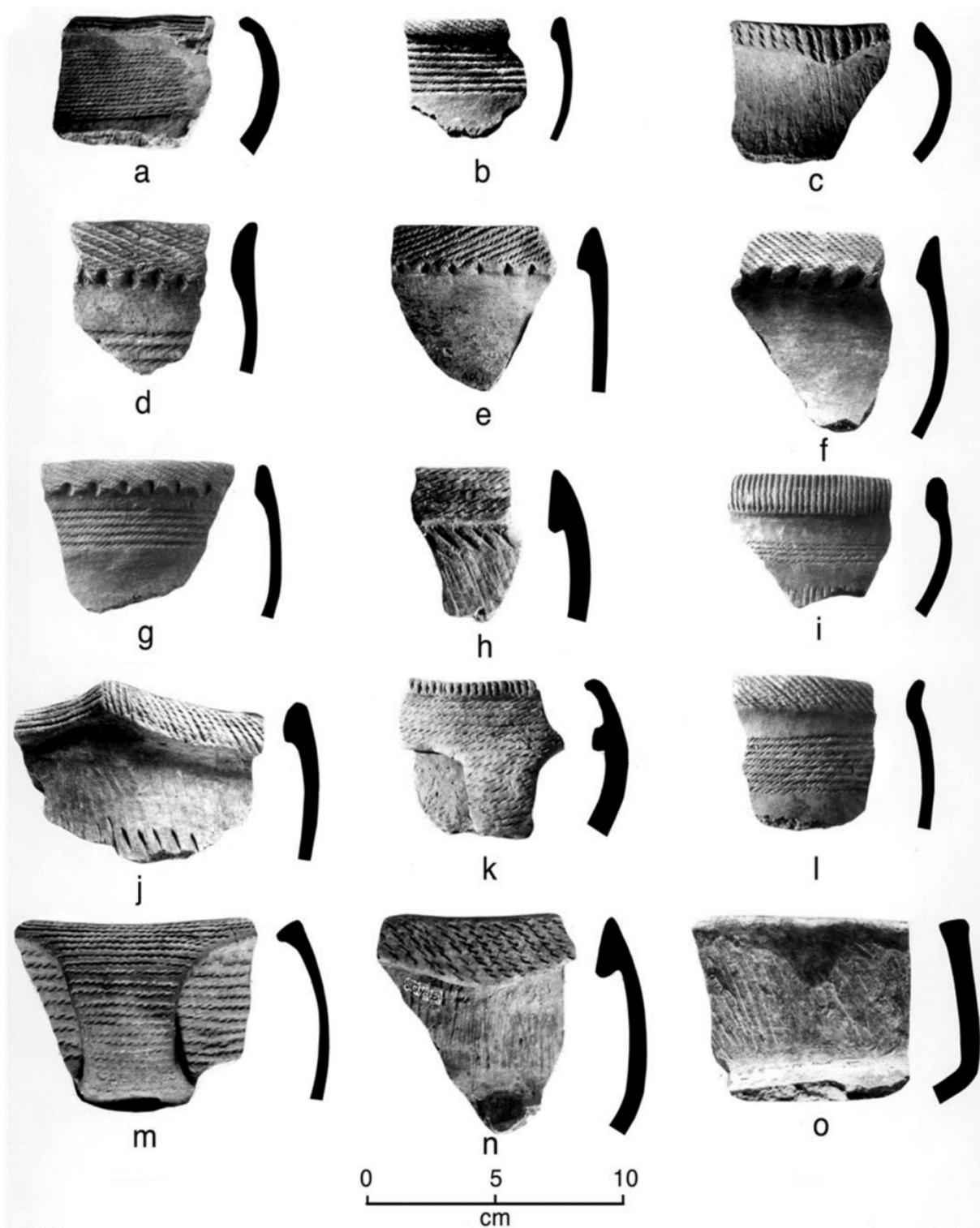


Figure 68. Post-Contact Coalescent rim sherds: a-c, e, g-o, straight cord impressed lips; d, f, S-shaped cord impressed rim (from C. Johnson 2007).

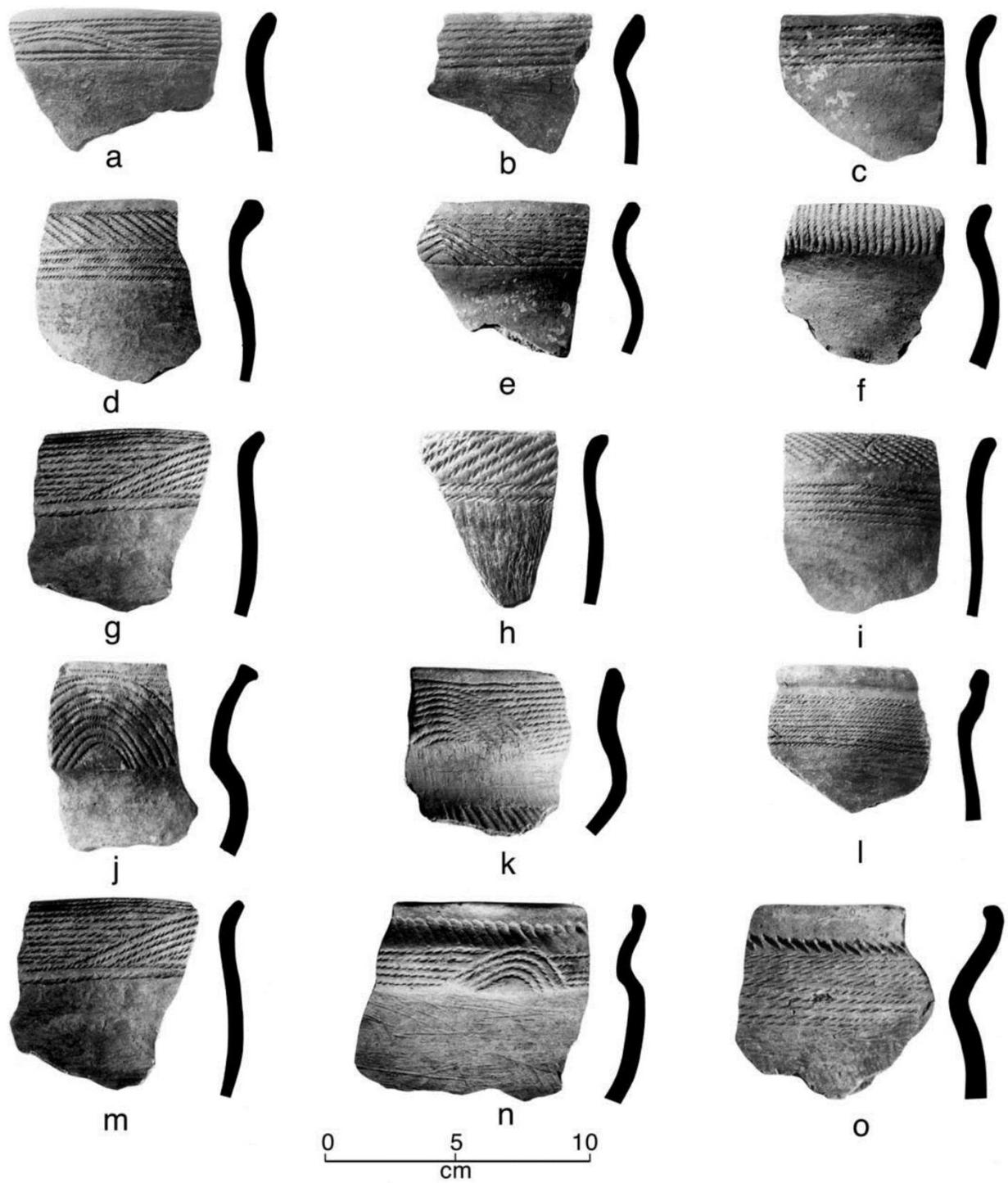


Figure 69. Post-Contact Coalescent rim sherds: a–o, S-shaped cord impressed rims (from C. Johnson 2007).

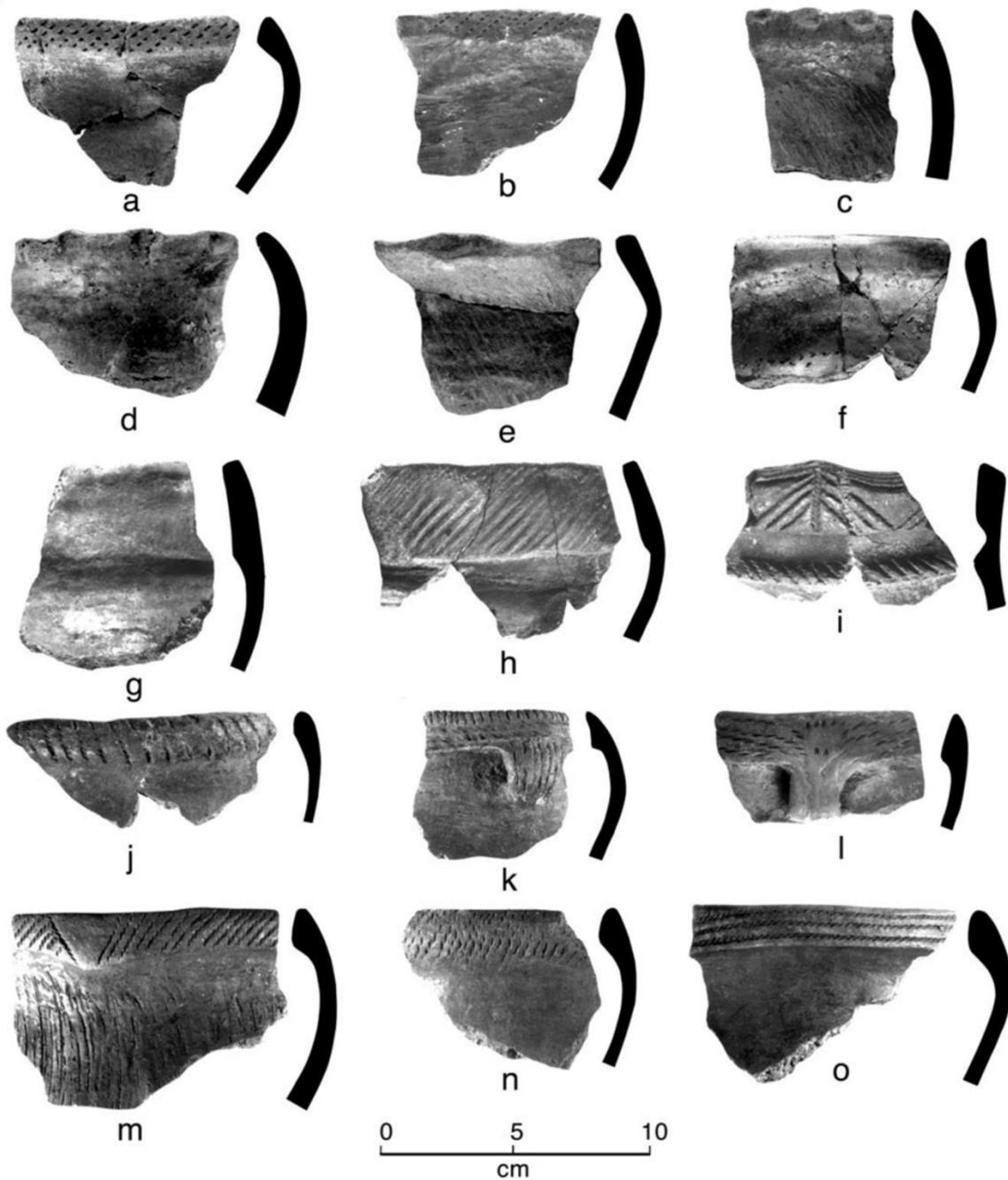


Figure 70. Post-Contact Coalescent rim sherds: a, b, straight tool impressed lip; c–e, straight finger impressed lip; g, h, Collared undecorated; i, Collared cord impressed rim; j–o, straight cord impressed lip (from C. Johnson 2007).

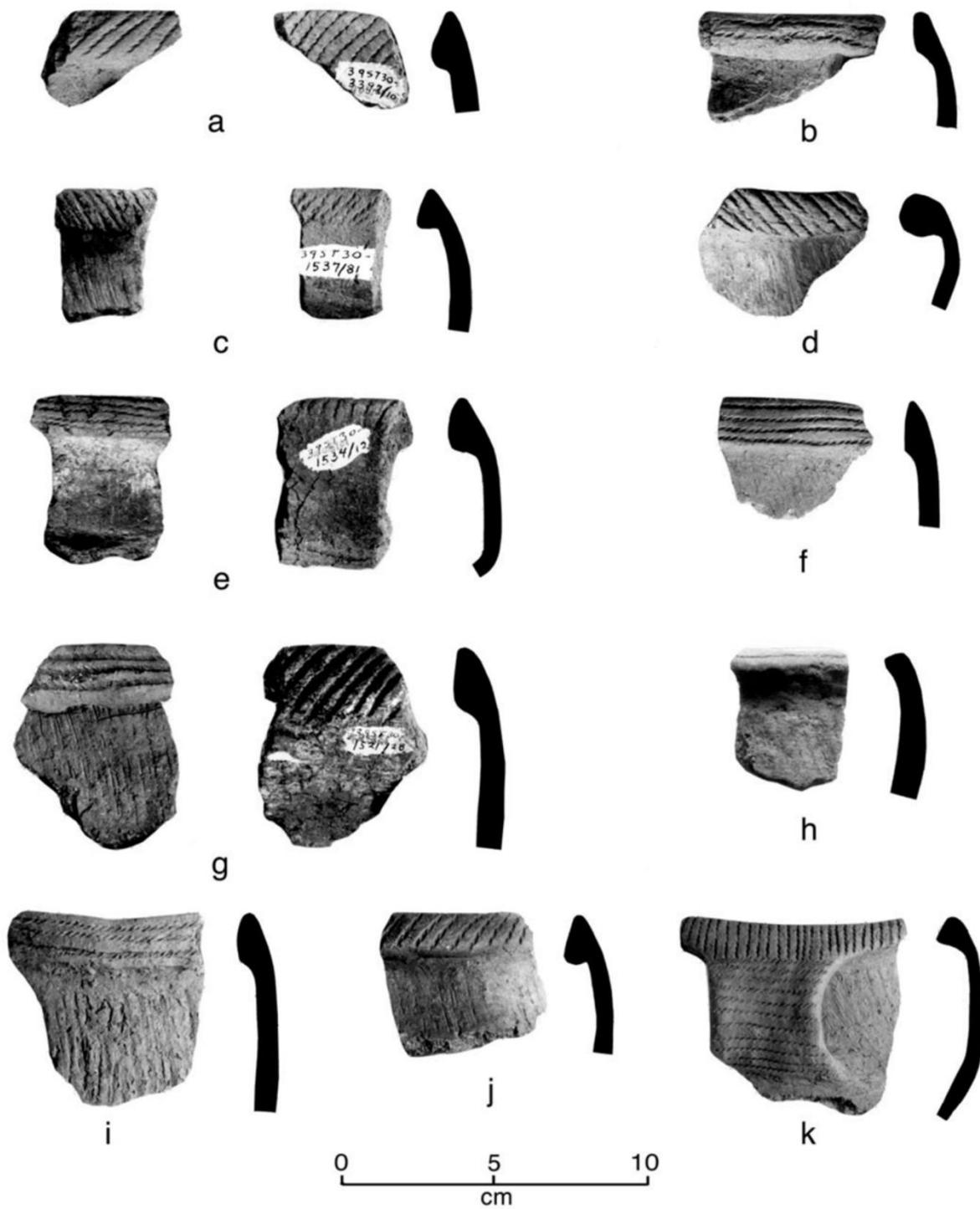


Figure 71. Post-Contact Coalescent rim sherds: a–k, straight cord impressed lip. Rims a, c, e, g are exterior (left) and interior (right) views (from C. Johnson 2007).



*Figure 72. Red Horse Hawk Site, a Post-Contact Coalescent village, 39CO34, 1963 (SI-RBS photo on file at ARC).*



*Figure 73. Excavated Post-Contact Coalescent house at Swan Creek site, 39WW7, 1953 (SI-RBS photo on file at ARC)*

## Research Topics

1. What explains the apparent shift in settlement pattern during this time? Why did Post-Contact Coalescent groups gather into larger villages? Was trade a factor, as well as defense and population losses from introduced European and Asian diseases?
2. How did the availability of manufactured trade goods affect material culture, social structure, division of labor by sex and age, and belief systems?
3. How was access to natural resources allocated as groups combined into larger communities?
4. How can archaeological research and the oral histories of descendant groups inform each other regarding the changes experienced during this period?
5. Do the various Post-Contact Coalescent phases and foci represent separate Arikara bands? Were other groups living with the Arikara at this time?
6. According to Tabeau (Abel 1939; Parks 1979), there were ten different Arikara groups, each autonomous and possibly endogamous. Can these groups be identified in the artifact assemblages, perhaps through micro-style analysis?
7. How did the various groups represented by the various phases and foci interact with one another and with other groups?
8. What was the impact of infectious disease on social and political organization during this period? Did various groups coalesce in response to declining populations? How did epidemics affect intergroup conflict and cooperation (warfare and trade)?

## Research and Management Goals

Remaining sites should be protected or excavated to prevent further loss of data from shoreline erosion.

NATIONAL REGISTER LISTINGS: 39BF3, 39BF206, 39HU5, 39HU7, 39HU217, 39HU220, 39ST17, 39ST106, 39ST235

## Archaeological Regions

Big Bend, Bad-Cheyenne, Grand-Moreau, White River Badlands

## Sites

39AR202, 39BF2, 39BF3, 39BF4, 39BF6, 39BF12, 39BF204, 39CA4, 39CA5, 39CA6, 39CA8, 39CA10, 39CH45, 39CO11, 39CO13, 39CO31, 39CO34, 39CO44, 39DW2, 39DW9, 39DW12, 39DW239, 39HU2, 39HU42, 39HU60, 39HU220, 39JK4, 39LK18, 39PO1, 39PO3, 39SH60, 39ST1, 39ST6, 39ST14, 39ST15, 39ST16, 39ST17, 39ST30, 39ST106, 39ST215, 39ST216, 39ST235, 39ST244, 39WW1, 39WW2, 39WW3, 39WW4, 39WW5, 39WW7, 39WW9

## **Sites Defined as Arikara**

39DW10, 39SL5A

## **Bibliography**

Johnson 1998; Krause 2001; Lehmer 1971

## **Felicia Phase**

### **Overview**

The Felicia phase is a Protohistoric development in the Big Bend region. Ceramic affinities suggest that this phase developed from an Extended Coalescent group represented by a cluster of sites near the mouth of the White River. Felicia phase villages lack evidence of long-term use (Johnson 2007). Sites 39BF204, 39HE202, 39LM218, and 39LM219 provide examples of this pattern. This phase, which lacks significant numbers of Euro-American trade goods, appears to develop into the post-contact Talking Crow phase and to represent the ancestors of the historic Arikara (Johnson 2007).

Houses are large (41 to 53 feet in diameter) circular earth lodges with four central support posts and a small entrance ramp. They had a large central hearth and small wall posts around the edges, but have few interior or exterior cache pits. Villages are not fortified and consist of a loose scattering of as few as two houses. Some Felicia phase villages are on lower terraces, suggesting winter occupations. Artifact assemblages are like those of other Extended and Post-Contact Coalescent phases, but with different pottery types dominating different phases.

### **Environmental Setting**

River terraces and bluffs.

### **Temporal Boundaries**

1650-1700 CE

### **Spatial Boundaries**

Big Bend region of the Missouri River

### **Property Types**

Villages

### **Locational Characteristics**

Central South Dakota at the Big Bend of the Missouri River

## **Context Definition**

The Felicia phase is identified on the basis of house form and size, village size and placement, as well as lack of fortification systems, and the relative frequency of various ceramic wares. Ceramics include both Extended Coalescent and Post-Contact Coalescent types.

## **Condition**

Most of the known Felicia phase sites are inundated. Site 39HU7, if properly placed within the phase, is the only remaining Felicia phase site.

## **Voids in Research**

Reanalysis of excavation data is needed in light of revised dates for this phase and new analytical techniques. Additional study of pottery type frequencies can help elucidate the age and cultural affiliations of this phase. Questions remain as to burial practices and range of variability of house and village configurations.

## **Research Topics**

1. Researchers have differed on the assignment of particular sites to this and other phases and foci. New techniques and data should be brought to bear on the definition of the Felicia phase in order to resolve these contradictions.
2. Is the Felicia phase a proto-Arikara development?
3. Are sites on lower terrace for winter use as has been suggested, or do they reflect a shift in social organization or subsistence strategies?
4. What explains the small size of Felicia phase villages? Does this reflect a drop in population, use of other, less durable, kinds of shelter, or a shift away from a village-based settlement pattern?

## **Research and Management Goals**

An effort should be made to identify other Felicia phase sites and to protect any remaining sites from loss of data to shoreline erosion.

## **National Register Listing**

39HU7

## **Archaeological Region**

Big Bend

## **Sites**

39BF204; 39HE202; 39HU7, 39LM218, 39LM219

## **Bibliography**

Caldwell 1966; Johnson 1998; Lehmer 1971; Smith and Johnson 1968

## **Talking Crow Phase**

### **Overview**

Around 1700 the protohistoric Felicia Phase developed in place in the Big Bend region into the Talking Crow phase, represented by the Medicine Crow (39BF2), Talking Crow (39BF3), and Oacoma (39LM26 and 39LM27) sites. Most of the Talking Crow villages were unfortified; however, Fort George Village and Iron Shooter had fortifications. Fort George may have been formed from the remnants of several Terminal Coalescent groups that had been depopulated by epidemic disease introduced from Europe (Johnson 2007). Other excavated villages assigned to this phase are Peterson and Amos Shields.

Talking Crow phase villages occur on both sides of the Missouri River in the Big Bend region and on the left bank of the river north of the Big Bend. Villages range in size from 15 to 50 houses. Villages are compact, but not fortified. Houses are circular with a four-post support system and central hearth. Some larger structures have been interpreted as places for ceremonies or other community gatherings.

Talking Crow ceramics show clear links to Central Plains types, such as those of the Lower Loup phase. It seems most likely that Talking Crow sites represent the immediate ancestors of the historic Arikara, but direct migration to, and use of, these sites by Pawnee is also possible (Lehmer 1971).

### **Environmental Setting**

River terraces and bluffs

### **Temporal Boundaries**

1675 to 1750 CE

### **Spatial Boundaries**

Missouri River in the Big Bend and Bad-Cheyenne regions

### **Property Types**

Villages

## **Locational Characteristics**

Central South Dakota at and near the Big Bend of the Missouri

## **Context Definition**

Talking Crow sites are recognized by village configuration, house type, and ceramic assemblages. Although this phase appears to be well represented in the Big Bend region, few sites have been directly assigned to it.

## **Condition**

Most sites are relatively intact. One site was destroyed by construction, and others are actively eroding from wave action.

## **Voids in Research**

Data from previous excavation projects should be reexamined using new techniques and methods.

## **Research Topics**

1. What accounts for the appearance of the Felicia phase in the central portion of South Dakota?
2. Can Felicia phase components be linked to historic Arikara groups?
3. What do the form, size, and distribution of sites indicate regarding intergroup relations?
4. Are there unrecognized Felicia phase sites in the Middle Missouri?
5. How did the availability of horses and Euro-American trade goods affect Felicia phase lifeways?
6. How can Arikara oral history and Felicia phase archaeology inform each other?

## **Research and Management Goals**

Protect remaining sites from additional loss of data from shoreline erosion and construction activities.

## **National Register Listings**

39BF3, 39HU217, 39HU220, 39ST17

## **Archaeological Regions**

Big Bend, Bad-Cheyenne, Fort Randall

## **Sites**

39BF2, 39BF3, 39BR6, 39BR201, 39CH7, 39HU217, 39HU220, 39LM26, 39LM27, 39ST17

## **Bibliography**

Lehmer 1971; Smith 1951

## **Bad River Phase**

**OVERVIEW:** The Bad River phase is a Post-Contact Coalescent development centered on the right bank of the Missouri River in the area between the Bad and Cheyenne rivers. This phase represents the immediate ancestors of the historic Arikara nation.

This phase is divided into two periods: Bad River I (1675-1740) and Bad River II (1740-1795). Bad River populations appear to have increased between 1700 and 1750 (Johnson 2007). This coincides with the period when the horse frontier from the west and gun frontier from the northeast met in the Middle Missouri region. This was also when the first actual contacts between Native Americans and Euro-Americans happened in the region. Based on ceramic types, it appears that one or more Bad River phase groups migrated north to the Grand-Moreau region where they established Blue Blanket Island village (Johnson 2007).

Bad River I villages are small (15 to 30 houses), dispersed, unfortified settlements. Houses are circular earth lodges with a central hearth, entrance passage, and four-post support for the roof and walls. A larger structure in the center of the village had an earthen platform altar at the side opposite the entrance. Bad River II villages are the same size, but more compactly arranged. They were surrounded by curvilinear ditches, sometimes with palisades. Burial patterns for Bad River I are unknown. During the Bad River II phase, cemeteries were established near villages. Bodies were wrapped in buffalo robes and placed in individual graves in a flexed or semi-flexed position and covered with planks or logs. Some multiple burials occur.

As would be expected, the number of factory-made trade goods increases over time. Gun parts, metal items, and horse bones are common in Bad River II sites. Pottery includes various Extended and Post-Contact Coalescent wares. Ceramics exhibit straight or curved braced and thickened rims, either undecorated or with tool, finger, or cord impressions on the lips and rim braces (Johnson 2007).

## **Temporal Boundaries**

1675-1795 CE

## **Spatial Boundaries**

Right bank of the Missouri River in the Bad-Cheyenne and Grand-Moreau regions

## **Property Types**

Villages

## **Locational Characteristics**

Central South Dakota on the Missouri at and north of its confluence with the Bad River

## **Context Definition**

Bad River phase sites are identified on the basis of village size and arrangement and on the ceramic assemblage. The two divisions show differences in village configuration, presence or absence of fortifications, and amount of Euro-American trade items.

## **Condition**

Many sites were inundated by reservoirs or damaged by shoreline erosion.

## **Voids in Research**

This phase is relatively well researched, but burial practices of Bad River I are unknown.

## **Research Topics**

1. What explains the adoption of fortification systems during the Bad River II phase?
2. What do village arrangements indicate regarding political and social organization?
3. What was the function of the large structure found at the center of many Bad River phase villages?
4. Were Bad River phase groups in contact with Lower Loup groups in Nebraska? What do Bad River assemblages indicate about migrations and interactions between these two Arikara-Pawnee areas?
5. How did the availability of horses and Euro-American trade goods affect Bad River phase lifeways?
6. How can Arikara oral history and Bad River phase archaeology inform each other?

## **Research and Management Goals**

Remaining sites should be protected from further loss to shoreline erosion and looting or excavated to salvage remaining data.

## **National Register Listings**

None

## **Archaeological Regions**

Big Bend, Bad-Cheyenne

## **Sites**

39HU10, 39SL19, 39ST6, 39ST14, 39ST15, 39ST30, 39ST122, 39ST203, 39ST244

## **Bibliography**

Hoffman 1970; Hoffman and Brown 1965; Lehmer 1971; Lehmer and Jones 1968

## **Le Beau Phase**

### **Overview**

The Le Beau phase is Post-Contact Coalescent development along the Missouri River north of the Big Bend. Most sites are in the Grand-Moreau region. Villages vary widely in size, but most are very large. Villages tend to be compact. Those in the north are consistently surrounded by a curvilinear fortification ditch, while the more southern villages sometimes lack fortification systems. Sometimes villages have concentric fortifications, indicating that the ditches were rebuilt as the village expanded.

Houses are large, circular structures with a four-post support for the superstructure. Some villages contain a larger structure. This may have been used for ceremonies or other gatherings. Burial practices include both primary and secondary flexed burials. Pottery is intermediate between two Stanley and Talking Crow wares, both of which are thought to be proto-Arikara.

### **Environmental Setting**

River terraces and bluffs.

### **Temporal Boundaries**

1650 to 1785 CE

### **Spatial Boundaries**

Left bank of the Missouri River in the Bad-Cheyenne region and both sides of the river in the Grand-Moreau region

### **Property Types**

Villages

## **Locational Characteristics**

Central and north-central South Dakota along the Missouri River

## **Context Definition**

Le Beau phase sites are identified on the basis of village configuration and ceramic assemblages. Sites show variation from north to south in fortification, village form, and ceramic assemblages.

## **Condition**

Three of the four listed Le Beau phase sites have been inundated.

## **Voids in Research**

Le Beau phase assemblages should be reanalyzed in light of new dating methods and ceramic seriation data. Additional data from the remaining sites will also help untangle the age and cultural affiliation of the villages assigned to this phase.

## **Research Topics**

1. To what extent were Le Beau phase groups influenced by proto-Mandan groups to the north?
2. What impact did the influx of Euro-American trade goods have on Le Beau phase cultural developments?
3. What is the relationship between Le Beau and Post-Contact Coalescent sites farther south along the Missouri River?

## **Research and Management Goals**

Le Beau phase assemblages should be reanalyzed in light of new dating methods and ceramic seriation data. Additional data from the remaining sites will also help untangle the age and cultural affiliation of the villages assigned to this phase.

## **National Register Listings**

None

## **Sites**

39DW2, 39PO3, 39WW2, 39WW3, 39WW7

## Bibliography

Hurt 1957; Lehmer 1971

## Oneota Tradition

### Overview

(Extracted with minor changes from Hanenberger 2004c)

The Oneota tradition is part of a broader cultural entity known as Upper Mississippian Culture, which includes the Fort Ancient tradition of Indiana and Ohio (Griffin 1943) and the Langford tradition of northern Illinois (Brown *et al.* 1967). The Oneota tradition is widespread, extending from the forest regions around Lake Michigan in Indiana and Wisconsin through the Prairie Peninsula region of the Midwest, and out onto the edge of the Great Plains in North and South Dakota, Nebraska, and Kansas. Oneota culture is represented by more than a dozen ceramic subgroups or phases, which reveal distinct geographic and temporal identities. As with most broad cultural manifestations, it is difficult to define universal Oneota traits, but some noteworthy distinctions appear to have temporal and spatial continuity. Oneota subsistence was based on hunting, gathering, and horticulture. The typical settlement pattern was that of large to small unfortified villages located near major river drainages or lakes. Small seasonal hunting or gathering encampments are also known. Common Oneota artifacts include decorated, shell-tempered jars, hoes made from of bison or elk scapulae, small endscraper, small unnotched projectile points, copper ornaments, and, in later periods, catlinite disk and elbow pipes and inscribed catlinite plaques (Henning 1998:348–352). Cache pits and trash pits are common. Cultural complexes with partial or primarily grit-tempered pottery are sometimes included in the Oneota tradition when they otherwise share the broader Oneota material characteristics.

Oneota structures were generally rectangular wall-trench structures with subterranean basins or pole structures of the wigwam and longhouse type (McKusick 1973:53–60; Henning 1998). The pole structures ranged from small ovoid and rectangular houses to large longhouse type dwellings. The latter appear to have had few or no prepared house basins. Historically, these dwellings were covered with bark, mats or skins. Skin-covered tipis were also in wide use in historic times. As some Oneota groups moved onto the Missouri, they adopted the plains earth lodge. Burial practices varied and included mound interments, cemeteries, pit burials, and extended individual burials (Henning 1998).

Although earlier dates may be indicated, the generally accepted temporal range for the Oneota tradition is 900 to 1775 CE (Henning 1998:353). The tradition has been subdivided into temporal periods of Emergent (900–1000), Developmental (1000–1350), Classic (1350–1650) and Historic (1650–1775). Oneota sites appear to represent several Siouan-speaking peoples: the Chiwere-speaking Ho-Chunk in east-central Wisconsin; the Missouri along the lower Missouri River; the Ioway in northern Iowa, southeastern Minnesota, and southwestern Wisconsin; and the Oto in southern Minnesota and northern Iowa (Gibbon 1994:139). The Siouan Dhegian-speaking Omaha, Ponca, Kansa and Osage are linked to Oneota sites in and near South Dakota (Henning 1998:353). The Dakota-speaking Mdewakonton Dakota may also have shared some aspects of Oneota culture.

Based on the current archaeological record, there are about two dozen recorded Oneota sites statewide, defined on the presence of shell-tempered pottery. Most are in the southeastern part of the state on or near the Big Sioux, Vermillion, James, and Missouri Rivers. A few sites are located on lakes in the Coteau des Prairies region, the Minnesota-Red River region in the extreme northeastern part of the state, and the upper reaches of the James River. Small quantities of shell-tempered sherds have also been found in other Plains Village sites in South Dakota.

The Blood Run/Rock Island site (13LO2/39LN2) is the most intensely investigated Oneota site in South Dakota. It is located on both sides of the Big Sioux River in Lyons County, Iowa (Blood Run site) and Lincoln County, South Dakota (Rock Island site). The archaeological investigations have focused almost entirely on the Iowa side. It is reportedly the largest Oneota village on record, with a 600-acre core area and another 600 acres of outlying areas (Henning 1998:383). The village was occupied from around 1500 CE into the early 1700s. The Blood Run site was historically documented as an Omaha village (Henning 1998:384).

Early descriptions mention some 275 conical mounds, an earthen embankment enclosing five mounds, and a possible effigy mound (Harvey 1979:135–156; Henning 1998:383–385). Mound diameters were estimated to range from 30 to 60 ft in diameter and 2 to 8 ft in height. Some 150 to 800 circular to ovoid boulder alignments were also present. The elliptical rock rings measured 124 by 34 feet, and the circular alignments were 30 to 34 feet in diameter. The rings appeared to have openings to the southeast. Pitted boulders were also noted on the site surface. Land clearing for agriculture has now obliterated the earthen embankment, rock alignments and most of the mounds.

Burial practices at the site included both mound burials and pit burials. Excavations uncovered mostly pit features, some of which were large bell-shaped pits filled with village refuse. Any evidence of structures appears to have been erased by cultivation. The mound burials are late, as European trade goods of iron, brass, and glass, as well as horse remains, were found with the burials. Some of the cultural materials include grit-tempered, shell-tempered, and grit- and shell-tempered pottery, copper ornaments, glass beads, small unnotched arrow points, small endscrapers, grinding slabs, manos, celts, axes, sandstone shaft abraders, inscribed plaques, and elbow, disc, and effigy pipes. Catlinite is commonplace. Blood Run ceramics show a strong presence of grit-tempered pottery. Apart from the presence of pottery without shell temper, the overall material assemblage fits well with Oneota culture. Vessels were jars and a few bowls with plain surfaces. Jars had vertical rims with tool impressions. Shoulders were plain or incised, trailed, or punctated (Harvey 1979).

Few other sites have undergone systematic archaeological excavations, and the exact timing of Oneota cultural development in South Dakota is unclear. Current practice is to place any site with significant amounts of shell-tempered pottery in the Oneota tradition. Whether some of these finds are the result of trade, and not actual Oneota occupations, deserves further consideration.

In South Dakota, the Oneota Tradition includes the Olivet phase.

## **Environmental Setting**

Near rivers and lakes

## **Temporal Boundaries**

900-1870 CE

## **Spatial Boundaries**

Southeastern portion of South Dakota, along the Missouri, James, and Big Sioux rivers, and northwestern Iowa. Oneota sites occur throughout the upper Midwest and eastern Great Plains.

## **Property Types**

Villages, mounds, burials, hunting camps

## **Locational Characteristics**

Southeastern portion of South Dakota, along the Missouri, James, and Big Sioux rivers.

## **Context Definition**

Oneota sites are recognized from the presence of shell-tempered pottery, other distinctive pottery, and items exhibiting a strong Mississippian influence, such as engraved catlinite tablets.

## **Condition**

The Blood Run site is protected as a national landmark. Other sites in this region are threatened by urban development.

## **Voids in Research**

Only one Oneota site in the region, the Blood Run site, has been intensely studied. Because Blood Run is extraordinarily large and long-lived, it probably is not typical of Oneota occupation of South Dakota. The basics of house type, smaller villages or settlements, and subsistence are not well defined for the South Dakota Oneota.

## **Research Questions**

1. Centers of Oneota cultural development are scattered throughout the Upper Midwest and eastern Great Plains. Did these various centers develop at different times or do they have different ages of onset?
2. Mississippian influences are thought to reflect a well-established trade relationship between the Southeast and the northern Great Plains. What items were being traded, who controlled the trade, and how did it change over time?

3. Does the Oneota tradition represent Siouan expansion out of the Southeast? If so, what does this indicate about prehistoric movements of people?
4. The Mississippian cultures of the Southeast include large urban centers and scattered villages and hamlets. Does the Blood Run site represent a northern version of this pattern? If so, what was the area from which it garnered natural resources and crops? How did large and small settlements interact?
5. How did Oneota peoples interact with other Plains Village cultures and with non-village cultures in the region?
6. Were horticultural practices the same among Oneota and other Plains Village cultures in the region?
7. To what extent do designs on Oneota pottery and incised tablets reflect Mississippian traditions and beliefs? Can these be traced through to historic Omaha, Ponca, Ioway, and Oto materials?
8. What house types were present in the South Dakota Oneota? How were villages configured?
9. How do Oneota sites on the James River compare with other Oneota sites? Do the James River sites represent frontier sites or a separate Oneota center?
10. What is the relationship between eastern woodlands/prairie Oneota culture and western plains Oneota? Are they contemporaneous? Did they have different kinds of subsistence and trade?
11. Did the Oneota tradition in South Dakota arise out of a Woodland base or was it wholly imported from areas to the east and south?

## **Research and Management Goals**

Basic research is needed on Oneota sites in South Dakota. Some research questions can be addressed through surface collections and existing site data, but others will require excavation. Stratified sites will be of special importance in understanding the origins of Oneota and its relationship to other Plains Village cultures in the area.

## **National Register Listing**

39LN2

## **Archaeological Regions**

Lower Big Sioux, Upper Big Sioux, Northeastern Lowlands, Upper James, Yankton

## **Sites**

39BK7, 39BN72, 39BR17, 39CL1, 39CL9, 39DV21, 39DV23, 39HS34, 39HS38, 39HS39, 39HS40, 39HS41, 39HS45, 39HT53, 39HT57, 39HT60, 39HT63, 39HT73, 39LN1, 39LN2, 39R045, 39YK39

## **Bibliography**

R. Alex 1981a, 1981b; Henning 1998

## **Olivet Phase**

### **Overview**

The Olivet phase is known from a dozen sites in the lower James River valley. These sites are large, shallow artifact scatters found in the floodplain and on the first terrace of the river. They contain a variety of artifacts, including ceramics, chipped-stone tools, manos, abraders, grooved mauls, and catlinite smoking pipe fragments. Ceramics include sand-, shell-, grit-, and grit and shell-tempered vessels. Some of the sherds have trailed lines and punctates, although a large majority of vessels were undecorated. The ceramics are similar to Oneota pottery from the Blood Run site, 39LN2.

### **Environmental Setting**

Bottomlands and low terraces of the James River

### **Temporal Boundaries**

Unknown, but apparently post-dates 1250 CE

### **Spatial Boundaries**

Lower James River bottomlands

### **Property Types**

Large, but diffuse artifact scatters

### **Locational Characteristics**

Lower reaches of the James River.

### **Context Definition**

Olivet phase sites are recognized by the presence of shell-tempered pottery.

## **Condition**

Most sites are intact.

## **Voids in Research**

The age of the Olivet phase is unknown. Village arrangement, if any, presence or absence of fortifications, and house types are not yet defined for this phase.

## **Research Topics**

1. What is the relationship between the James River sites and the Blood Run site (39LN2)? Does the Olivet phase represent peoples somehow linked to Blood Run?
2. What is the age of the Olivet phase?
3. Is the Olivet phase linked to historic groups, such as the Omaha or Ponca?
4. What was the role of trade in the development of the Olivet phase?

## **Research and Management Goals**

This phase is known primarily from surface collections. A more complete picture of the age, cultural affiliation, settlement and subsistence patterns, and interactions with other groups will require controlled excavation of Olivet phase sites.

## **National Register Listings**

None

## **Archaeological Region**

Lower James

## **Sites**

39DV23, 39HS34, 39HS39, 39HS40, 39HS41, 39HS42, 39HS45, 39HT57, 39HT60, 39HT63, 39HT68, 39HT73

## **Bibliography**

R. Alex 1981a, 1981b

## Protohistoric Period

### Overview

In northern Great Plains archaeology, the term *Protohistoric* refers to the period after which European goods and species had entered the material culture assemblage but before permanent non-native settlement began. In South Dakota, the Protohistoric period roughly corresponds to the century and a half from 1700 to 1861 (Sundstrom 1989). Although archaeologists have excavated some sites dating to this period, most of our information comes from the written accounts of the first non-native trappers, traders, explorers, missionaries, and military personnel venturing into what is now South Dakota. Native Americans also left documentation in the form of narratives and pictographic records such as winter-counts.

Several historically known ethnic groups inhabited South Dakota before the introduction of the horse in the early eighteenth century (Reher and Frison 1980; Schlesier 1994; Greiser 1994; Sundstrom 1989). These include the Mandan, Hidatsa, Arikara, Ponca, Omaha, Kiowa, Kiowa-Apache (Naishan Dene), Comanche or Plains Apache, Cheyenne, Arapaho, Dakota, Nakota, Assiniboin, and Lakota.

### The Middle Missouri River

The central reach of the Missouri River runs north to south, dividing South Dakota into eastern and western halves. Just as “East River” and “West River” have long been distinct geographically, ethnically, and economically, the area along the river itself has enjoyed a unique history and cultural identity for at least the last 1000 years. The river itself provides abundant resources: fish, waterfowl, big game, and aquatic plants. It was an important transportation link extending to the Gulf of Mexico and throughout the Great Plains. But perhaps most significantly, the silty, fertile lower terrace and floodplain permitted farming with simple tools. Maize horticulture permitted establishment of semi-permanent villages throughout the region. The Middle Missouri became one of the most densely populated areas of pre-contact North America, a major trade center, and a center of cultural innovation. By 1000 CE, earth lodge villages appeared in the Middle Missouri area. The Plains Village archaeological culture emerged in historic times as the Mandan, Hidatsa, and Arikara nations. Other groups that followed the Plains Village pattern for a time in what is now South Dakota include the Cheyenne, Ponca, and Omaha.

When the first non-native fur-traders, explorers, and missionaries entered the Middle Missouri region, they encountered large, thriving villages on the high bluffs lining both sides of the river. Large dome-shaped circular and semi-rectangular earth-covered lodges housed large extended families composed of women related by blood and their husbands and children. The women managed large garden plots on the lower terraces, while the men took charge of bison hunting, catfish trapping, and defending the village from enemies. These early chroniclers observed abandoned villages, as well.

*Mandan.* The Mandan are a Siouan-speaking people. One of their origin stories places their emergence as a people at the Heart River in present-day North Dakota. This was the location of

their villages when non-natives first encountered the Middle Missouri Indian nations. Another origin story relates a migration up the Mississippi and Missouri Rivers from an origin point near the Atlantic Ocean. The people split into three groups: one settling near the pipestone quarries in southwestern Minnesota, one setting north of the Turtle Mountains in North Dakota, and one settling on the Missouri River opposite the mouth of the White River in South Dakota. According to this account, the groups reunited on the Missouri in what is now South Dakota.

Historical accounts paint a somewhat different picture, but one that is largely compatible with the second of these origin stories. Most researchers place the Mandan in several villages near the Heart River (North Dakota) around 1700 CE. Around 1780, they abandoned the Heart River villages and moved south to the Painted Woods (Chomko 1986:94). At the end of the eighteenth century they were living in two or three villages near the mouth of Knife River. In 1879, the Mandans were living in three villages near Knife River, one of which they shared with the Hidatsa. By 1804, the Mandan were in two villages, one on each side of the Missouri south of the Knife. They generally maintained two villages in this vicinity until the big smallpox epidemic of 1837, but the locations of the villages shifted every few years (Chomko 1986:94). The massive loss of life from smallpox in 1837 led the remaining Hidatsa and Mandan to join in a single village on the Knife River. Around 1843, the Mandan established another village near Fort Clark. Two years later, part of the Mandan rejoined the Hidatsa at Fort Berthold (Like a Fishhook Village), while others remained near Ft. Clark. By 1860, all the Mandan were at Fort Berthold with the Hidatsa.

*Hidatsa.* The Hidatsa nation of historic times comprised three divisions: the Hidatsa proper, the Awatixa, and the Awaxawi (Bowers 1965). Like the Mandan, they speak a Siouan language far removed from that of the Dakota/Nakota/Lakota people who would later occupy South Dakota. According to early non-native accounts, the Hidatsa maintained separate villages near the mouth of the Knife River from 1785-1795 (Hanson 1983; Wood 1980). An Awaxawi village north of the Heart River was used around 1780 (Stewart 1974), but by 1804, the groups were all living near the Knife. In 1834, the smaller villages combined at Big Hidatsa village for protection from Dakota and Lakota forces attempting to take over the Hidatsa hunting grounds on the North Dakota-South Dakota border west of the Missouri. Following the 1837 smallpox epidemic, the Hidatsa moved to the upper Knife River, returning to the Missouri at Big Hidatsa village in 1838. In 1845, they moved to Fort Berthold, where the Mandan and Arikara later joined them (Chomko 1986; Hanson 1993).

Each of the three Hidatsa divisions has a separate origin story. The Hidatsa proper trace their origin to an Awaxawi community in western Minnesota. From there, they moved first north and back south to Devils Lake. Soon they encountered the Mandan living on the Missouri River, and moved to the area north of Knife River and the Mandan villages. Various small splinter groups from the Hidatsa proper migrated westward, emerging as the historic River Crow on the central Yellowstone River. The Hidatsa proper later shifted their territory south to the mouth of Knife River. Like the Mandan, the Awaxawi first appeared as a people far to the southeast. They followed the Mississippi River to Minnesota, settling near Devils Lake. Later they shifted westward to the Missouri River, settling at Painted Woods near the Mandan and Awatixa villages. The Awatixa origin story places their first and only emergence on the Missouri River between the Heart and Knife rivers (Bowers 1948:17-18). They claimed to be descended from a cultural hero, Charred Body, who fell from the sky in the form of a flaming arrow.

*Arikara.* The Arikara nation of central South Dakota traces its roots to the Pawnee and other Caddoan-speaking groups of the central Great Plains and, ultimately, the Southeast. Various Arikara splinter groups entered what is now South Dakota from 1300-1450 CE. They occupied much of the Missouri River from the Grand to the Cheyenne rivers over the next several centuries. This movement is variously attributed to climate change and conflict within the Pawnee nation (Zimmerman and Bradley 1993:225); however, it is unlikely that the migrations had a single cause. By 1780, the Arikara comprised ten distinct groups occupying as many as 45 villages among them. By 1790, Arikaras had several villages near the mouth of Bad River. Soon after, some of them moved north to the Painted Woods area between the Knife and Heart rivers (North Dakota). During the first decade of the 1800s, they were centered near the Grand and Moreau rivers, maintaining villages on the mainland and on islands. (The Grand is also known as the Ree or Arikara River in reference to their villages at its mouth.) For the following two decades, they alternated between the Grand River and Painted Woods, taking over an abandoned Mandan village at Fort Clark in 1838. In 1861, they moved upriver again, setting up a village opposite Fort Berthold (Chomko 1986). In 1862, they joined the Mandan and Hidatsa at their combined village, Like a Fishhook, at Fort Berthold.

*Omaha and Ponca.* These Siouan-speaking nations were once a single entity with origins in the lower Mississippi or Southeast. Their oral traditions state that the Omaha moved upriver to the Ohio Valley (Dorsey 1884), moving westward from there to southwestern Minnesota. The Big Sioux River was known as the Rive des Maha, or Omaha River in 1700, referring to Omaha villages there (Dorsey 1884, 1886; Fletcher and LaFlesche 1911:73-74). The ruins of one of these villages is the Blood Run site, 39LN2/13LO2. The Omaha village at Blood Run was an important trading center for both Indian and French items. By 1714, however, Yankton or Brule Lakota forces had ejected the Omaha from this area (Dorsey 1884, 1886). This event may be recorded in the Yanktonai winter count for the year 1710, “when they chewed the *Wicošawan* people to pieces” (Howard 1976). The identity of this Yanktonai enemy is not known; a plausible translation of the term is Arrow People. The combined Omaha-Ponca nation resettled on the Missouri River near the mouth of White River just south of the main area of Arikara settlements. According to oral histories, the Omaha soon moved downriver to their present location in northeastern Nebraska. Sometime during the early 1700s, one of the Omaha clans, the Ponca, split off to become an independent entity. The Ponca moved as far west as the southern Black Hills, but then moved back to the Missouri to rejoin the Omaha for a short time. Sometime around 1750, the Ponca again split off to settle along the Niobrara River in Nebraska; the two nations remained separate from that time on (Fletcher and La Flesche 1911:38-39; Howard 1965:14-16). About 1720, the Omaha established an earth lodge village at the mouth of Bow Creek in northeastern Nebraska. Another schism took place at this village; however, it continued to be used intermittently through the 1780s or 1790s (Fletcher and La Flesche 1911:85-86).

In archaeological terms, the Oneota complex is generally thought to represent Dhegihan and Chiwere Siouan groups. In South Dakota, these groups emerge in historic times as the Omaha, Ponca, and Iowa. No Omaha sites have been identified in South Dakota, apart from Blood Run; however, early investigators suggested 39LM96 as a possible Omaha village. Oneota sites in the Lower James, Yankton, Lower Big Sioux, Upper Big Sioux, and Northeast Lowlandss regions are likely candidates for Omaha-Ponca sites in South Dakota. Along the Missouri River, 39YK39 and 39ST65 are Oneota sites of probable proto-Omaha affiliation. The latter site number designates an incised catlinite plaque with an Oneota design on it, rather than an actual archaeological site. Since

the original location of this item is in doubt, it should not be taken to indicate a specific Omaha settlement in the Bad-Cheyenne region. Following their split with the Omaha, the Ponca are recognized archaeologically as the Red Bird Focus (Wood 1965). The Red Bird Focus was defined on the basis of four earth lodge villages in north central Nebraska near the confluence of Ponca Creek and the Niobrara River and 11 campsites on the Niobrara and Elkhorn Rivers in Nebraska. The Ponca Fort site in Nebraska, 25KX1, is a historic Ponca village at the confluence of Ponca Creek and the Niobrara. South of the Black Hills, 39FA45 and 39FA48 are possible, but debatable, Ponca seasonal camps (Wood 1965). A set of rock art sites in the southern Black Hills employs Oneota motifs and may indicate seasonal Ponca visits to that zone, as the Ponca are the only Oneota-derived group known to have traveled that far west (Sundstrom 2004a).

*Yankton and Yanktonai.* The Yankton and Yanktonai make up two of the original seven nations or “council fires” of the Dakota/Nakota/Lakota alliance. Four others combine to form the Dakota or Santee division. The remaining division is the Teton or Lakota. The Yankton, meaning “those who dwell at the end of the village,” and Yanktonai, the “little group dwelling at the end of the village,” were first identified historically in southern Minnesota and the adjoining parts of Wisconsin, Iowa, and the Dakotas. Despite the name, the Yanktonai were the larger group historically and were considered the parent group (Howard 1976:5). By the early eighteenth century, the Yankton and Yanktonai had shifted westward to what is now eastern South Dakota.

The Yankton and Yanktonai first emerge in the archaeological record as part of an undifferentiated proto-Sioux (Dakota, Nakota and /Lakota) culture. The Clam River, Kathio, and Blackduck archaeological complexes are hypothesized to represent a proto-Sioux presence in central Minnesota by 800 CE (Gibbon 2003). These eastern Woodland cultures developed into a Terminal Woodland complex called Psinomani by about 1300 CE. This is in line with oral traditions tracing the eastern Sioux to a homeland in east-central Minnesota and northwestern Wisconsin. From scattered, small family groups, the proto-Sioux developed a tribal society with clusters of semi-permanent villages. These probably were based on hunting and wild rice gathering. Many of the villages were protected by fortifications, suggesting the presence of raiding enemy groups. From 1150-1350 CE, the proto-Sioux groups were heavily influenced by people known archaeologically as Oneota. The central Minnesota Oneota emerge in historic times as the Iowa and Oto. Around the same time, other groups including Algonkian-speakers from the eastern Woodlands were migrating into central Minnesota. The degree to which these various groups were trading partners as opposed to enemies is not clear. Around 1300 CE, the Assiniboine broke off from the proto-Sioux and migrated northwestward to the area of eastern Montana. Their language is closest to the Nakota dialect; thus, they appear to derive from the Yankton-Yanktonai division (Gibbon 2003).

Most researchers place the Yankton and Lakota west of the Dakota at the time these groups first appear in historic documents, but their exact location was not recorded. The most accepted scenarios place them either in the woodlands at the head of the Mississippi River or in the prairies of southwestern Minnesota and eastern South Dakota (Gibbon 2003:18). The Yankton-Yanktonai and Lakota began a gradual move westward in the late-seventeenth and early-eighteenth centuries. The Yankton moved into southeastern South Dakota and adjacent Iowa and Minnesota. There they allied with the Ponca. The Yanktonai lived north of the Yankton on the headwaters of the James, Big Sioux, and Red rivers (Howard 1976). The Yanktonai winter count belonging to John K. Bear indicates a very large territory at this time, extending throughout much of the eastern Dakotas and

into the Pipestone area of Minnesota (Howard 1976). Their hunting grounds extended across the Missouri into western North Dakota. The Yankton-Yanktonai relied on a mix of hunting, fishing, foraging, and gardening. Like the Mandan and Hidatsa, they conducted one or two large bison hunts each year. They also participated in trade between the prairie-based Lakota and their eastern Dakota relatives, hosting a great trade rendezvous every summer on the James River (Howard 1976). This trade focused on horses, tipis, buffalo robes, and leather clothing from the west and guns, kettles, red pipestone items, and wooden bowls from the east (Tabeau 1939:121-123). Both groups borrowed practices from peoples already living along the Missouri and James rivers, including earth lodges, farming, and ceremonies (Howard 1966). In the mid-1800s, the Yankton-Yanktonai had several earth lodge villages in eastern South Dakota, including Armadale Island, Fort Yates, Dirt Lodge, and Fort Thompson. Historic accounts and winter counts indicate that the Yanktonai were most closely linked to the Santee Dakota, while the Yankton tended to ally with the Lakota. Today, the Yanktonai are located on the Standing Rock Reservation, especially on the North Dakota side, the Fort Totten Reservation in North Dakota, and the Crow Creek Reservation in South Dakota. The Yankton have a reservation in southeastern South Dakota.

*Santee Dakota.* The eastern or Dakota division of the Dakota/Nakota/Lakota alliance was known collectively as the Santee Dakota, from *Isanti*, or Knife Owners. The Santee division includes four distinct groups: the Mdewakanton or Bedwakanton, the Wahpekute, the Sisseton, and the Wahpeton, names referring to their village locations (those dwelling at Spirit Lake, “shooters” among the leaves, those dwelling at the fishery, and those dwelling among the leaves). Their home territory is central and southern Minnesota and the eastern Dakotas. They speak the Dakota language. Historically, the Santee economy was based on gathering wild rice and prairie turnip, fishing, and hunting moose and deer. They also raised large gardens of maize, squash, beans, and pumpkins. They were organized into clans and villages, dispersing into smaller family groups in winter (Howard 1966). Under the 1851 treaties of Traverse des Sioux and Mendota, two reservations were established for the Santee, both in Minnesota. Under these treaties, they lost all lands in South Dakota. The conflict variously termed the Minnesota Uprising, the Dakota Conflict, and Little Crow’s War, was fueled by Santee frustration over loss of lands, failure of the US government to meet treaty obligations, food shortages, and pressure to relinquish even more land for white settlement. In 1862, violence erupted. Santee warriors attacked white towns and farmsteads, killing about 500 people over six weeks. US troops from Fort Snelling and Fort Ridgely brought the Dakota to surrender. Meantime several thousand Dakota noncombatants had fled to the Lakota and Yanktonai camps for safety. Besides those who arrived in South Dakota as refugees from the conflict, US troops detained many others at Fort Thompson as prisoners of war. After a series of punitive expeditions and the mass execution of 38 Dakota men in 1863, the US government negated all Dakota treaty rights (Gibbon 2003:111). Few Santee returned to Minnesota.

Today the Santee are widely dispersed. The Sisseton have a reservation in northeastern South Dakota. The Mdewakanton are concentrated on the Flandreau Reservation in eastern South Dakota and the Santee Reservation in northeastern Nebraska. Other Santee reservations are located in North Dakota, Minnesota, Manitoba, and Saskatchewan.

*Cheyenne.* The oral traditions of the Tsitsistas division of the Cheyenne nation relate a migration from a northern country southward to what is now Minnesota. From there, the group lived for a time on the Sheyenne River in eastern North Dakota and interspersed with the Mandan

on the Missouri River. They seem to have followed the Missouri south to the mouth of the Cheyenne River. They then migrated along the Cheyenne, establishing gardens on Cherry Creek and along the southern fork of the Cheyenne.

### **Western South Dakota**

A pattern of rapid population displacement took place in western South Dakota. By 1700 Crow, Kiowa-Apache, Kiowa, Comanche, Suhtai Cheyenne, and possibly Arapaho and Ponca groups had been living in or near the Black Hills (Bamforth 1988; Hodge 1907; Mooney 1898; Schlesier 1994:xxv; Wood 1965). The Kiowa and their Kiowa-Apache allies probably were the first of these groups present in the Black Hills. While no indisputable evidence of pre-1700 occupation of the Black Hills by these groups has yet come to light (Reher 1977), many researchers believe that the southern Avonlea or Beehive complex, dating around 600-900 CE represents the ancestors of the Kiowa-Apache and/or Kiowa (Greiser 1994; Schlesier 1994), as may some Dismal River Aspect sites (Gunnerson 1978). Schlesier hypothesizes that the Kiowa and Kiowa-Apache shifted their territory eastward to the Black Hills sometime after 1300 CE and remained there until about 1800 CE. Kiowa oral tradition states that they and the Kiowa-Apache were allied with the Crow and living in the Black Hills country by about 1700. Though speaking distinct languages, the Kiowa and the Kiowa-Apache were one politically, socially, and culturally (Boyd 1983:41; Mayhall 1971:12). During the early 1700s, the Crow (Absoroka) and their Kiowa and Kiowa-Apache allies controlled the Black Hills (Bamforth 1988:87; Hodge 1907; Mooney 1898). At this time, the Comanche were living south of the Kiowa between the headwaters of the Platte and Kansas Rivers. It is not known whether the Comanche ever lived in the Black Hills proper; however, some archaeological sites in the South Fork Cheyenne region are linked to the Plains Apache, perhaps the ancestors of the historic Comanche.

Later, these groups drifted south and west under pressure from groups of Arapaho, Cheyenne, and Lakota moving in from the east and north. Some researchers believe the Arapaho moved from a homeland in northern Minnesota onto the plains at about the same time the Cheyenne also migrated east into the Dakotas (Clark 1885:39; Trenholm 1970). Others believe the Arapaho originated in the Canadian Shield and preceded the Cheyenne onto the plains, perhaps by centuries (Trenholm 1970:11; Schlesier 1994; Marriott and Rachlin 1975:25). The Arapaho may have been in western South Dakota by 1550 CE (Schlesier 1994:323). They would remain there until pushed south by the arrival of the Lakota late in the eighteenth century. Little is known of the Arapaho occupation of South Dakota (Gussow 1974). Bamforth (1988) places them in western North Dakota in 1700, just north of the Black Hills in 1775, and well south (in southern Nebraska and northern Colorado) in 1850. Trenholm (1970:19) states that some Arapaho may have gone south as far as the Black Hills as early as 1760 to aid the Kiowa in their war with the Snake. (The term *Snake* was used for various tribes; however, in this area, it generally refers to the Eastern Shoshone.)

In the 1790s, the Arapaho were located on the south branch of the Cheyenne River and were hunting as far south as the Platte River (Gussow 1974:71-72; Fowler 1982:15). They may have participated in trade with the Missouri villages at this time in cooperation with the Cheyenne (Gussow 1974:72). During this period, the Arapaho were living near, but not with, the Cheyenne. It appears that the Arapaho sometimes camped with the Cheyenne and sometimes camped separately (Clark 1885:39). Soon thereafter, the Arapaho began to shift their territory southward.

Less than a generation later, the Arapaho had left western South Dakota, driven south and west by the Lakota expansion (Fowler 1982:16). It may be that most of the Arapaho were already living on the Platte at this time, and that only a small band was still occupying the headwaters of the Cheyenne River (Gussow 1974:74). By 1816, both the Cheyenne and Arapaho were on the headwaters of the Platte, Arkansas, and Red rivers, well south and west of the Black Hills (Gussow 1974:75). Some Arapaho bands affiliated with Cheyenne and Lakota bands remained in the Black Hills country (Fowler 1982).

Arapaho oral tradition states that they first encountered the Cheyenne in the Black Hills. At first they were enemies, but soon became allied. This alliance was mutually beneficial. The Cheyenne needed help in their wars with the Crow and Lakota, and the Arapaho needed the Cheyenne to mediate their trade on the Missouri River (Trenholm 1970:33; Fowler 1982:15).

The Suhtai Cheyenne moved from eastern South Dakota to the Black Hills region about 1670. The Tsitsistas branch of the Cheyenne joined them about 1730, eventually to form a single cultural unit (Schlesier 1994). During the mid-1700s, the Cheyenne and their Arapaho allies controlled the Black Hills country, having abandoned their semi-sedentary lifeway as horticulturists on the Missouri and other rivers east of the Black Hills. For a long time the Cheyenne nation had groups both on the Missouri and on the Northwestern Plains (Wood 1971b; Grinnell 1923), but eventually all groups moved west to the plains. The Cheyenne planted crops along Cherry Creek and the streams at the edge of the Black Hills (Grinnell 1923:253), but increasingly turned to bison hunting for their subsistence. Having by this time acquired horses, they quickly adopted a fully nomadic pattern, based on bison hunting and ritualized warfare. French traders met Cheyenne bands in the Black Hills country (Grinnell 1923:23). The Cheyenne and other groups, including the Arikara, apparently had a trade rendezvous at the eastern edge of the Black Hills around the turn of the nineteenth century (Tabeau cited in Mayhall 1971:36.)

In 1805, Lewis and Clark compiled a map including western South Dakota, based on information supplied by Native Americans and French and Spanish traders (Grinnell 1923:30-31). This map places Cheyenne, Comanche, Kiowa, and Kiowa-Apache groups at the head of the Belle Fourche River. The Suhtai Cheyenne were at the head of the Cheyenne and White rivers. The Arapaho were at the head of the North Platte, and another group of Kiowa was located just south of them. Few Lakota had entered the area at that time. The map places the Brule Lakota on the Missouri near the mouth of the White and the Oglala Lakota near the mouth of the Cheyenne River.

The Cheyenne hold over the Black Hills country was short-lived. According to their own winter-counts and Cheyenne oral histories, the Lakota first entered the area about 1775 (Grinnell 1923:32; Powers 1986:50). Within a decade, they had driven out the remaining Kiowa, restricted the Crow to areas west of the Black Hills, and conquered and then befriended the Cheyenne and Arapaho. The remarkable success of the Lakota in taking the area can be attributed to their knowledge of and access to firearms, their ability to adapt quickly to different environments, population increases, and a steady influx of new Lakota bands venturing westward across the Missouri. A series of smallpox outbreaks and relentless Lakota attacks had by 1780 forced the once formidable Arikara to loosen their hold over the middle Missouri. Lakota bands freely crossed the Missouri into the Arikara summer hunting ranges (Hyde 1937). The same epidemic seriously weakened the Kiowa, again allowing the Lakota to push them aside (Mayhall 1971).

Archaeological remains in the Badlands show that groups associated with the Middle Missouri and Central Plains Tradition, specifically the various groups identified historically as the Mandan, Arikara, and Skiri Pawnee, used this country. Ponca groups centered near the mouth of the White and Niobrara may have extended their territory west as far as the Badlands. One Badlands site is hypothesized to represent a Ponca presence in the area (Wood 1965). By about 1750 CE, the Lakota alliance had entered the area and began to control access to it.

Until the Lakota took over the Black Hills country, Mandan, Arikara, and other Siouan-speaking groups from the Missouri River villages traveled to the Black Hills in summer to trade, hunt, and gather resources such as quartzite (Alex 1981b; Johnson 1993). This pattern had been followed for nearly a millennium and perhaps extended back to the Besant complex of the Late Archaic period. The increasing military might of the Lakota and other nomadic groups restricted the Missouri villagers to their home territory both for defense and to maintain some control over the fur trade (Hyde 1937). Meanwhile, the defeat of the French in Canada and improved transportation along the Missouri had opened the fur trade to new areas. By the winter of 1829 a fur-trading post, the Ogallala Post, was operating east of the Black Hills at the confluence of Rapid Creek and the Cheyenne River, probably to exploit the abundant beaver populations of the Black Hills. This post burned in 1832 and was not rebuilt (Hyde 1937).

*Mandan.* Oral traditions suggest that prehistoric Mandan made extensive use of the Black Hills as a resource base and that they attempted horticulture but eventually gave up on it due to the short growing season (Bowers 1950:162-63; Schlesier 1994:343, 1987). The archaeological cognates of this Mandan occupation of western South Dakota may include Initial Middle Missouri materials from the Phelps, Smiley-Evans, Arrowhead Hill, Ludlow Cave, and Huston-Fox sites (Alex 1981b; Alex 1979a; Kurtz and Keller 1986; Sundstrom 1996), as well as scattered finds of Middle Missouri-like ceramics and exotic shell artifacts; however, not all archaeologists agree that year-round settlement is implied by these materials (Johnson 1993; Lippincott 1996). Initial Middle Missouri pottery has also been found west of the Black Hills in association with a stone-lined hearth and a scatter of bone, lithic debitage, and stone tools (Fosha 1997). This material is clearly prehistoric, dating between 950 and 1300 CE, and thus lies outside the scope of this discussion. These and other finds reminiscent of Initial Middle Missouri materials do, however, present important culture-history research questions (Alex 1981b; Sundstrom 1989; Schlesier 1987, 1994). Initial Middle Missouri ceramics have also been found at several sites in the White River Badlands (cf. Johnson 1993). These suggest seasonal use of the Badlands by village-dwellers following the smaller rivers westward into the Badlands and Cheyenne Basin.

There is little evidence that Mandan groups routinely traveled or lived west of the Black Hills. Some hunting and war expeditions did extend at least as far as the headwaters of the Powder River, however. A place called Two Cedar Buttes Facing Each Other was the destination of a Mandan or Hidatsa war party in the mid-1800s (Beckwith 1938:303). This probably refers to Cedar Ridge and Cedar Gap in Natrona County, Wyoming.

*Crow.* The Crow or Absoroka are a branch of the Siouan-speaking Hidatsa. Their settlement in the Yellowstone and Powder River country was the result of a long series of migrations of Hidatsa bands from the Middle Missouri area. The timing of the initial Hidatsa schism and western migration is not known with any certainty; however, archaeological data suggest that the Crow were in the territory west of the Black Hills by 1400 CE (Reher and Frison 1980:32; Wood and

Downer 1977). Western South Dakota probably was not central to Crow territory at any time. Instead, they appear to have migrated up the Yellowstone River and from there to have spread to the Bighorn Mountains and Powder River Basin (Reher and Frison 1980:32; Wood and Downer 1977). The Crow probably used the western Black Hills foothills at least seasonally after they moved into the Powder River country.

*Kiowa and Kiowa Apache (Plains Apache).* Kiowa historical traditions place their origin in or beyond (northwest of) the Rocky Mountains at the sources of the Yellowstone and Missouri rivers near the Flathead people (Mooney 1898:153). The Kiowa language is in the Kiowa-Tanoan family and remotely related to the Tiwa, Tewa, and Towa languages spoken in the Southwest. From their northwestern location, one band moved south of the Yellowstone to Crow country. They formed an alliance with the Crow and took up residence to the east of them in the eastern Powder River Basin and western Black Hills. According to Mooney's informants, "for a while they continued to visit the mountains, but finally drifted out into the plains, where they first procured horses and became acquainted with the Arapaho and Cheyenne, and later with the Dakota" (Mooney 1898:153). Mooney estimated the beginning of the Kiowa-Crow alliance to have taken place about 1700. At the time of their residence in the Powder River Basin and the Black Hills, the Kiowa were already allied with a band of Athabascans referred to in the literature as the Kiowa-Apache or Naishan Dene (Boyd 1983:41). Linguistic data indicate that the Kiowa-Apache split from other Athabascans at an early date (Hoijer 1971). Whether this separation took place in the north or in the southwest is a matter of debate. Current evidence suggests the Kiowa-Apache were always a northern group (Gunnerson and Gunnerson 1971:19). The Kiowa and Kiowa-Apache remained in the Black Hills country until driven out by the invading Cheyenne and Lakota near the end of the eighteenth century. From there, the Kiowa and the Kiowa-Apache moved south to the Wichita Mountains. Neither group is reported to have lived east of the Black Hills.

During their time in the Black Hills region, the Kiowa appear to have established their core territory southwest of the Black Hills proper along the North Platte between the present settlements of Cheyenne, Wyoming, and Ft. Robinson, Nebraska; however, both northern Cheyenne and Lakota historical traditions confirm that the Black Hills proper were the domain of the Kiowa (Mooney 1898:155-57). The Cheyenne and later the Lakota drove the Kiowa to the south prior to 1805. It appears that the Kiowa had contact with Comanche, Apache, Navajo, and Ute groups, as well as the Crow, and with the Spanish settlements of the Southwest throughout the first half of the eighteenth century. By this time, the Kiowa had acquired horses from their southern allies and by raiding the Spanish settlements. They had also established friendly trade relations with the Arikara and Mandan, based on supplying Spanish horses and goods to the latter (Hyde 1937:17). The Howling Wolf ledger book records that the Cheyenne first acquired horses by trading with Kiowa on the Arkansas River about 1730 (Peterson 1968:38-40). It is likely that this event took place at the Missouri villages of the Cheyenne, rather than on the Arkansas. The Cheyenne were horticulturists dwelling in earth lodge villages in the vicinity of the Arikara and Mandan during this period. Apart from the probable error in location (which corresponds to later Cheyenne and Kiowa migrations), the Howling Wolf account is consistent with what is known from other sources of Kiowa and Cheyenne history of the period. Interestingly, the Kiowa saddle depicted in the ledger is the early type with a very high pommel and cantle used in pre-gun days (Secoy 1953).

Access to horses was undoubtedly an advantage for the Kiowa in both trade and warfare. As long as the Arikara and Mandan were dependent on the Kiowa for their supply of horses, the Kiowa

could demand a high rate of exchange at the Missouri villages. The Kiowa seem to have had no trouble defending their Black Hills homeland until the Cheyenne and Lakota themselves acquired a sufficient supply of horses to form effective military forces. The war for the Black Hills was protracted and bloody. About 1770, an overwhelming force of Lakota slaughtered an entire band of Kiowa, according to Kiowa accounts (Boyd 1987; Mayhall 1971; Mooney 1898: 157-58). Although the Cheyenne controlled the Black Hills by 1805, the Kiowa continued at war with them and the Lakota until 1840 (Mooney 1898:157). It appears that Kiowa possessed horses throughout their tenure in the Black Hills, having acquired them from their southwestern and Crow allies by 1682.

Little information is available about Kiowa subsistence and settlement systems, except that they traded extensively with the Arikara and, to a lesser extent, the Mandan and Hidatsa for corn, tobacco, and non-native items. It seems likely that the Kiowa could be classified as horse pastoralists and nomadic bison hunters during their time in the Black Hills region. Immediately after the Lakota expelled them from the Black Hills, the Kiowa were living between the North Platte and the Niobrara and following a nomadic, bison-hunting subsistence and settlement pattern, supplemented by horse pastoralism and trading. It is reasonable to assume that descriptions of the Kiowa during this period apply to their time in the Black Hills a generation earlier.

Meriwether Lewis reported that the Kiowa were living on the North Platte in 1805, while the Kiowa-Apache (Naishan Dene) were somewhat farther north near the headwaters of the Cheyenne River, just west of the Black Hills. Lewis gives their combined population as 1000. This is probably much too low, but may reflect heavy losses in the war with the Lakota. Lewis describes their life-way as follows:

They are a wandering nation, inhabit an open country, and raise a great number of horses, which they barter to the Ricaras [Arikaras], Mandans, etc., for articles of European manufactory. They are a well-disposed people, and might be readily induced to visit the trading establishments on the Missouri. From the animals their country produces, their trade would no doubt become valuable [to whites?]. These people again barter a considerable proportion of the articles they obtain from the Menetares [Hidatsas], Ahwahhaways [Hidatsas], Mandans, and Ricaras to the Dotames and Castapanas [probably Shoshonean bands] [Lewis quoted in Mooney 1898:166].

Except for the low population estimate, Lewis's description is consistent with that given by Zebulon Pike. Pike stated that the Kiowa in 1803 numbered about 1000 men and wandered throughout the country at the headwaters of the Platte and Arkansas rivers. According to Pike, the Kiowa owned immense herds of horses, were armed with bows, arrows, and lances, hunted buffalo, traded with the Mandan, and fought with the Lakota, Pawnee, and Ute (Mooney 1898:167). Pike's comment that the Kiowa lacked firearms is surprising, given their success as traders with the Missouri villagers. The Howling Wolf ledger clearly shows the Cheyenne giving guns to the Kiowa in exchange for the first horses the Cheyenne had possessed (Petersen 1968:39). Pike's comment probably reflects the extent to which hostilities with the Lakota had temporarily interrupted this trade. According the Hyde (1937:17), the Kiowa ceased trade with the Missouri villages in 1790. It would appear from Pike's comment that they had not found an alternative

source of firearms a decade later. Guns were not readily available from the Southwestern settlements, due to strict colonial control over sale of arms and munitions to Indians.

The Kiowa's long-standing attachment to the Black Hills country is evident in their mythology. Both Kiowa and Kiowa-Apache oral tradition recorded late in the nineteenth century includes accounts of origin of the Black Hills and Devil's Tower, called the Tree Rock by the Kiowas. They refer specifically to Medicine Lake (the Kiowa name for Bear Butte Lake) as the realm of the dead. Some of the tribal "medicines" (ceremonial bundles) came from this place under the waters of the lake (McAllister 1937; Nye 1962, Schlesier 1994).

South Dakota contains several sites of possible Kiowa or Kiowa-Apache affiliation. These include the Vore bison kill, 39FA45, and 39FA83. The two Fall River County sites contained small amounts of pottery identified as belonging to the Dismal River ceramic tradition associated with Kiowa-Apache or Comanche (Gunnerson 1960; Wheeler 1957). Both are located in the southern foothills of the Black Hills. Neither site was intensively investigated, and their functions are not known. The limited test excavations at 39FA45 yielded, besides the Dismal River pottery, flakes, a triangular projectile point, a Badlands knife, scrapers, a biface knife, a spokeshave, palette, shaft abrader, a pottery smoothing stone, and a brass cartridge case dating to 1873-1930. The cartridge apparently is too late to belong to the Kiowa or Kiowa-Apache use of the site, as these groups were living well to the south of the Black Hills by 1870. Nor is the availability of firearms consistent with the arrow manufacturing tools, which make up much of the tool assemblage at the site.

Although 39FA83 has been cited as a possible Kiowa or Kiowa-Apache site, the evidence is less than convincing. The site is a large hearth complex on the southern border of the Black Hills. It contained about 40 surface or shallow basin hearths, an antelope butchering feature, and a few artifacts, including broken sandstone metate fragments, a stone knife, chipping debris, a bone awl, a side-notched point, and two pottery sherds. The identification of the site as Kiowa or Kiowa-Apache was based on the presence of the two sherds (Gunnerson 1960); however, neither is particularly diagnostic. The general appearance of the site is similar to others scattered around the periphery of the Black Hills and dated to the Middle and Late Archaic periods (see Middle and Late Archaic sections). Dates from bone or charcoal collected from this site will be needed before the pottery can convincingly be associated with the hearth complex. A feature identified as a possible sweat-lodge also begs further research, especially if it turns out to be prehistoric. Farther south in the Nebraska Panhandle region, a series of sites assigned to the Dismal River complex may represent ancestral Kiowa-Apache groups (Gunnerson 1960). Dismal River ceramics also occur in the Pine Bluff area of southeastern Wyoming (Frison 1991:121). Possible links between the Avonlea Complex and ancestral Kiowa-Apache were discussed above.

The Dismal River aspect, dated about 1675-1725 CE in the Central Plains is identified as Plains Apache (Gunnerson 1968; Schlesier 1994). Dismal River ceramics found near the Black Hills are thought to represent Apachean groups, but not necessarily Kiowa-Apache (Schlesier 1994:335). Although Dismal River materials in the Black Hills cannot be conclusively linked to the Protohistoric Kiowa and Kiowa-Apache, they provide the closest archaeological cognate for those groups currently available. Besides the ceramics, which display Central Plains Tradition characteristics, Dismal River Aspect sites from Kansas and Nebraska contain distinctive traits. These include multi-room stone structures ("pueblos"), bell-shaped baking pits, irregular trash pits, four- and five-base post houses, ceramics traded from the Southwest, serrated bison metapodial

fleshers, red pipestone, grooved stone mauls, bone paint brushes, scored bison rib rasps, scapula digging tools, and bone awls and projectile points. Many of the sites represent small hunting camps, but others are villages of 12 or more houses (Gunnerson 1968).

Most of these items have not been reported from western South Dakota; however, sites with baking pits like those of the Dismal River complex have been found along the southern and western edges of the Black Hills (Gunnerson 1968; Hughes 1949; Wedel 1953). Baking or roasting pits at two of these sites, 39FA71 and 39FA30, contained human bones, uncharred and deliberately covered with metates, metate fragments, or rock slabs. Human bones were similarly interred in baking pits in proto-Apache sites in Kansas and New Mexico (Gunnerson 1968). Historically, Apachean groups buried their dead in the ground or in caves and were known for their fine metates (Clark 1885:33). A circular house structure, interpreted as a tipi, at 39FA392 in the southern Black Hills Hogback also contained a deep roasting or baking pit with fragmentary human remains (Tratebas 1979). An incomplete infant burial and a single adult bone were covered with sandstone slabs and clean soil at the bottom of a deep pit hearth. As at 39FA71, a bone awl and a few other tools were deliberately interred with the burials. The hearth at 39FA392 was subsequently re-used for cooking and/or heating the structure. Although the house structure was interpreted as a tipi ring (Tratebas 1979, 1983), it contained three features not typical of tipis: a dish-shaped foundation pit or living floor; the deep central pit hearth, excavated into sandstone bedrock; and large quantities of charred wood, including logs oriented roughly parallel to the edges of the circle of stones marking the outside edge of the structure. Hearth materials yielded a radiocarbon date of 1060 BP (920 CE). Similar stone circle features with lowered living floors and deep interior hearths were found at Glendo Reservoir southwest of the Black Hills (Mulloy 1965). These were interpreted as bush-covered conical lodges. They dated about 300 years earlier than 39FA392.

The Wardell buffalo kill in western Wyoming, dated at around 600 CE, also may represent an Athabascan (Apachean) group (Reher and Frison 1980:31). This is the earliest communal bison kill at which bows and arrows were used on the Northwestern Plains (Frison 1991:212). The site contained large numbers of side-notched, concave-based arrow points identified as Avonlea. Artifacts were made of local stone and obsidian from Yellowstone and the Teton area. The site's occupants appear to have been familiar with those areas of the Rockies. The associated camp and processing area contained stone-heating pits, stone-boiling pits, and cooking or roasting pits. The latter are inverted cone-shaped pits, which apparently were lined with a green hide or paunch. Meat was then placed in the pit along with heated stones and then covered over with dirt and/or flat slabs of stone, and sealed. One of these roasting pits at Wardell still contained bone and large fire-cracked stones. The camp and processing area also contained pottery. This does not match other Woodland era pottery and may be diagnostic of Athabascan use of the site (Frison 1991:121). This pottery, the distinctive roasting pits, and the corner-notched arrow points all may provide indices of Comanche, Kiowa-Apache, or other Athabascan groups. Avonlea pottery is not well studied; however, one researcher has ventured a conjectural illustration of an Avonlea vessel (Morgan 1979). This is a bag-shaped, net-impressed vessel with pointed base and wide, uncollared mouth. Whether this matches the pottery from the Wardell site is not known.

If these materials are indeed related, they suggest the presence of recognizable Apachean groups in the Black Hills well back into prehistoric times. The dates available for this unnamed Black Hills complex suggest that it may represent a local continuation of the Beehive Complex, in which Apachean traits such as circular log houses, baking pits, and hearth burials were emerging.

With the sparse data currently available, this is more speculation than theory; nevertheless, the similarities among these sites are intriguing. Further analysis of these materials would help in evaluating this possibility. A site at the southern edge of the Black Hills, 39FA30, contained ceramics of an unidentified type. Since we do not know what Kiowa or Kiowa-Apache pottery looks like, if such indeed existed, the possibility that the 39FA30 ceramics are of proto-Kiowa-Apache affiliation is well worth pursuing.

The remaining site with a possible Kiowa or Kiowa-Apache affiliation is the Vore buffalo jump, in the northern Red Valley. The site investigators proposed that large amounts of Hartville Uplift quartzite in the site indicated that it was used by groups centered immediately southwest of the Black Hills near the Hartville (Spanish Diggings) quarries. The period of use of the Vore jump (1550-1800 CE) largely overlaps with Athabascan tenure in and southeast of the Black Hills (Reher and Frison 1980). This cultural affiliation is tenuous at best. No pottery or other distinct cultural markers were found at the site. Another study has questioned the identification of the Hartville Uplift tool-stone and suggests that most of the stone at Vore came from the northwestern Black Hills instead (Church 1996). Other possible cultural affiliations for the lower levels of the Vore site include Crow, Shoshone, Comanche, and Hidatsa/Mandan. The upper levels are probably of Cheyenne origin, as will be discussed below.

From this information, one can speculate that Kiowa and Kiowa-Apache use of the Black Hills was restricted to the peripheral zones and other areas with good pasturage for horses and bison, including perhaps the large prairies or “balds” in the western Limestones and the Red Valley. It is reasonable to assume that the Kiowa sought shelter and water for their horse herds in the foothills and Red Valley, especially during the winter months; however, we have no historic accounts or archaeological data to verify this. This reflected their adaptation to the open plains of the Powder River country.

Some Kiowa and Kiowa-Apache sites might contain trade goods from the Southwest. The later of these sites may contain horse, mule, or oxen bones or gear. The Kiowa and Kiowa-Apache maintained close trade relations with the Southwest and Mexico. No such items have been reported from the Black Hills. A site on the North Platte in Wyoming contained horse bones and a few metal fragments; however, this was assigned a Shoshone cultural affiliation (McKee 1988). A metal blade found near the Tongue River northeast of the Big Horn Mountains may have been part of a seventeenth-century Spanish rapier (Larson 1978:8). No cultural affiliation was proposed for this find.

*Ponca.* A protohistoric (ca. 1650-1750 CE) archaeological complex termed the Redbird Focus is linked to the historic Ponca (Wood 1965). The Redbird Focus is centered in north-central Nebraska, but a few possibly related sites are found in the Black Hills vicinity (Wood 1965:122). Ceramics from a site near Sundance, Wyoming, closely resemble those from the Redbird Focus sites. Two sites in the southern Black Hills were also identified as possible Protohistoric Ponca sites, 39FA45 and 39FA48. Since the former has also been identified as proto-Apachean, also based on ceramic typology, it is clear that a reexamination of the ceramic assemblages is needed. A small cluster of rock art sites in Craven Canyon in the southern Hogback displays stylistic affinities to proto-Iowa Oneota art. Because the Ponca were a late offshoot of the Iowa, this rock art may also indicate limited Ponca occupation of the southern Black Hills (Sundstrom 1993a). Some pottery from the Badlands is similar to proto-Ponca types; however, this has not been fully

investigated (Wood 1965:122). In any case, it would be expected that Ponca groups would have traversed the Badlands and Cheyenne River on their way between the Niobrara River and the Black Hills. Ponca oral tradition recalls places in the Black Hills, Big Horn Mountains, and Rockies; however, these areas seem to have been visited only occasionally (Howard 1965). Apart from a brief stay in the Badlands and southern Black Hills, Ponca use of western South Dakota appears to have been extremely limited.

*Cheyenne.* The two groups occupying western South Dakota after the Kiowa--the Cheyenne and Lakota--were nomadic bison hunters. The Suhtai Cheyenne came first and appear to have been in the vicinity of Devil's Tower by 1670 (Schlesier 1994). By 1730, some of the Tsistsistas Cheyenne had also migrated to the Black Hills. It appears that the Tsistsistas migrated from earth lodge villages on the Missouri along the Cheyenne River toward the Black Hills. They incorporated the Suhtai (or vice-versa) to form a single nation around 1730 (Schlesier 1994). The Lakota first entered the Black Hills country around 1775. Like the Kiowa, these groups developed a pastoralist mode of life, but it focused on bison, rather than horses, and they never established themselves as important horse-traders as the Kiowa had done. The Lakota's warlike relations with the Mandan, Hidatsa, and Arikara dated back to the time when the former were impoverished scattered bands and the latter were a formidable fighting force defending their prosperous villages along the Missouri. Although temporary truces allowed the Lakota and their Cheyenne allies to trade with the river villages during some seasons, the truces were always shaky and short-lived. This prevented the kind of powerful and stable trading relationship the Kiowa had enjoyed with the river villages. The Lakota were as likely to get the items they desired by burning and plundering the river villages as by trade (Hyde 1937).

This author attributes the upper levels of the Vore site (48CK302) to the Cheyenne living in the vicinity of the Black Hills around 1800. Although the original investigators did not propose a specific cultural affiliation for the upper levels of the site, two ethnographic sources suggest Cheyenne use of the buffalo jump. Northern Cheyenne men who were born around 1850 told John Stands in Timber of a buffalo-trapping pit located near the present highway between Sundance, Wyoming, and Lead, South Dakota (Stands in Timber and Liberty 1967:86). This probably refers to the Vore site. Another probable reference to the Vore site takes the form of a Cheyenne "medicine blanket." This is a hide in the collections of the National Museum of the American Indian decorated with paintings and shells to form a visual representation of Cheyenne territory. One of the features shown on the blanket is a large sinkhole in the northern Black Hills used as a bison trap. This tribal memory of what is very likely the Vore site strongly suggests a Cheyenne affiliation for those levels corresponding to Cheyenne occupancy of the Black Hills area.

Cheyenne sites may be recognizable based on ceramics (cf. Wood 1971); however, no Cheyenne pottery has yet been reported from western South Dakota. Given the relatively recent occupation of the area by Cheyenne groups, oral traditions may be the archaeologists' best guide to the location of Cheyenne sites (Grinnell 1923).

*Arapaho.* So far no one has linked the historic Arapaho with either an archaeological complex or specific sites (Gregg 1994; Gussow 1974; Wood 1985). Since the Arapaho were virtually identical to the Cheyenne in material culture, it is unlikely that their sites can be distinguished from those of the Cheyenne. One exception to this is burials. The Arapaho buried their dead in the ground without grave goods except clothing and a pipe (Clark 1885:40).

*Lakota.* According to Cheyenne historical tradition, the Lakota first arrived in the Black Hills country on foot and in small groups (Hyde 1937:20). The newly formed Lakota alliance (the Lakota winter-counts place this event in 1761-62) gradually gathered strength as their population and horse wealth increased. Soon they were able to wage war on the Cheyenne and other tribes in the area. At first, the Lakota returned to the Minnesota country each year to obtain firearms and other supplies. In 1795, they were still attending the Sioux rendezvous at the head of the Minnesota River. Ten years later the rendezvous was moved to the James River to shorten the journey of the western bands. The Oglala were the first to establish themselves west of the Missouri, but were soon followed by Brule bands. By 1795 the Brule and Oglala had successfully driven the Crow and Kiowa west and north of the Black Hills and were waging a fierce war with the Cheyenne for the Black Hills country. By 1801 the western Lakota had established themselves in and around the Black Hills and were allied with the Cheyenne (Hyde 1937:31). Hyde describes the western Lakota settlement pattern as follows:

During this period, 1800-1825, the Oglalas had a regular beat, passing back and forth between the Black Hills and the mouth of the Bad River. At first they wintered on the Missouri, trading during that season with [Registre] Loisel at Cedar Island below Bad River or with some other French traders from St. Louis; but soon after 1805 they began to spend their winters in the eastern edge of the Black Hills, usually near Bear Butte. In the spring they would go down Bad River, hunting as they went along; and on reaching the Missouri they joined the Saones [northern Lakota bands] and Brules and took part in the pastime of stopping and robbing traders who were going up-river to the Arikaras and Mandans. At times, the annual Sun Dance was held on the Missouri, at other times out near the Black Hills; the summer's activities were then concluded by getting up a great war-party against the Crows or some other tribe. As cold weather set in, the Oglalas were back in their winter camps near Bear Butte, usually with camps of friendly Saones and Cheyennes for neighbors (Hyde 1937:33-34).

The Lakota and Cheyenne, having abandoned their territories along and east of the Missouri River, had quickly transformed into fully nomadic bison hunters. For a time at the beginning of the nineteenth century, they fought over possession of the Black Hills, but eventually they formed a lasting alliance against the Crow (Absoroka) whom they battled for possession of the Powder River Basin just west of the Black Hills and the Skiri Pawnee, from whom they eventually wrested the excellent bison hunting grounds of the North Platte. The story of the Crow and Pawnee wars is chronicled in the Lakota winter-counts and Bad Heart Bull's pictographic history of the Oglala division of the Lakota (Bad Heart Bull and Blish 1967). During their long period of alliance, some Lakota and Cheyenne bands camped together during the summer months. Much intermarriage took place between the northern Cheyenne and the southern divisions of the Lakota alliance. This allowed both groups access to the Black Hills country, while maintaining their separate identities, languages, and religious traditions. The Cheyenne today maintain their traditional ties to the Black Hills through religious ceremonies and encampments at Bear Butte, the location at which their culture hero, Sweet Medicine, received the tenets of Cheyenne culture. The Lakota also maintain spiritual ties to the Black Hills, which they regard as sacred in its entirety (Sundstrom 1997b).

It is clear from historic accounts that the Lakota used the Black Hills country for very specific purposes. It is reasonable to assume that the same or a very similar pattern was followed by the Cheyenne during their tenure in the area as well. During the summer months, groups living in the surrounding high plains used the Black Hills as a source of water and other resources. Lodge poles,

deer, bear, mountain sheep, and fish are specifically mentioned as resources sought by the Lakota entering the Black Hills on summer excursions (Vestal 1934:161; DeMallie 1984). Large quarry sites such as Battle Mountain, Flint Hill, and the area behind 39CU90 indicate that quartzite was an important resource in earlier protohistoric times. In addition, individuals would retire to the high ridges and mountains to pray and seek visions. During the winter months, small bands would find shelter and game in protected areas of the foothills and Red Valley. Use of the interior zones appears to have been quite restricted, with the possible exception of upland prairies such as Reynold's and Gillette prairies near Deerfield. Some ethnographic accounts suggest that the higher hills were considered the abode of spirits and were avoided except by those on religious quests.

It is clear from historic accounts that the Black Hills represented both a resource base and sacred ground to the Lakota and Cheyenne (Sundstrom 1997b). The Oglala holy man, Black Elk, related the following account of a trip to the Black Hills when he was ten years old. The activities he describes are probably typical of Lakota and Cheyenne use of the area. It illustrates the dual view of the Black Hills as both holy ground and resource-base.

In the moon when the ponies shed [May 1874] we broke camp again and we started for the Black Hills to cut tipi poles for the tipis. There were about thirty tipis in the band now. We went down the Horse Headcutting Creek [Horsehead Creek] and made camp midway. Then we made camp at the head of the Horse Headcutting Creek. As I looked up I heard the shrill whistle of an eagle and I wondered if this eagle was the one of my vision, which was guarding me. I thought also that the people around me might be the nation of my vision. Whenever I saw a cloud appearing it seemed that someone was coming to see me and that some day it would be a duty for me to do something for my nation.

We broke camp here and left the south fork of the Good [Cheyenne] River and made camp at the foot of the Black Hills at Buffalo Gap. We camped quite early in the afternoon here. My father was lame and my father and I went out into the timber on top of a big hill and we looked down toward the Cheyenne River and my father looked all around and said: "There are some deer coming. We'll catch them and in whatever direction they go you stay here and I'll round them up and you wait for me here."

I did not want my father to go, so I said before I knew it: "No father, you stay here, they are bringing them toward us and we'll get them here." When I realized what I had said, it made me feel queer for I thought this was also part of my vision. My father looked at me in a queer manner but he did not say anything. Then he said: "All right, son, you take the horses back a little ways out of the way." So father lay down in some high grass and watched. When they came closer we saw they were antelopes. I went back and held the horses so that they wouldn't run. I was quite a ways from my father and I heard two shots and knew that my father had gotten two antelopes. After the second shot my father gave me a signal to go up with the horses, so I went back with the horses again. My father was going down to the antelopes and found out that he had shot four antelopes with two shots. While father was butchering the game, I began to eat the kidneys and liver.

When I filled up I was rather sorry that we had killed these animals and we ought to do something in return--make an offering to the wild things of the earth. I suggested this to my father and said: "Father, why shouldn't we offer one of these things to the wild things?" Father stared at me and [he] had a queer feeling about it. We did this, however. We laid the antelope facing the east and my father made an offering prayer....

As we started down the hill, I could hear the whistle of an eagle above us and he was probably the one who had gotten part of the meat. After we returned with the meat this vision was all out of my mind again. We were in a hurry to get home with the meat.

(Before storms from there on I knew that the thunderstorms were coming. I could hear a thundering noise in the earth as I walked along that the Thunder-beings were coming, but I was always glad to see the storm come.) When we returned with the meat everyone rejoiced and all cheered and shared the meat with us.

My uncle, Iron Bull, a little boy of my age, came running up from the creek saying that we should go fishing. When boys fish they say: "I offer this to you who are down in the water with wings of red, so come hither." We have a boy who puts the fish on a stick with a fork on the end so that it will not fall off and then he kisses it. If you don't kiss the fish you don't get any. They should all be very quiet except the fisherman. We caught them right along this way. We used venison for the bait (the pancreas). If we didn't have this, we used grasshoppers. There was another boy who, when he would say this line to the fish, he would pull them out one after the other. We got about thirty fish on two sticks, and went home with them. Whenever we caught a small fish that is no good, we would kiss it and throw it back in the water, meaning that he should tell the bigger fish to come along. The reason we talk to the fish was that we should be like relatives to all animals as I had seen in my vision. We were ready to go home and the bait we had left we offered to the fish in payment for the fish we had gotten. The next time we went fishing we would be lucky....

We moved camp from here and camped at Split Toe Creek. Then we broke camp from here and camped at Spring Creek up into the hills on the south side toward Rapid Creek. That evening before the sun set there came a big storm, but I was glad to see it, and right before the storm you could see all kinds of split-tail swallows all over above us. The boys wanted to hit them and I did not like to see them do it. I got a stone and acted as though I was going to hit them, but had no intention of doing anything. No matter how hard they tried, the boys couldn't hit them. After thinking over the vision I knew that they couldn't kill them, so I was satisfied.

Next morning men got on horses and got [axes] ready to get tipi poles. They followed Rapid Creek into the hills and into the thick of the forest and began cutting tipi poles. There were lots of slim poles, for no one at this time had bothered them at all. They brought them back and began to strip and dress the poles. Some of us

knew how to strip them and some did not, so the work was rather slow. Men had gone out on a hunt so we had plenty of meat--bear meat, etc. We were sitting around camp boiling bear meat. Next morning we were all through with the poles and we began building a sweat tipi for a medicine man by the name of Chips. He was the first man who made a sacred ornament for Crazy Horse to use in the war and probably this is where Crazy Horse was made bulletproof and got his power (Black Elk quoted in DeMallie 1984:155-57).

Other references stress the value of the Black Hills for hunting. Standing Bear also told of visiting the Black Hills in the spring of 1874. His band of Minneconjou left their camp near the mouth of the Cheyenne and traveled west along the Cheyenne toward the Black Hills. While there they hunted and met with other Lakota bands camped west and north of the Hills (DeMallie 1984:158).

The name for the year 1875-76 on the Oglala winter-counts is Selling of the Hunting Ground. This refers to the Allison commission's attempt to trade with the Lakota for the relinquishment of the Black Hills (DeMallie 1984:162). Sitting Bull, the renowned holy man of the Hunkpapa division of the Lakota, stated that the Black Hills were the "food-pack of the people" (DeMallie 1984:171). Standing Bear related that,

At about this time I was about fifteen years old and I heard Sitting Bull say that the Black Hills was just like a food pack and therefore the Indians should stick to it. At that time I just wondered about what he had said and I knew what he meant after thinking it over because I knew that the Black Hills were full of fish, animals, and lots of water, and I just felt that we Indians should stick to it. Indians would rove all around, but when they were in need of something, they could just go in there and get it (Standing Bear quoted in DeMallie 1984:164-64).

Hyde (1937:41-42) also noted that the Black Hills represented prosperity to the Lakota and the Cheyenne allies. For a brief period, the Brule and Oglala enjoyed the convenience of trading posts near the Black Hills at Butte Cache and at the mouth of Rapid Creek from which they could obtain firearms, ammunition, and other necessities.

During the generation from 1805 to 1835 the Oglalas were probably happier than they ever were in later times. Dwelling in remote sections on the plains, they were untroubled by the whites, only a few French traders whom they looked upon as their good friends came into their country. They were now plentifully supplied with horses, game abounded in their territory, the camps were usually overflowing with fresh and dried meat, and the call to come and feast was heard all day long....During these years the Oglala camps were almost always within sight of the Black Hills, which from a distance in the plains appeared as a faint blue shape on the horizon, but seen near at hand rose grim and black against the sky. In winter the camps were located in sheltered valleys close to the eastern edge of the hills, and sometimes the people went into the mountain valleys to hunt deer and elk or to cut lodge-poles; but Pa Sapa, the Black Hills, were sacred ground, the heart of the Teton land, where people did not often venture to camp (Hyde 1937:41-42).

The importance of Bear Butte as a rendezvous point is evident from historic records. In 1857, the Lakota held a great council between Bear Butte and the Black Hills to decide what to do about white interlopers in their country (Hyde 1937:82). Soon after the council a band of Minneconjou and Hunkpapa discovered a survey party under Lieutenant G.K. Warren on the west side of the Black Hills. The Lakota ordered Warren to leave at once and to inform his superiors that they must keep whites out of Lakota territory if they wished to avoid hostilities (Hyde 1937:82).

Warren's report of the encounter shows the extent to which the Lakota had shifted to a pastoralist subsistence pattern in response to the hide trade:

[The Minneconjous and Hunkpapas] were encamped near large herds of buffalo, whose hair not being sufficiently grown to make robes, the Indians were, it may be said, actually herding the animals....The intention of the Indians was to retain the buffalo in their neighborhood till their skins would answer for robes, then to kill the animals by surrounding one band at a time and completely destroying each number of it...(Warren 1957 cited in McLaird and Turchen 1973).

This practice of herding the wild buffalo was clearly a response to the hide trade, as the animals were obviously being killed for their hides, rather than for their meat. The practice of killing entire herds probably was not followed prior to the hide trade, although large-scale kills did take place periodically as evidenced by the Vore bison kill site (Reher and Frison 1980). This also indicates that the Lakota were enjoying sufficient prosperity to spend their time waiting for the bison to grow their fall coats, rather than engaging in hunting and foraging full-time. It also suggests that trade items had become necessary to the maintenance of the Lakota standard of living to the extent that they had reorganized their seasonal round around the hide trade. It also indicates that, although the Lakota considered the Black Hills the heart of their country, their activities were concentrated outside the mountains. When the Custer expedition of 1874 explored the Black Hills, they encountered only one group of Lakota: a small hunting party of seven lodges near Deerfield who had been stockpiling deer meat for two months (Ludlow 1875).

During much of the nineteenth century, the Lakota battled the Crow for control of the Powder River country. The buffalo hide trade of the 1840s inflamed the situation, as both groups fought for these valuable bison hunting grounds. The southern Lakota tribes meanwhile pushed into the Skiri Pawnee hunting grounds along the Platte River. These areas, too, came to be dotted with Lakota sacred sites.

The northern Lakota bands had other important hunting grounds in what is now northwestern South Dakota (Vestal 1934). This area contained an important Lakota sacred site, Ludlow Cave, as well as many areas used for eagle trapping and plant-food gathering.

### **Euro-American Trade Goods**

Although all non-native trade items had a significant impact on native cultures, it was the horse, obtained from the Spanish settlements of the Southwest, and the gun, obtained from French, English, and American fur-traders in the Northeast, that would transform many aspects of Plains Indian life. The most complete study of the acquisition of the horse and gun on the northern plains is Frank Secoy's 1953 classic *Changing Military Patterns of the Great Plains Indians*. Secoy's

research indicates that the first horses and guns reached South Dakota about 1720-1750, from the southwest and northeast, respectively. Guns were probably initially acquired via Mandan, Hidatsa, and Arikara traders (Secoy 1953; Ewers 1954). Horses were traded by the Kiowa in the Black Hills area and by the Missouri River villagers. Native lifeways changed dramatically as local populations acquired significant numbers of horses and guns.

The Kiowa apparently acquired horses soon after they settled in the Black Hills and Powder River country (Mooney 1898:160). The explorer LaSalle wrote in 1682 that the “Gattackas” (Kiowa-Apache) and “Manrhoats” (Kiwias?) had plenty of horses, mostly raided from the Spanish settlements (Mooney 1898:161). The Kiowa and their Kiowa-Apache allies soon developed a booming trade in horses stolen, captured, or purchased in the Southwest and Mexico (Nye 1962:ix). This provided the Kiowa with a valuable commodity of exchange. A powerful three-way trade developed between the Kiowa, Arikara, and Hidatsa (Mayhall 1971:12-13; Mooney 1898:161,166). The Kiowa-Apaches were able to exploit their linguistic affiliations with other Apache groups in developing this trade. The Kiowa also used a kind of youth exchange program to ensure that their group would include competent Crow and Arikara translators (Mooney 1898). Old Kiowa and Kiowa-Apache narratives refer to trading parties traveling as far south as the place where little humanlike creatures lived in the trees--that is, the rainforests of Mexico (Nye 1962:ix).

Acquisition of the horse and gun affected Plains Indian nations in many ways (Sundstrom 1989:101). First, patterns of warfare changed as these items were adapted to military pursuits (Secoy 1953). Second, territories and military alliances shifted rapidly as the balance of military power in the region changed according to who had the best access to horses and guns. Third, horses increased group mobility, while guns allowed some groups to acquire and defend new territories. Fourth, an arms race ensued that led to fierce competition for tradable commodities and access to trade centers. Intertribal trade gained new importance as various groups sought to build and maintain horse herds. Fifth, many northern groups, including the Kiowa, Lakota, Crow, Cheyenne, Blackfoot, and Arapaho, underwent a cultural florescence during the century between their full development of Plains Equestrian culture and their confinement on reservations following the US-Indian wars of the late-nineteenth century. Horse ownership became an important status marker. This new means of acquiring social status provided a strong incentive for individuals either to trade with or to conduct raids on neighboring groups to obtain horses. Sixth, many groups completely abandoned semi-horticultural life ways in favor of a more mobile existence as hunter-foragers and trappers. Seventh, equestrian groups abandoned old subsistence activities for new ones. Communal drives and bison jumps were largely replaced by hunters riding in among the herd and shooting individual animals. This, in turn, altered patterns of social aggregation and control. Finally, as dependence on trade goods increased, Indian men began to marry more and more wives. They could support large families through efficiency in hunting via gun, while the wives and daughters allowed families to process very large numbers of buffalo hides for trade. Families also arranged for their daughters to marry white traders in order to increase their access to trade goods and control over the terms of trade. These marriages set up alliances between powerful native families and white traders that tended to be self-reinforcing. Any explanation of the Protohistoric period must be placed in the context of these rapidly changing conditions.

The ethnographer James Mooney, in his book on Kiowa histories, summarized the impact of the horse on the northern plains groups:

It is unnecessary to dilate on the revolution made in the life of the Indian by the possession of the horse. Without it he was a half-starved skulker in the timber, creeping up on foot toward the unwary deer or building a brush corral with infinite labor to surround a herd of antelope, and seldom venturing more than a few days' journey from home. With the horse he was transformed into the daring buffalo hunter, able to procure in a day enough food to supply his family for a year, leaving him free then to sweep the plains with his war parties along a range of a thousand miles (Mooney 1898:161).

While Mooney may have stated the matter somewhat dramatically, the Kiowa themselves related that their way of life was transformed by the acquisition of the horse. In 1890, an elderly Kiowa related the history of her people to Captain H.L. Scott. After describing life in the dog-travois days, she said, "After we got horses, we put that road aside" (Nye 1962:viii).



Figure 74. Metal projectile points: left, found near Bear Butte, Meade County; right, from excavations at Fort Pierre (ARC photos).

### Early Euro-Americans in the Missouri Valley of South Dakota

No geographic feature has had a greater impact on South Dakota history than the Missouri River. This major waterway linked the area to the early Euro-American colonies in the Southeast, just as it formerly linked Northern Plains Indian cultures to those of the Middle Mississippi, Southeast, and Mesoamerica. In an age dominated by air and land transportation and telecommunications, it is easy to forget the crucial role rivers and streams played as conduits between peoples. The European world and its colonies were largely ignorant of the Missouri until

the eighteenth century. In 1673, Father Jacques Marquette and Louis Jolliet passed by the river's mouth where St. Louis stands today. In 1701, another priest, Father Louis Hennipin passed by the same confluence and recorded information from the Indians that the river was very long, extending across the plains to the mountains that overlooked the Pacific Ocean. Many villages were said to line its banks. Meantime, French fur traders had pushed their way upstream as far as the Big Sioux. Although largely unrecorded, Pierre Charles Le Seuer and other French traders had operated along the Missouri since 1680.

Following the Treaty of Utrecht in 1713, the French expanded rapidly into the upper Mississippi and Missouri Basins (Meyers 2005:49). The French raced to find a passage to the Pacific before their English and Spanish rivals. The most successful efforts in that regard, and the one that first put South Dakota on the Euro-American map, were the Verendrye expeditions. In 1738, the Verendryes, father and two sons, traveled overland from Lake Winnipeg as far west as the Mandan villages; four years later the sons traveled as far west as the Powder River Basin. The Missouri Basin, or Louisiana, as it was then known, passed to Spain with the defeat of France in the Seven Years' War in 1763. French traders continued to ply their trade under the auspices of the English Hudson Bay Company or the Spanish government. (Meyers 2005). The American Revolution diverted attention and resources away from exploration, although it appears that French and Spanish traders were resident in the Middle Missouri throughout that period. In 1794, two expeditions, that of Jean Baptiste Truteau and that of Jacques d'Englise pushed far up the Missouri in to what is now South Dakota. Truteau built a cabin for winter shelter near present-day Fort Randall Dam, the first documented European building in South Dakota. An expedition under John Evans on behalf of the Spanish crown reached the Mandan villages in 1797. In 1800 Regis Loisel built a log trading post downstream of present-day Pierre. The Lakota winter counts from this time forward record the establishment of posts along the river.

In 1803, territory variously claimed by Spain, France, and England became part of the new American republic with the Louisiana Purchase. Having bought Louisiana, the US government undertook to explore its new territory, and at last funded Thomas Jefferson's long dreamed-of exploratory expedition of the mid-continent and West. Meriwether Lewis and William Clark set off from St. Louis in the spring of 1804 with 45 men and a smaller crew of boatmen and soldiers to accompany them as far as the Mandan villages. The Corps of Discovery entered present-day South Dakota on October 13, 1804. They took a side trip to Spirit Mound near the mouth of the Vermillion River, killed their first bison, and met cordially with a Yankton community whose members included the wife of trader Pierre Dorion, whom the expedition had recently hired as a translator. An encounter with the Lakota a month later at the Teton or Bad River was less congenial. The warriors tried to raid and delay the expedition, and the Corps quickly continued upstream. At the mouth of the Cheyenne, the expedition met Jean Vallé, who had been trading in the Black Hills. Expedition members meanwhile were busy taking specimens of prairie fauna: bison, pronghorn, magpies, jackrabbits, and prairie dogs. In early October, the expedition reached a large Arikara village near the Grand River, meeting several fur traders resident there. By mid-October, the expedition had proceeded upstream into what is now North Dakota. There they engaged Jean Baptiste Lepage, who had traded along the Little Missouri and in the Black Hills, as well as Toussaint Charbonneau and his young Shoshone wife Sacagawea.

On their return trip, Lewis and Clark again enjoyed Mandan and Arikara hospitality and another successful council with the Yankton. In less than four years, the Corps of Discovery had

traveled more than 7000 miles, gathered several volumes of information on the natural history of the new American territories, accurately mapped the major waterways, and entreated the Indian nations along the way to maintain peaceful relations with the young US government (Meyers 2005).

As noted, fur traders preceded the Corps of Discovery in the Missouri Valley. Among them were Manuel Lisa who traveled up the Missouri and Yellowstone Rivers to the mouth of the Bighorn in 1807. There he built Fort Manuel from which his 42 hired trappers operated. Late the same year, Pierre Chouteau, Jr., attempted a voyage upriver, but was stopped by Arikara warriors near the mouth of the Grand River, who killed three of the traders and three soldiers in a small military expedition traveling with them. In response to increasing competition, Lisa formed the Missouri Fur Company in 1809 with Pierre and August Chouteau, Pierre Menard, and Andrew Henry. This group dominated the trade in South Dakota until 1813, pushing past the Arikara villages to reach Mandan and Blackfoot territory. The Missouri Company employed some 180 men. Meantime, the lucrative trade in beaver belts and other furs lured John Jacob Astor's American Fur Company to expand into the Missouri Valley. In 1811 a large party pushed upstream in keelboats, hoping to build a line of forts all the way to the Pacific. The Blackfeet, however, were permitting no trade, trapping, or travel in their territory. The Astorians left the keelboats at the Grand River, purchased horses from the Arikara, and set off overland toward the Black Hills. Although they eventually reached Fort Astoria on the Columbia River, the War of 1812 halted Astor's plan. During the war, one British trader, James Dickson, was able to establish a trade on Lake Traverse among the Yanktons, but he was not able to expand into the Missouri Valley (Meyers 2005).

At the end of the war in 1815, the Americans reestablished their Missouri trade, with Lisa dominating the area until his death in 1820. Two years later the American Fur Company and the Rocky Mountain Fur Company established posts in the region. William Ashley of the Rocky Mountain Company had a small post at the mouth of White River; Andrew Henry explored the course of the Cheyenne to the Black Hills. Trading posts large and small sprang up throughout the Missouri Valley and as far west as the forks of the Cheyenne. The predecessor of Fort Pierre, Fort Tecumseh, was built at the mouth of Bad River in 1822. The Columbia Fur Company operated posts on the Big Sioux, James, and Bad rivers, trading primarily in buffalo hides. In 1823, a Rocky Mountain Company party skirmished with Arikara at the Grand River. The government sent a retaliatory expedition under Colonel Henry Leavenworth, the 220 soldiers bolstered by several hundred Oglala and Brule Lakota warriors. The Lakota demolished the abandoned Arikara village and raided the corn stores and named that year "when they had much dried corn."

In 1876, a party of prospectors from Montana found an abandoned cabin on Sand Creek, in the northern Black Hills, with a sign reading "American Fur Company" above its door (Lee 1976). It is not known when or by whom the cabin was constructed; however, of the recorded American Fur Company excursions into the Black Hills, only Wilson Hunt's 1811 expedition was in the northern Black Hills area. It seems unlikely, however, that Hunt would not have recorded building a post in the area. It is possible that the cabin was built by one of Vallé's associates as part of unrecorded trading activities.

In October 1823, a party of twelve "mountain men" from William H. Ashley's company, led by Jedediah Smith, passed through the White River Badlands and skirted the southern Black Hills

(Palais 1941:5). The men were on their way west to meet Andrew Henry at a rendezvous in the Rocky Mountains.

From 1830 to 1832, at least, there was a fur trading post called the Ogallala (or Oglala) Post at the mouth of Rapid Creek. Thomas L. Sarpy, a member of a prominent St. Louis family of fur traders, managed it. Sarpy was killed during an explosion that destroyed the post (Chittenden 1986:388). The post was not rebuilt.

With the exception of the report of the abandoned American Fur Company post on Sand Creek and the Ogalalla Post on Rapid Creek, no trading posts are known from the western Black Hills. It appears that the traders in the area established temporary camps on their seasonal visits to the trade rendezvous near the Black Hills; however, records about this trade are scant. As far as the records indicate, the traders operated out of Fort Laramie, Bordeaux trading post (Crawford, Nebraska), Fort Pierre, and for a brief time the Ogallala Post at the confluence of Rapid Creek and the Cheyenne River.

By the early 1830s, steamboats were plying the Missouri as far as Fort Union at the mouth of the Yellowstone. Pierre Chouteau was the first to bring steamboats to the Upper Missouri, realizing that larger shipments to St. Louis meant much greater profits for his company. In 1832, Chouteau rebuilt Fort Tecumseh as Fort Pierre, one of the largest trading posts in the Missouri country. By then, beaver populations were depleted and a more diverse fur trade replaced the beaver trade. In the Middle and Upper Missouri, the trade had largely shifted to buffalo. The nomadic Lakota bands profited greatly; untethered to garden plots and well mounted, they could bring in great numbers of hides whenever the traders were buying. The steamboats carried vast numbers of buffalo hides and tongues to St. Louis for export to the eastern cities and to Europe. By the mid-1840s, the Lakota winter counts were recording famine because no buffalo could be found in winter. The steamboats also carried explorers and adventurers into the Middle and Upper Missouri country. Among the most important of these were Prince Maximilian of Wied, Karl Bodmer, Henry Boller, Joseph Nicollet, John Fremont, and Thaddeus Culbertson. South Dakota was rapidly opening to the Americans via its river highway. Historic records place about 100 fur trade posts in what is now South Dakota, most clustered along the Missouri (Hoover 2005:64). Between 1848 and 1866, Father Pierre Jean DeSmet made many visits to the Dakota and Lakota nations. Some of these visits took him to western South Dakota (Jennewein and Boorman 1961:166).

By the 1850s, the fur boom was over and the big companies had sold out and left the area. In 1855, Pierre Chouteau sold his fort to the US Army. The South Dakota fur trade era gave way to one of homesteading and town-building.

## **Environmental Setting**

All environmental zones.

## **Temporal Boundaries**

1700-1850 CE

## **Spatial Boundaries**

Entire state.

## **Property Types**

Fur-trade posts, site associated with early exploratory expeditions, military forts and battle sites, graves.

## **Locational Characteristics**

Entire state.

## **Condition**

Varies.

## **Voids in Research**

As mentioned, relatively few archaeological sites dating to this period have been studied. Research is needed at all levels, from individual sites to villages to regionwide trade and interaction networks.

## **Research Topics**

1. Can Nakota/Middle Dakota sites be identified archaeologically?
2. Can Indian acculturation be identified archaeologically?
3. Adaptation to reservation life.
4. Siouan migrations into the area.
5. Ethnohistoric identification of the Yankton.
6. Provide proper identification of the Indian bands involved in the Battle of Slim Buttes (Sandstone Buttes Region).
7. Which village(s) did the Verendrye Expedition visit? Perhaps dendrochronological research in the Pierre vicinity might narrow the range of possible sites.
8. What cultural changes occurred as a result of the adaptation of the horse as a transportation mode?
9. When were the Kiowa-Apache and Kiowa present in and around the Black Hills and what uses were they making of the area?

10. In the light of the Kiowa tradition identifying the southern Black Hills as their homeland (Mooney 1898), can any archaeological sites be attributed to them?
11. Does archaeological evidence of conflict between the Kiowa-Apache and Snake in 1741 exist within the Black Hills (Lazio 1978)?
12. Is evidence of the Kiowa and Kiowa-Apache trade with the Spanish (including the introduction of the horse) present in the Black Hills?
13. Are obsidian and/or Dismal River ceramics an indicator of Kiowa or Kiowa-Apache presence (Lazio 1978)?

## **Research and Management Goals**

Archaeological sites of the early contact era have the potential to address many questions about the repercussions of Euro-American and Native American contact and the impact of colonialism in general. This research can help correct biases that result from historical documents coming almost exclusively from the Euro-American perspective. Archaeology is uniquely suited to examining the effects of the introduction of new items of material culture, the shifts in family and community structure that resulted from the fur trade, changes to intertribal warfare and trade, and the effects of epidemic and venereal diseases introduced by non-Natives entering the Northern Plains. The latter question---the impact of disease on Native populations---is necessary to correct the skewed view of Native American cultures that has resulted from the first written descriptions of various Indian nations coming only after populations and social structures had been decimated and disrupted, if not destroyed. Sites with components dating to this period should be given high priority for preservation or investigation so that a more accurate story can be developed.

## **Sites Listed in the National Register**

39BF13, 39BN7, 39CO5, 39FA88, 39FA321, 39FA413, 39FA819, 39HN209, 39HN210, 39HN486, 39LM63, 39LN2, 39PO205, 39RO21, 39RO38, 39ST217, 39ST237

## **Archaeological Regions**

All regions.

## **Sites**

39AU1 (possible fort), 39BF13 (fort), 39BF232 (trading post), 39BN7 (trading post), 39BN100 (trading post), 39BN107 (trading post), 39BU95 (artifacts scatter with glass beads), 39BU96 (artifacts scatter with glass beads), 39BU105 (artifacts scatter with glass beads), 39BU117 (artifact scatter with metal arrow point), 39BU435 (stone effigy associated with beads in anthills), 39CH299 (cairn marking a Yankton prayer site), 39CH312 (cairn), 39CL1 (Dakota burials), 39CO5 (trading post), 39C09 (Arikara burial, Arikara-US battle site), 39CU132 (camp site with metal arrow point), 39CU966 (piece of retouched glass), 39DE19 (1854 inscription on rock), 39FA88 (Ponca rock art), 39FA321 (Ponca rock art), 39FA413 (fort), 39FA819 (rock art), 39FA1469 (hearth), 39GR4 (fort), 39GR5 (fort), 39GR15? (fort), 39GR16 (fort), 39GR24 (camp

with trade bead and copper disc), 39HK17 (artifact scatter with gun flints), 39HN34 (possible burial; glass beads), 39HN209 (rock art), 39HN210 (rock art), 39HN454 (artifact scatter with glass beads), 39HN496 (rock art), 39HN556 (stone circle site with glass beads), 39HN826 (rock art), 39HN827 (rock art), 39HN1221 (rock art), 39HN1267 (metal trade goods), 39HS48 (fort), 39HU52 (fort), 39KB11 (burial with glass beads), 39LA1563 (artifact scatter with gun flints), 39LM10 (fort), 39LM52 (fort), 39LM53 (fort), 39LM57 (trading post), 39LM58 (artifact scatter with military buttons, copper pendants, china sherds), 39LM63 (fort), 39LM168 (artifact scatter with chipped stone, ceramics, and metal tinkler), 39LM239 (possible location of Trudeau's shelter), 39LM241 (fort), 39LM259 (occupation site with glass beads), 39LN2 (Oneota village), 39MD118 (artifact scatter with glass beads), 39MD197 (artifact scatter with glass bead), 39MD271 (catlinite pipe), 39ML7 (Dakota village and burial), 39ML10 (fort), 39LM11 (fort), 39LM42 (artifact scatter with stone tools and factory-made pipe), 39LM50 (trading post), 39LM57 (trading post), 39LM74 (trading post), 39ML88 (artifact scatter with glass beads), 39MN1 (trading post), 39MT16 (gun flint), 39OL1 (Lakota prayer place), 39PE33 (stone circles with one metal artifact), 39PN616 (artifact scatter with glass bead), 39PN1144 (hearth and quarry with tinkler and post-contact date), 39PN2078 (Custer trail), 39PO64 (Lakota prayer place), 39PO203 (rock art site used as Lakota/Dakota shrine), 39PO206 (trading post), 39RO21 (trading post), 39RO38 (trading post), 39RO45 (Oneota village), 39SL45 (fort), 39SP11 (Dakota village), 39ST16 (trading post), 39ST17 (village), 39ST26 (fort), 39ST52 (hearths with brass and iron objects), 39ST82 (trading post), 39ST83 (trading post), 39ST202 (trading post), 39ST217 (trading post, fort), 39ST237 (trading post, fort), 39YK203 (Yankton village and burial), 39ZB31 (occupation), 39ZB202 (trading post). See also Extended Coalescent and Terminal Middle Missouri in Plains Village section.

## **Bibliography**

Kapler 1987; Thompson 2005

## **Historic Period**

### **Overview**

#### **Missouri Valley Settlements**

The Missouri River region was the first part of South Dakota settled by non-Indians, while remaining Indian country for most of its reach. A unique mix of Indian villages, trading posts, steamboat landings, military forts, and reservations formed the matrix in which non-Indian settlements grew up along the river. Several US government actions set the stage. First, the federal government established an Upper Missouri Agency to facilitate interactions with local Indian nations in 1819. The US reiterated its control over non-Indians in the region in the Fur Trade Act of 1824. Towns began to grow up around the fur trading posts.

With the Yankton Treaty of 1858, some 11 million acres along and east of the Missouri River were opened to white settlement. The treaty provided for mixed-blood families to select 650 acres, allowing the fur traders and their wives and children to continue in positions of economic and political importance. For example, lands claimed by Zephier Recontre and Charles Picotte became the towns of Bon Homme and Yankton, respectively (Hoover 2005:69). New white traders were

not allowed to operate in the “Yankton Triangle” formed by the Big Sioux and Missouri except by special permit (Hoover 2005:70). The treaty also reserved 400,000 acres for the Yanktons, as well as an agency site on the Missouri River. In return for ceded land, the Yanktons received annuity payments and other forms of support. With new land, new homesteads, and a prosperous reservation, the area attracted entrepreneurs. Dakota Territory was organized in 1861 with Yankton as its capital. Eastern South Dakota filled rapidly with citizens and immigrants seeking small holdings. Two competing companies of land speculators, the Western Town Company and the Dakota Land Company vied for control of the newly opened Missouri Valley. The towns of Vermillion, Bon Homme, Yankton, Oacoma, Springfield, and Harney City were platted by 1870. The east river counties took shape between 1868 and 1883. Meanwhile, under the terms of the 1868 Fort Laramie Treaty, Indian agencies were established along the river at Whetstone, Fort Bennett, and Fort Yates, and the old Fort Pierre and Fort Randall posts gained importance as places to cross the river.



*Figure 75. Excavation of palisade at Fort Pierre Choteau, 39ST237, 2000 (ARC photo).*

The Missouri Valley combined Indian reservation, unclaimed land, and new towns. Indian agencies and military posts spurred commerce in the area, as did the treaty payments and farmsteads allotted to Indian and mixed-blood families. Its main enterprises were general stores, hotels, farms, ranches, and woodyards that provided fuel for the steamboats. A large military post, Fort Randall, was constructed in 1856, and soon evolved into a town with hotels, churches, shops,

and schools. A mix of agency Indians, French fur traders, mixed-blood families, government employees, and military men made up the population. The town of Lake Andes evolved from the Yankton village led by White Swan. Towns such as Tackett Station and Andrus sprang up just outside reservation boundaries. As is typical of frontier zones, the area also attracted illegal enterprises such as prostitution and sale of whiskey in Indian communities. As the young communities matured, law and order gradually gained ground.



*Figure 76. Excavations at Fort James, 39HS48, 2009 (ARC photo).*

The brief Dakota War of 1862 broke out when the US government, distracted and financially strapped by the Civil War, failed to provide rations to eastern Dakota people living in southwestern Minnesota agreed to in a series of treaties signed between 1837 and 1858. Corrupt Indian agents and traders skimmed off what little money came into the Dakota Indian reservation. On the verge of starvation, a few Dakota warriors raided a farm to get eggs and other food, killing five settlers. Young Dakota warriors under the leadership of Little Crow decided to attack settlements along the Minnesota River valley in an effort to reclaim farmlands, hunting grounds, and wild rice beds for their people. For the following five weeks, raids, killings, and counterattacks continued. No accurate account of casualties exists; however, news reports of the day estimated settler losses at around 800 killed. Little Crow's forces initially fought off the Minnesota Militia and attacked a military fort, but the Dakota were defeated on September 23, 1862 at the Battle of Wood Lake. No

fighting took place in Dakota Territory; however, both white and Dakota Indian refugees fled into what is now South Dakota. In the aftermath of the war, some 1600 Dakota men, women, and children were captured and imprisoned at military posts in Minnesota, 38 Dakota warriors were hanged (the largest mass execution in US history), all treaties with the Minnesota Dakotas were voided, Dakota reservations were taken for white settlement, and Dakota Indians were banished from living in Minnesota. Those who survived a disease-ravaged winter in a prison camp near Fort Snelling were loaded the following spring onto steamboats and taken to the newly established Crow Creek Reservation in southeastern South Dakota. Three years later, most of the remaining former prisoners were removed to the Santee Reservation in northeastern Nebraska, and the Crow Creek Reservation was occupied by a group of Yanktonai and Lakota bands (Hoover 2005:83). In the two years following the Dakota war in the Minnesota Valley, some of the Dakota warriors made their way into Lakota and Yanktonai camps where they continued their armed resistance against the US military. Six clashes with US forces dispatched from Fort Pierre under command of General Henry Sibley were fought in what is now North Dakota. Sibley's command eventually brought down the resistance movement, although some Dakota joined their Lakota cousins in the battles for the Black Hills and Powder River country (Clodfelter 1998).

Until railroads reached South Dakota in the early 1870s, the Missouri River towns attracted most non-Indian settlement. Yankton was capital of Dakota Territory from 1861 to 1883, followed by Bismarck. Another river town, Pierre, was chosen as the capital of the new state of South Dakota in 1890. Off-river towns such as Brookings and Sioux Falls grew rapidly once they had rail service. The settlement of eastern South Dakota was largely a matter of some land speculators getting lucky with rail connections, while less fortunate enterprises dried up as the rail lines passed them by. On the Missouri, the Indian agencies, reservations, and river trade towns ensured a more steady population and economic base.

Waves of settlers from the eastern US and various parts of Europe landed in South Dakota, pulled by the promise of cheap land and pushed by overpopulation and civil strife in Europe (Olson 2005). The first wave of settlement, 1860-1880, was mostly New England Yankees. Swedes followed beginning in 1868, and Czechs in 1869. What would become a large population of German-Russians (ethnic Germans who had moved to the Volga region under the reign of Russian empress Catherine the Great) entered the scene in 1872. By 1878, the expansion of rail lines extended into eastern South Dakota sparked the Dakota Boom. Large numbers of Norwegians, Dutch, and Swedes entered South Dakota enticed by railroad promotions beginning in 1878, followed by Danes in 1882. The largest immigration of Germans happened after statehood in 1889. African American settlers arrived early in southeastern South Dakota, with a small population living in the Sioux Falls area by 1870.



*Figure 77. Excavations at a brick kiln, 39UN8, 1981 (ARC photo).*

### **Scientific and Military Explorations**

In 1839 Dr. Frederick A. Wislizenus may have crossed western South Dakota on a journey to the Rocky Mountains. Some historians believe that Wislizenus's report refers to the Laramie Mountains, rather than the Black Hills proper (Froiland 1978). Both of these ranges were referred to as the Black Hills or Black Mountains at the time.

In 1846, Dr. Hiram A. Prout of St. Louis published the first description of a Badlands fossil and started the long tradition of Badlands paleontological study, which continues today (Prout 1946). The next year, Dr. Joseph Leidy began his study of Badlands fossils, which was to continue for 22 years (Leidy 1847). Prout and Leidy's first fossil specimens were obtained from American Fur Company traders. In 1849 John Evans of the David Dale Owens Geological Survey visited the area and started work on the first Euro-American map of the Black Hills and Badlands. Evans was studying fossils in the White River Badlands. The Black Hills portion of the map is inaccurate, but it nevertheless sparked interest in the area (O'Harra 1920:24). In 1850 Thaddeus Culbertson traveled to the area, collecting fossils for the Smithsonian Institution. The following year, he published an account of the expedition (Culbertson 1952). F.V. Hayden of the US Geological Survey made expeditions to the Badlands throughout the 1850s, sometimes provoking the anger of the Lakota who controlled the area. As head of the US Geological Survey, Hayden would

become an important advocate of the “rain follows the plow” theory and other schemes for developing the West (White 1991).

In 1855, General W.F. Harney included the Black Hills in his exploration of the country from the Missouri River to Fort Laramie in present-day Wyoming. Although Harney had formally promised the Lakota and their allies that no whites would be allowed in the Black Hills, Lieutenant G.K. Warren was instructed to find the best location in the Black Hills for a military base. Near Inyan Kara Mountain, a band of Lakota stopped Warren from entering the Black Hills. Their leader, Bear’s Rib, warned Warren to stay out of the area so as not to disturb a buffalo herd the group was tending (Robinson 1904:159-160). Warren skirted the area. He conducted other expeditions to and around the Black Hills in 1855, 1856, and 1857 (Warren 1875).

Agitation by various parties to explore the Black Hills and the hostility of the Lakota toward such action prompted General Philip H. Sheridan to order another exploratory expedition to the Black Hills. Sheridan commanded Lieutenant-Colonel George A. Custer to head the expedition. Custer was to determine the feasibility of locating a military post in the Black Hills and to determine whether the reports of gold deposits were true. Custer’s party left Fort Abraham Lincoln, Dakota Territory, July 2, 1874. The party included 1000 soldiers; chief engineer Captain William Ludlow; geologist Newton H. Winchell; chief medical officer and botanist J.W. Williams; photographer William Illingsworth; and miners Horatio N. Ross and William T. McKay (O’Harra 1929).

The members of the expedition were impressed by the cool, refreshing mountainous country after reaching the Belle Fourche River. They proceeded into the Black Hills, establishing temporary headquarters on French Creek. Here Ross and McKay discovered gold. This discovery did not figure prominently in Custer’s official report; however, those in the camp were excited about the prospects for gold mining (O’Harra 1929). They promptly organized the Custer Park Mining Company on August 5, 1874. In accordance with the laws of Dakota Territory (and ignoring the 1855 and 1868 treaties with the Lakota), some members of the expedition staked mining claims.

After exploring Harney Peak (so named by the Warren Expedition in 1855; now known as Black Elk Peak) and canyons to the west and south of French Creek, the expedition forces returned to Fort Abraham Lincoln on August 30, 1874. From one of his forays into the southern Black Hills, Custer sent Charley Reynold’s, a guide, to Cheyenne, Wyoming Territory, with the preliminary report of the expedition and the discovery of gold. His report was published August 27, 1874 in the Chicago Inter-Ocean. This report sparked the Black Hills gold rush (Palais 1941).

Another reconnaissance of the Black Hills was made in 1875 by professors Walter P. Jenney and Henry Newton, accompanied by 15 assistants and escorted by an Army contingent under the command of Lieutenant-Colonel Richard Dodge (Newton and Jenney 1880). The purpose of the expedition was to determine for the Bureau of Indian Affairs how much gold was in the Black Hills. The Jenney expedition spent five months in the area and explored both the southern and the northern Black Hills. They did not find much gold; however, their reports did little to discourage the rush of gold seekers.

## The Black Hills Gold Rush

By 1866 rumors of gold and the report of the Warren expedition geologist, Dr. F. V. Hayden, had roused interest in the area. Hayden's 1857 report included a geological map of the upper Missouri country, including the Black Hills. A second map published in 1858 provided a much more accurate view of the area and was the first to show accurately the extent and geology of the Black Hills (O'Harra 1920). Dakota Territory Governor A.J. Faulk used Hayden's report and the many tales of gold strikes as the basis for a promotional speech, prompting the formation of exploration companies. In 1867 Byron M. Smith of Yankton revived the Black Hills Exploring and Mining Association and prepared to explore the country that year. His association was even issued howitzers by the US Army. Before the company could move, General W.T. Sherman reminded all explorers that the Black Hills belonged to the Lakota and their allies in accordance with Harney's 1855 treaty. The Army intended to prosecute any trespassers on the land. Conceding to Sherman's warning, Smith canceled his venture. In spite of the warning, however, P.B. Davy mounted an expedition in 1868. This was abruptly ended by the government (Palais 1941).

The first of the Custer party to attempt to reenter the Black Hills was Horatio N. Ross (one of the expedition miners who found gold on French Creek) accompanied by a group of miners (Sundstrom 1994). They came to the Black Hills by way of the White River Badlands. In the foothills, they saw so many Lakota that they returned home. The Lakota and their Cheyenne allies were determined to keep trespassers out of the Black Hills. The US Army was also committed to keeping interlopers out of the Great Sioux Reservation, including the Black Hills. The Army officers focused their greatest vigilance on the Sioux City area because it was the logical place from which to depart for the Black Hills. The greatest agitation for free entry into the Black Hills also came from that area. Entrepreneurs and miners alike hoped to reap the rewards of promised riches from the Black Hills. The financial panic of 1873 provided added impetus for discovering "new" money.

Charles Collins of the *Sioux City Times* did nothing to quiet the excitement. In 1874 he led the first attempt to introduce a bill to purchase the Black Hills (Palais 1941:11-13). His office was headquarters for the Collins-Russell party, also known as the Gordon party. This party was the first to successfully elude the Army and reach the Black Hills (Sundstrom 1994). The party left for the Black Hills October 6, 1874, scarcely a month after Custer's return to Fort Abraham Lincoln. The party included 26 men, a woman, and a nine-year-old boy. Ostensibly headed for O'Neill, Nebraska, to homestead, the party went on to the Keya Paha River, through the Badlands, and northwest to the Black Hills where they struck Custer's trail. From there they made their way to French Creek, arriving December 23, 1874. Early in January, the members of the party constructed a stout stockade (Sundstrom 1994). During the winter, two of the party left for Yankton, Dakota Territory, where their discoveries of gold were given wide publicity. Four others left and made their way to Cheyenne, Wyoming Territory. The remaining members continued to prospect, living on cattle and wild game, and locating mining claims in the area. The Gordon Stockade Mining Record Book of February and March 1875 listed the various claims and sought legal protection for the claimants (Sundstrom 1994).

In April 1875 Captain John Mix located the stockade. He informed its occupants that Lame Antelope and 3000 Lakota were gathered nearby, also looking for the trespassers. Mix gave the group 24 hours to gather their belongings and come with him to Fort Robinson, Nebraska Territory,

and Cheyenne, Wyoming Territory. Once in Cheyenne, the courts determined they had no authority to prosecute the trespassers and they were freed. Some of them immediately began making their way back to the Black Hills (Parker 1972; Sundstrom 1994).

When the Jenney-Dodge expedition reached French Creek in June 1875, they found 15 miners working claims in the area. In response, Colonel Dodge stationed Captain Edwin Pollock at a post named Camp Harney at the present location of Custer, South Dakota, to remove miners from the Black Hills. Pollock rounded up the miners and jailed them in a rough log corral. Soldiers then escorted the trespassers to Camp Robinson, Camp Sheridan, or Fort Laramie. There, the prisoners were usually set free because the courts had no jurisdiction over them (Sundstrom 1994:23).

Despite these attempts to remove prospectors from the Black Hills, by January of 1876 about 10,000 people were living in Custer City. The invasion of the Black Hills was too great for the Army to control (Sundstrom 1994). As early as August 1875, promising gold strikes had been located in the northern Black Hills. By mid-January every foot of ground in Deadwood Gulch had been claimed (Parker 1966:90-91).

The Battle of Slim Buttes pitted US government forces against Lakota and Cheyenne in 1876. A cavalry contingent under General George Crook and Colonel Anson Mills, chasing bands that had taken part in the Battle of Little Bighorn, fell upon a group of Lakota under American Horse. As the battle progressed other Lakota and northern Cheyenne forces joined in. The US forces killed American Horse and several members of his band before a mutual disengagement of forces (Kingsbury 1915; Schell 1975).



*Figure 78. Deadwood Chinatown excavations, 2005 (ARC photo).*

## **The End of Indian Control of the Black Hills**

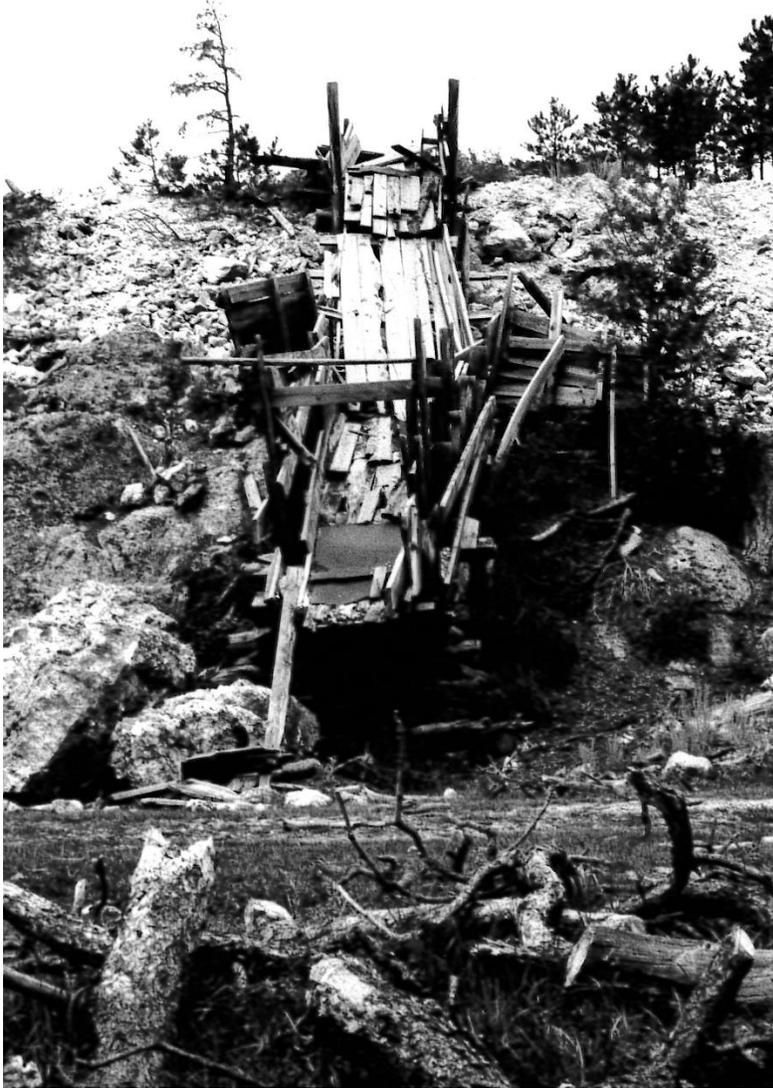
According to the 1868 Fort Laramie Treaty, all of western South Dakota was designated Lakota territory. Adjacent portions of Wyoming, including the Powder River country were included in the agreement as unceded hunting territory (Welch and Stekler 1994). Although this treaty was never formally repealed, it proved ineffective in limiting Euro-American expansion into the area. The Great Sioux Reservation established in 1868 remained intact less than a decade (Hyde 1937, 1961; Kingsbury 1915; Schell 1975). The territories listed as “unceded” hunting grounds, including the Powder River Basin, lacked US military protection from non-Indian intrusion. Establishment of the reservation prevented construction of rail lines, but did little to stem the tide of prospectors, cattle drovers, and town builders attracted to the area by gold, grass, and potential customers. Agencies for the western Lakota were established in 1871, setting the stage for the government to issue orders confining Lakota people to reservations. Although the agencies were established to administer the distribution of goods promised in the 1868 Fort Laramie Treaty, they would become headquarters from which the movements of Indian people would be severely limited and controlled. Lakota and Cheyenne people continued to defend the Black Hills and the rich buffalo grounds of the Powder River country through the 1860s and 1870s. Despite a string of victories--including the resounding defeat of the Seventh Cavalry in June 1876--Indians lost control of their treasured western lands by 1877. Militarily, the Lakota and Cheyenne were unbeatable, but the extermination of the bison herds and growing dependence on food and tools obtained from outsiders had rendered them starving and helpless to retake their territory. In surrendering to the US forces, the Lakota and Cheyenne gave up the right to leave the reservations without special permission.

The Great Sioux Reservation, established under the 1868 Fort Laramie Treaty, included all of western Dakota. With the Black Hills gold rush of 1875 and 1876, the Black Hills portion of this reserved land was overrun with white, black, and Chinese adventurers hoping to strike it rich. In August 1876, two months after the annihilation of Custer’s forces at the Little Bighorn, President Ulysses S. Grant appointed a commission to entreat with the Lakota and their allies for the relinquishment of the Black Hills. A small number of Lakota, Cheyenne, and Arapaho headmen--far less than the three-fourths majority called for in the 1868 Fort Laramie Treaty--were coerced into signing under threat of starvation. The agreement was put into effect by act of Congress February 28, 1877. With the imposition of the 1877 agreement, the Sioux Reservation boundary was moved to a longitude well east of the Black Hills. Later agreements broke the reservation into the five separate units that lie west of the Missouri River today: the Standing Rock, Cheyenne River, Lower Brule, Rosebud, and Pine Ridge reservations. The Crow Creek Reservation lies opposite Lower Brule on the east side of the river.

## **The Mining Industry**

The Black Hills gold rush was already in full swing when the area was officially opened to settlement in 1877. Custer, Deadwood, Buffalo Gap, Sturgis, and Crook City were booming as early as 1875 and 1876. The Lakota and their allies attempted to defend the Black Hills from the flood of outsiders. All during 1876, there were skirmishes between Lakota war parties and miners and settlers. The Lakota usually swiftly attacked incautious individuals or small groups away from the town or ranch on haying or woodcutting excursions (Sundstrom 1977; McClintock 1939).

The mining industry of western South Dakota quickly shifted from individual prospectors to heavily capitalized corporate operations. Yields from placer mining decreased within the first year. The remaining gold required hard-rock mining and stamp processing (pulverizing the gold ore). In 1877, the Homestake Mining Company was formed with capital provided by George Hearst and J.B. Haggin. Homestake purchased the claims of Moses and Fred Manuel and set up stamp mills for processing the rich ore of the Homestake Lode. The town of Lead sprang up around the early gold strikes in Gold Run Gulch and around Homestake's operations (Palais 1941; Parker 1981; Wolff 2005:297-307). Unlike most other mining towns in the Black Hills, Lead was a company town nearly from the first. By 1881, Hearst controlled the Homestake Lode, and with the establishment of a large stamp mill and company store in Lead, essentially controlled the economy of the Black Hills. By 1901, the company instituted cyanide processing of the gold ore. This allowed the company to mature into a stable, major employer and to dominate the US gold mining industry until it closed a century later.



*Figure 79. Red Spar Mine ruins, 39CU3436, 1975 (ARC photo).*

Other mining enterprises met with little success. The placer claims staked out during the gold rush years quickly played out, and the area's population dwindled as quickly as it had boomed. Attempts to mine silver and tin proved unprofitable (Wolff 2005:301). With the exception of a few spurts of placer mining and reopening old gold mines when the price of gold was exceptionally high, large-scale mining in the Black Hills was synonymous with the Homestake Gold Mine until the 1950s.

With the Cold War and new technologies, uranium was suddenly in high demand. Uranium deposits in the southern Black Hills, Slim Buttes, and Cave Hills were mined largely through "mom and pop" operations in the 1950s. Local landowners and claim holders dug out the easily reached yellowcake ore and trucked it to a processing mill in Edgemont through which it was sold, primarily to the US Atomic Energy Agency. By mid-1955, nearly 65,000 acres within the Slim Buttes and Cave Hills contained mineral claims. From 1962-66, Kerr-McGee and other mining companies strip-mined uranium-bearing lignite deposits in the Slim Buttes and Cave Hills. Another boom in the 1970s, precipitated by demand for nuclear power generation plants, led to interest in the Black Hills by large enterprises such as the Tennessee Valley Authority and Union Carbide Corporation. This boom was short-lived, because a major accident at the Three Mile Island nuclear plant in Pennsylvania in 1979 raised safety fears that crushed the market for uranium ore and halted large-scale uranium mining in the Black Hills and Harding County.

Other forms of mining took place sporadically in western South Dakota. Minor amounts of coal were mined in northwestern South Dakota in the early homestead days. Bentonite has been mined in the area south of the Black Hills for several decades. Small scale oil and gas extraction has taken place on the southern and western peripheries of the Black Hills and in Harding County. Oil and gas drilling have taken place in the Cave Hills since 1972 and continue to the present day. Large-scale oil and gas extraction is currently planned for many areas of northwestern South Dakota. Other minerals exploited on a small scale include mica, rose quartz, feldspar, and scoria. Large-scale gravel and cement production has been a significant economic activity in the Rapid City area for several decades.

### **The Ghost Dance Religion and Wounded Knee**

The overriding theme of Native American land tenure in South Dakota from the mid-nineteenth century on has been dispossession. Piece by piece, Indian land holdings were reduced and fragmented.

By 1890, conditions on the Lakota reservations were desperate (Hyde 1956; Mooney 1896). Congress had refused to approve adequate funding for the food and clothing supplies promised in the treaties and surrender agreements. The easterners who controlled the government demanded that the Indians grow their own food--never mind that practically no arable lands lay within the reservation boundaries. Earlier in 1890, the Great Sioux Reservation had been broken into smaller pieces and most of the former reserved lands opened to homesteading. Traditional Lakota religion was under assault. Not only had the Catholic and Episcopalian missions taken the children away to their boarding schools, but the Sun Dance--the great annual rite of Lakota religion--had been banned since 1883. (In fact, the Sun Dance probably continued to be held in secret throughout this period, but in a form much attenuated from the great summer gatherings of the past [Mails 1979:31].) The Sun Dance was central to both religious and social life in Lakota society. Lakota

winter-counts, pictographic records by which tribal historians recounted important events, illustrate the despair of the Lakota during the early reservation period. Around this time, the winter-counts simply stop, with the statement “after that, nothing happened.”

In this era of hunger, boredom, and despair, some Lakota leaders and their followers adopted a new religion (Hyde 1956; Mooney 1896). The Ghost Dance was a messianic religion that promised the disappearance of the whites and a return to the old ways. The religion swept through Indian reservations throughout the West. It reached western Dakota in 1889 after a delegation of Lakota returned from a visit to the new messiah, a Paiute named Wovoka. On the Lakota reservations, the Ghost Dance took on a more militaristic tone. An old belief--that sacred designs could protect the wearer from arrows or bullets--was adapted to the new religion. The “ghost shirts” and dresses worn during ceremonies were said to be bulletproof. White settlers in the western Dakotas and eastern Wyoming were terrified by the new belligerent attitude the dance and its paraphernalia seemed to express. Emotions ran high on both sides--the Lakota rejoicing in, and perhaps planning to hasten, the imminent destruction of the whites and the whites fearful of what they viewed as an imminent armed uprising. During the height of the scare in the last days of 1890, a force of Seventh Cavalry was dispatched to escort the camp of Bigfoot (Spotted Elk), followers of the Ghost Dance, into Pine Ridge Agency. While camped on Wounded Knee Creek, the soldiers surrounded the small tipi camp with their Gatling guns trained on the tipis. While the Indians were being disarmed the next morning, gunfire broke out. When the firing stopped, nearly 300 Indians were killed, many of them women and children. A trail of bodies testified to the fact that soldiers had pursued women and children as far as three miles from the camp (Mooney 1896). The Wounded Knee Massacre has thereafter symbolized the ugly side of Indian-white relations.

The events of the Ghost Dance scare took place along a line running from the bend of the Cheyenne east of its confluence with the Belle Fourche River to Pine Ridge (Mooney 1896:851). This line was part of the Indian trail connecting the Standing Rock Reservation with Pine Ridge. During the Ghost Dance disturbance, Lakota from the nearby reservations reportedly raided parts of eastern Custer County, taking horses and household goods and frightening the settlers (Tarbell 1912:427). Troops and arms were sent to the area to aid the settlers (Tarbell 1912); however, no real battles ensued. Three troops of the Fifth and Eighth Cavalry were stationed at the town of Buffalo Gap (Mooney 1896:850). Other troops under General Nelson Miles were headquartered at Rapid City. Troops of the Seventeenth Cavalry were stationed along the Cheyenne River to provide a buffer between the Indians then gathering in the Badlands under Short Bull and Kicking Bear and the eastern Black Hills settlements (Mooney 1896:850). Troops were also stationed at the mouths of Spring and Rapid Creeks, (Mooney 1896:850). Just as some Indians saw the uprising as an excuse to raid the white settlements, some whites saw it as an excuse to kill and terrorize Indians. A letter dated December 5, 1890, from Governor A.C. Mellette to H.M. Day, commander of the Black Hills National Guard illustrates the mood of the day in Buffalo Gap and the other white towns (Tarbell 1912:426-427):

I was pleased to get your message stating that in a skirmish three Indians had been killed by “our men” without loss to the whites. Be discreet in killing the Indians....If you feel your forces are sufficient, you can properly repel any assault upon property by the Indians, being careful, of course, not to do anything which would precipitate an attack by them upon unprotected settlers....I shall send you 200 more guns.

In northwestern South Dakota, settlers worried about attack from nearby Standing Rock Reservation. Sitting Bull was suspected of being a major influence behind this new threat, and the US military and Standing Rock Agent ordered his arrest (Mooney 1896). Sitting Bull was shot and killed while resisting arrest by Indian police; this started rumors that a group of angry warriors had left the reservation and were headed for the white settlements in Harding County. Several residents of the Cave Hills gathered at the Lewis residence, near present-day Harding, and constructed rifle pits and trenches in preparation for the Indian attack. Despite the panic, no conflicts arose in northwestern South Dakota. US Army soldiers were stationed on the east side of Slim Buttes through the remainder of the winter and inscribed their names on the sandstone outcrops around J B Hill (Hanson 1933).

With the Wounded Knee Massacre armed resistance to Euro-American expansion stopped, at least until the American Indian Movement takeovers of the 1970s.

### **Cattle Ranching and Cow Towns**

Although all of western South Dakota was included in the Great Sioux Reservation established by treaty in 1868, it was not long before most of the treaty lands were taken over for non-Indian use. With the Black Hills gold rush, the US military quickly gave up on trying to remove the influx of prospectors. By 1876, the Lakota had been removed from the Black Hills and by the following year an agreement removed the Black Hills from the reserved lands. By 1890, the remaining Indian lands were broken into several, much smaller reservations and the remaining land was opened to white settlement.

Grass as much as gold spelled prosperity for the newly opened territory of western South Dakota and eastern Wyoming. While the 1874 Custer expedition had reported pay dirt “from the grass roots down,” Walter Jenney’s scientific reconnaissance of the region the following year noted that, while there was gold from the grass roots down, there was more gold from the grass roots up, in the unsurpassed grazing of the area (Lee and Williams 1964). The first herd of Texas cattle was brought to the Black Hills in the spring of 1876, during the height of the gold rush, by Martin V. Boughton (Lee and Williams 1964:42-43). Boughton’s pioneering effort would soon draw the attention of other cattlemen.

Texas cattle drovers soon discovered the rich grasslands of the northern plains (Athearn 1965; Brisbin 1882). As the southern ranges began to fill up with homesteaders, the large cattle outfits ventured into the vast open grasslands of Dakota, Wyoming, and Montana territories. Buffalo hunters were rapidly pushing the remnants of the great herds north into Canada, leaving the American ranges vacant. The Texas drovers discovered that whereas cattle had lost as much as 30% of their weight on the Kansas and Texas drives, they actually gained weight on the northern drives (Athearn 1965; Pulling 1940). Ranchers from the famous XIT Ranch in Texas found that steers gained an average of 200 pounds more on the northern ranges than on the southern ranges (Gibson 1967). An investment in keeping cattle on the northern range year-round could provide a four- or five-fold return for investors (Athearn 1965). Cattle were abundant and cheap in Texas in the decades following the Civil War.

By the end of the 1870s, the Union Pacific rail-lines following the Platte River in Nebraska and Wyoming and the Northern Pacific in North Dakota and Montana opened up accessible, if not

proximate, shipping points for the northern ranges. The towns of Cheyenne and Rock River in Wyoming, Sydney, Nebraska, and Bismarck, North Dakota, were the main local beneficiaries of this trade. Later, cattle were trailed across the reservation to Pierre and Chamberlain for shipping. During the height of the "Beef Bonanza," Texas cattle purchased for four or five dollars a head could be sold for forty after a few months on the northern ranges (Athearn 1965). Herds increased rapidly on the northern grasslands, in part due to a series of unusually mild years. When the first shipment of Texas cattle reached the Black Hills in 1876, much of Wyoming was already cattle country. Between 1882 and 1886, Wyoming had 93 cattle companies, worth a total of \$51 million (White 1991:262). By 1880 big cattle outfits occupied most the area between the Black Hills and the Missouri River (Schell 1975:156). By 1890, there were approximately 4 million cattle on the western plains between Kansas and Montana (White 1991:222). By the spring of that year, the Black Hills Stock Association was organized (Athearn 1965; Lee and Williams 1964) to protect the interests of stockgrowers in the area.

In northwestern South Dakota, former Indian lands opened in 1877 attracted other large livestock outfits. Among these large operations were the Roosevelt Ranch ranges in the North Cave Hills, Abe Jones in the Slim Buttes, J. Grant in the Short Pine Hills, and the Empire Sheep Company near Buffalo (Hanson 1933). By 1884, some 700,000 to 800,000 cattle grazed these ranges (Lee and Williams 1964).

The Black Hills gold rush and treaties with the Sioux and Cheyenne requiring beef rations provided new and lucrative markets for beef besides the Chicago and eastern markets (Athearn 1965). This period also corresponded to a land stampede in eastern Dakota, the first "Dakota Boom," that further increased demand for beef. Between 1860 and 1880, the non-Indian population of Dakota Territory swelled from 829 to slightly over 100,000, most in the southeastern counties (Lee and Williams 1964; Schell 1975). Dakota settlers filed 22,061 homestead entries in 1883. This represented 39% of the total entries for the entire nation and was a record for all the western territories (Fite 1973). Rapid population growth followed in the next two decades, as well (Schell 1975, 1982).

Besides providing a new beef market, the reservations were generally open for grazing through lease arrangements, but not for homesteading. This had the effect of delaying the closure of the open range in the area as compared with other areas of the plains (Lee and Williams 1964; Pulling 1940). This attracted cattle ranchers into areas west of the Missouri near the large tracts of reservation land. By 1890, much of the White River country was home to large cattle operations.

The coming of the railroad further increased the attractiveness of the area to large cattle operators. In December of 1885 a branch of the Chicago and North Western Railroad known as the Fremont, Elkhorn, and Missouri Valley line reached the freshly platted town site of Buffalo Gap, providing the first rail service to the Black Hills. Other towns, including Fairburn and Hermosa were also platted by the Western Town Lot Company as it followed the tracks slowly making their way north toward Rapid City. Buffalo Gap remained the principal shipping point and connecting point to the interior Black Hills until the Elkhorn line reached Rapid City seven months later. When the Milwaukee Road completed a line through the White River country in 1907, the towns of Imlay, Scenic, Conata, and Interior became thriving cattle shipping centers.

In their heyday in the mid-1880s, Buffalo Gap and Belle Fourche were among the busiest cattle shipping points in the nation and were as wild as any cow towns in the Wild West (Clifford 1965; Parker and Lambert 1980; Schell 1975; Sundstrom 1977:196). According to one account, Buffalo Gap boasted four blacksmith shops, 23 saloons, 17 hotels and eating places, “two large sporting houses and a whole row of small ones,” four general stores, two drug stores, four Chinese laundries, three livery barns, one big hardware store, a dry-goods store, and a furniture store (Eastern Custer County Historical Society 1970). Another account states that of 142 businesses, 32 were saloons and honky-tonks (Clifford 1965:11). Fairburn was also a stage stop turned cow town, but it never attained the size of Buffalo Gap nor its reputation for lawlessness. Its boom period came later, from 1917-1927. Newcastle and Sundance sprang up as cow towns in the western Black Hills.

The cattle boom was over as quickly as it had started (Athearn 1965). Northern herds were reduced by as much as 75% in the big “die out” in the winter of 1886-87, although the Black Hills herds fared better than most (Lee and Williams 1964:154-56). With the realization that another bad winter could come any time, many cattle companies pulled out, rather than start over (Lee and Williams 1964; Pulling 1940). At the same time, western Dakota experienced a flood of homesteaders. Encouraged by good crop yields during the first half of the 1880s, the “honyockers” arrived in large numbers and began fencing the open range. Conflicts over fencing laws and reservation leases had ended unfavorably for the large ranchers. Beginning in 1881, a series of laws were enacted that regulated brands, droving, and trespassing onto private lands (Lee and Williams 1964:86-87). Although the Black Hills area was exempted from most of these laws, it was clear that the free-reining days of the Texas drovers would not last forever. A worldwide economic turndown had lessened both the demand for beef and the availability of capital to finance new ventures. By 1890, the days of the big cattle operations were waning. By 1900, sheep raising had replaced cattle as the leading agricultural activity in Montana and Wyoming. Meanwhile, the second Dakota boom, from 1902 to 1914, essentially closed the open range in that region. Small crop farms and mid-sized family ranches had become the focus of the western Dakota economy by the turn of the century. A severe blizzard in the Badlands in 1905 resulted in the loss of many cattle, dealing the final blow to many of the already failing cattle operations in the area.

### **Homestead Era Settlement and Attempts at Dry-Land Farming:**

The first Dakota population boom, from 1878 to 1887, was concentrated in that portion of the territory east of the Missouri River and in the Black Hills (Brooks and Jaçon 1994:14). The second boom, from 1902-1914, was concentrated in the former reservation lands and open range between the Black Hills and the Missouri (Brooks and Jaçon 1994:14). As with the corporate cattle industry, several factors led to the phenomenal number of claims filed in western South Dakota and eastern Wyoming during the homestead era (Brooks and Jaçon 1994; Kornfeld *et al.* 1989). Congress passed a series of homestead laws in order to promote settlement of the unoccupied public domain (Brooks and Jaçon 1994). The 1862 Homestead Act allowed any head of family to file on 160 acres of land either by buying at \$1.25 an acre or by living on and working the land for five years. The 1873 Timber Culture Act allowed settlers to take title to 160 acres provided 40 acres had been planted to trees and cared for 10 years. In 1878, the required number of acres was reduced from 40 to 10. The Dakotas and Wyoming were among several western territories covered by the Desert Land Act. This 1877 law allowed settlers to purchase 640 acres of land if it was irrigated within

three years of filing for the claim. The Enlarged Homestead Act of 1909 and the Stock Raising Homestead Act of 1914 provided for larger holdings in drier areas of the West.

The opening of millions of acres of reservation land to settlement under various cession and allotment acts provided an abundance of land in the area just as immigration from northern Europe was at a high (Ostergren 1983). Meanwhile, in eastern Wyoming, many former cowboys had started their own smaller ranches by homesteading the former open range. In addition, the promise of land ownership had an almost spiritual quality to both European immigrants and struggling American city dwellers (Fite 1985). At the end of the nineteenth century between 20 and 30 percent of the people in Dakota and Wyoming territories were foreign born (White 1991:187). In 1907, a railroad was built through the White River country, connecting Chamberlain and Rapid City, and the area was opened to homesteading. An influx of homesteaders joined the few cattle ranchers already living along the White, and by 1922 most of the area was taken up by homesteads.

The newly constructed rail-lines were heavily advertised both in the eastern states and provinces and in Europe. Railroads depended on both the immigrant fares and the growth of rural towns to recoup their sizable investment in the lines. A series of wet years in the early 1880s had produced impressive crop yields (Brooks and Jaçon 1994) and favorable markets encouraged would-be farmers. These rainy years also convinced many people that “rain follows the plow.” This was a popular theory that cultivated land somehow led to higher or more regular rainfall. The invention and mass production of farm equipment such as seeders, binders, threshers and combine harvesters also encouraged production of crops like wheat and corn. Some of these grains were used to feed the large numbers of cattle being shipped to eastern markets; however, the burgeoning cities and towns of the East and Midwest also provided ready markets for grain and other cash crops. The local press also promoted settlement. In July 1885, the Black Hills Journal asserted that stock-raising would inevitably be replaced by crop farming:

Land that only a few years ago was considered unfit for agriculture has been tried and found to produce abundant crops, and the fact is evident that stockmen will have to yield to farmers. There is no doubt that the stock interests have been of benefit to the country, but they are to agriculture what the prospector is to mining...merely the pioneers (*The Black Hills Journal*, Rapid City, D.T., July 17, 1885, cited in Nelson 1986:4).

The homestead boom was a period of town building in many communities. Towns that had started life as stage stations or railroad terminuses transformed into more stable and permanent communities. Churches, schools, fraternal lodges, and community centers were now housed in permanent structures. The towns gained a more peaceful atmosphere as the prospecting and cattle drives of the open range era gave way to family ranching and farming.

The first Dakota boom ended with the “great Dakota bust” of 1889-98. Crop failures and the economic panic of 1893 were the principal causes of the bust. Crop losses in the severe droughts of 1889 and 1894 were exacerbated by the newcomers’ failure to plant drought-resistant species and varieties. Soils were clayey and rainfall scarce west of the Missouri (Nelson 1986:11); even in favorable years, successful farming in the area required tillage techniques and crop varieties that most of the homesteaders were not familiar with. It gradually became clear that even the larger 640-acre homesteads were too small to support a family in the semi-arid West. The exodus included two groups of people: those committed to the idea of creating homes in the newly opened

lands and those who had filed claims with the intention of selling out at a profit as soon as a good price could be gained. Neither the speculation of quick profits nor the promise of land-ownership was validated by the experience of the 1890s homesteader.

The second Dakota boom lasted from 1902-1914. West of the Missouri, the boom was more intense from 1905-1910, when the West River population more than doubled (Brooks and Jaçon 1994:20; Schell 1975:256). Most of the Great Sioux Reservation was opened to homesteading in 1890 under a lottery system (Nelson 1986:18). As economic conditions improved, a new wave of homesteaders moved into South Dakota to claim these lands. The dry farming movement was gaining force at this time and many would-be farmers thought they could overcome the perennial problems with drought by adopting the experimental methods promoted by the proponents of “Scientific Soil Culture” (Brooks and Jaçon 1994:20; Hargreaves 1957).

Attempts to extend farming into the West River area of South Dakota led to wide-spread crop failure--and for some settlers threatened starvation--in 1910-1911 and subsequent years. A promotion for the 1910 Buffalo Gap Fair suggested wryly that area residents attend the fair and “see what can be produced under compulsory system of DRY farming” (Eastern Custer County Historical Society 1970). The problems inherent in trying to farm west of the Missouri were compounded by a change in the homestead system that used a lottery to allocate homesteads (Brooks and Jaçon 1994:9). Although homesteaders still chose their claims, those whose lots were chosen later found that most of the good land was gone. This meant that farmers had even less control over the conditions under which they were trying to grow crops. The lack of drought-resistant crop varieties and the inadequate size of homesteads were still problems, as well.

The main period of town building in northwestern South Dakota took place after 1910. As family ranches replaced the large outside cattle interests, towns like Buffalo and Camp Crook sprang up as market centers. Small-scale lignite coal mining was common in northwestern South Dakota during the early 1900s, usually providing fuel for area homesteads.

After 1911, the search for solutions to the practical problems caused by drought, deprivation, and depopulation demanded attention (Nelson 1986:156). Both the government and the railroads attempted to alleviate conditions for the western Dakota homesteaders. In 1912, legislation passed Congress that allowed settlers to defer payment on their claims. The railroads offered free passage for relief supplies; however, little actually materialized due to lack of an organized relief effort (Nelson 1986:141). The passage of relief legislation in the 1910s stood in contrast to efforts to appropriate aid for destitute homesteaders in the 1890s (Fite 1973:262). This reflected a shift in attitudes away from blaming the would-be farmers for their failures to admitting that the region had severe limitations as farm country.

Farmers’ prospects were also improved with the increased demand for food products during World War I and with the passage of farmer-friendly legislation at the federal and state levels in the later 1910s. Although attempts to create state-owned elevators and mills failed, a rural credit law enacted in 1917 allowed state loans to farmers. The Federal Farm Loan Act and Federal Warehouse Act both passed in 1916. A herd law passed in 1911 forced cattlemen to pay for damage caused by their livestock (Schell 1975:257). The South Dakota Agricultural Extension Service was created in 1915 to provide technical information to farmers. Local farmers’ cooperatives were organized to market farm products and exchange technical information (Nelson 1986:158).

Provisions for state-sponsored crop hail insurance passed the state legislature (Schell 1975). The South Dakota State Grange and other rural political organizations also gained strength during this period. Such organizations, together with the government-sponsored extension and 4-H clubs, were important social institutions in the area for several decades.

In spite of these efforts, the next two decades were to be the worst yet for western Dakota farmers. The post-war drop in market demand caused a farm depression. In rural areas of the state, farm foreclosures, bank failure, hunger, and loss of population were the rule. By 1924, South Dakota had the highest per capita debt in the nation (Schell 1975:276). The new rural credit system failed (Fite 1985). Nation-wide economic depression, grasshopper infestations, drought, and severe winters made bad conditions worse in the early 1930s. By December of 1934, 39% of the state's residents were on public assistance, the highest percentage of any state at any time in US history (Schell 1975:292). The state lost 7% of its population in the 1930s (Schell 1975:292). The western counties were especially hard hit (Schell 1975:282).

Although government relief efforts would follow, farming would never again dominate western South Dakota's economy. By 1950, farm population in the High Plains states had dropped to 1.7 million from a peak of 2.6 million in 1920 (White 1991:437). The farming experiment bowed to the industry that had first proved so profitable in the area: cattle ranching. In 1935, the public domain was closed to homesteading.

### **Family and Corporate Ranching**

The first ranches in western South Dakota were established in the Black Hills soon after it was opened to non-native settlement (Lee and Williams 1964). Many of these early ranches began as homesteads or squatters' claims, gradually increasing in size through a process of buying out other homesteaders and having relatives file on adjacent claims. The Stock Raising Homestead Act passed in 1916 allowed the acquisition of 640-acre parcels for stock raising. While this did not constitute an economically viable "spread" in the dry west-river country, it made the process of expanding ranch holdings easier. The small ranchers also took advantage of open range to pasture their cattle and horses.

During the 1880s, the rise of the "cow capitalists" overshadowed the smaller family ranches in western Dakota and eastern Wyoming. In less than a quarter century, however, the large operations had largely disappeared, leaving the smaller ranches to regain their place in the economy of the area. In fact, small ranch operations always outnumbered the big outfits and were not threatened economically by them, due to the high demand for beef and horses during the gold rush and early homestead eras.

Several trends marked the history of ranching in the area. The first was a process of consolidating homesteads into larger holdings. This process was facilitated by the failures of dry-land farming, speculators filing on land which they had no intention of farming, and the exit of many of the big cattle driving operations after the heavy losses of 1886-87. In general, ranchers fared better than farmers during droughts. After all, bison had thrived for thousands of years on the West River grasslands, while there is little evidence that farming had ever been a viable subsistence base in the area, even when farming tribes from the eastern river valleys colonized it.



*Figure 80. Ruins of a corral, 39CU4121, 2012 (L. Sundstrom photo).*

A second trend was toward specialization in cattle and feed crops. Many of the ranches in the Black Hills started as horse breeding operations or diversified livestock operations. The horse-breeders later turned to cattle for their economic mainstay. The greater forage requirements of horses made them less profitable when free range was no longer available. In addition, the availability of tractors and automobiles had greatly reduced the demand for horses. When the open range “fenced up” Black Hills ranchers sold out their horse breeding businesses and ran only cattle.

After the crop failures of the initial homestead era, the remaining ranchers and farmers turned increasingly to grain farming. Alfalfa was introduced in the area around the turn of the century and gradually gained importance as a cash and feed crop (Brooks and Jaçon 1994:22). Grain elevators were built to accommodate the trend toward grain farming. Besides discouraging further attempts at farming, the 1910-1911 drought had made additional property available to the settlers who stayed. Anything left behind was appropriated: buildings, crops, forage, and furniture. Often, this allowed those who stayed to pay up the back taxes and get title to the abandoned land (Nelson 1986:132). In this way, sufficient holdings for viable ranching operations could be obtained.

The third trend was away from huge cattle operations to family and smaller corporate ranches. After 1886-87 ranching became a conservative, not a speculative, activity (Pulling 1940:504). With the closure of the open range, ranching became a more capital-intensive industry. Ranchers had to invest in land, reservation or government-land leases, and livestock feed. At the same time, the arrival of the railroads made the long cattle drives unnecessary. This made marketing of beef and livestock easier and produced a more desirable product, as well. The dry, stringy beef of earlier

times went the way of the Texas longhorn and the cattle drive. The opening of much of the Great Sioux Reservation to settlement in 1890 also favored the small rancher. Huge tracts of reservation land were no longer available for the large herds; however, smaller ranges left after allotment and homesteading were more than adequate to the needs of the smaller ranches (Pulling 1940).

The family ranchers who stayed through the uncertain times of the cattle barons, the droughts and severe winters of the 1880s and 1910s, and the economic collapse of the 1930s form the nucleus of agricultural communities in the area today. Area agriculture seems to have found its economic niche in family ranching. Many of the ranches in western South Dakota have been in operation for over a century.

### **Other Industry**

The Black Hills logging industry began with the gold rush. Mines and stamp mills consumed vast amount of timber to run the steam-powered stamp mills and to construct mine tunnel supports. Until 1891, use of Black Hills timber was unregulated, and many areas were completely stripped of trees. Concern over the environmental consequences of such clear-cutting led Congress to pass the Forest Reserve Act of 1891. This had little effect in the Black Hills because the residents, used to taking whatever timber they required from public domain lands, simply ignored it. The Black Hills Forest Reserve was established in 1897 and with it planning for sustainable timber harvests. The first federal timber sale, Timber Case No. 1, allowed Homestake to cut timber on a permit basis, and set the basic regulations for subsequent timber sales on all national forests (Wolff 2005:308).

Federal policy thereafter required the national forest reserves to permit logging. With the fast-growing ponderosa of the Black Hills providing an easily renewed supply of timber, this allowed continued growth of the logging and sawmill industry that had grown up around the gold rush and early towns. Each Black Hills town supported at least one sawmill, and many had several (Linde 1984). Smaller logging and sawmilling operations also developed in parts of Harding County on the Custer National Forest, established in 1904. The local sawmills provided a significant source of jobs in logging, sawmill operations, and transportation of lumber and wood by-products. By the 1980s, cheaper imported lumber and the entry into the region of international corporations such as Pope and Talbott put most of the small family sawmills out of business.

Tourism is South Dakota's principal industry today, with such Black Hills attractions as Custer State Park, Mount Rushmore, Historic Deadwood, the Sturgis Motorcycle Rally, and Crazy Horse Monument, its main drivers. The western South Dakota tourist industry has its roots in the adventurers who ventured into the area during the Gold Rush and cattle baron eras. In the 1890s, Hot Springs, Cascade Springs, Sylvan Lake and Spearfish Canyon were home to successful resort hotels and spas. With improved rail connections in 1907, the tourism industry expanded throughout the Black Hills. Wind Cave National Park was established in 1903, soon followed by the adjacent Custer State Park game preserve. By the 1920s, Deadwood was offering visitors reenactments of its Wild West beginnings. Impatient with the draw of natural attractions, State Historian Doane Robinson approached Gutzon Borglum with the idea of making a huge sculpture in the Black Hills as a tourist attraction (Wolff 2005:311). Borglum began carving Mount Rushmore in the late 1920s. President and Mrs. Coolidge vacationed in Custer State Park in 1927. The publicity generated by their visit, along with better cars and highways, turned western South Dakota into a

major tourist destination. While the Great Depression devastated farming, sheep raising, and cattle ranching, the tourism industry actually benefited in many ways from the economic collapse. Federal relief efforts concentrated money and personnel on projects such as building campgrounds and roads in the state and national parks, developing caves and hiking trails for tourism, creating reservoirs for boating and fishing, and completing Mount Rushmore.

### **The Rise of the Federal West**

Approximately half of western South Dakota is federal lands and Indian reservations. The pattern of federal land acquisition began with the taking of the Black Hills in 1877, which was soon followed by other legislation that broke up the remaining portion of the Great Sioux Reservation. With the Dawes Act of 1887, reservation lands were divided into private holdings and “surplus” lands made available for homesteading. At this time, political philosophy viewed the federal government as a temporary custodian of public lands. The role of the federal government was to put these lands into the hands of individual private holders. This philosophy soon gave way to a new view of government land holdings: government agencies were to hold large tracts of land in the West for the benefit of the citizenry as a whole, rather than converting lands to private holdings (White 1991:391-430). In western South Dakota, the Black Hills forest reserve was established in 1897, largely to protect the forests from overharvesting. Custer National Forest was established in 1905, Wind Cave National Park in 1903, Fossil Cycad National Monument in 1922, Badlands and Jewel Cave National Monuments in 1929, and Mount Rushmore National Monument in 1933. Beginning in 1934, a New Deal program operated by the Resettlement Administration purchased failing homesteads in the West and helped resettle families in more promising locations. These former homesteads were returned to grass and formed the nucleus for various national grasslands. In western South Dakota, these include the Buffalo Gap National Grassland, administered by Nebraska National Forest. The Grand River National Grassland, formerly a part of Custer National Forest, now is one of two large units designated Dakota Prairies National Grassland in 1998. The other unit lies in western North Dakota.

Congress passed legislation in 1902 establishing the Bureau of Reclamation to coordinate large irrigation and water management projects. Among the first projects completed were the Belle Fourche Irrigation District, the Belle Fourche Reservoir, and Orman Dam. This agency also initiated construction of Deerfield Lake in the central Black Hills, which was completed in the 1930s. The Bureau of Reclamation finished Shadehill Reservoir on the Grand River in 1951. The Bureau of Land Management was formed in 1946 from the General Land Office and the US Grazing Service, largely to manage unclaimed rangeland and to administer mining claims under the 1872 Mining Law. The final expansion of federal holdings took place during World War II, when the Badlands Bombing Range, the Black Hills Ordnance Depot, and Ellsworth Air Base were established.

### **The Era of Federal Economic Relief Programs: The New Deal**

As noted above, the Great Depression of the 1930s followed a collapse of the markets for livestock and grain in the 1920s. Both downturns hit South Dakota especially hard. With 39% of the state’s residents on public assistance, and the western counties rapidly losing population, South Dakota was facing unprecedented economic disaster (Schell 1975:292).

Relief came in the form of various federal programs, including works programs such as the Civilian Conservation Corps and the Works Progress Administration. During the 1930s, Civilian Conservation Corps camps were established throughout the nation. The Civilian Conservation Corps organized massive forces of unemployed young men to work on a variety of forest- and range-related projects (Alleger ca. 1935). Many of South Dakota Works Projects Administration endeavors promoted tourism in the state. These included tourist guidebooks, construction of reservoirs and recreational facilities, and collecting Indian folk lore.

## **World War II and the Post-War Era**

World War II had both temporary and long-term impacts on the economy of South Dakota. A major munitions storage facility, the Black Hills Ordnance Depot, was built in 1942 near Edgemont. Some 800 earth-covered magazines, locally referred to as “igloos,” camouflaged their contents from air attack. The restricted area containing the magazines covered 19,000 acres. During the construction phase, the project employed nearly 6000 workers. The newly built town of Provo or Igloo provided housing for the facility’s employees, as well as a school, hospital, community center, and swimming pool. The munitions facility was maintained throughout the 1950s and most of the 1960s, employing around 700 people. During the Korean Conflict, this number increased to about 1300. The primary mission of the Black Hills Ordnance Depot was to serve as a reserve depot for the receipt, storage and issue of ammunition including propellants and components of guided missiles and chemical ammunition. It was closed in 1967 and the dwindling town was abandoned. Many of the town’s buildings and the munitions magazines today form what is undoubtedly South Dakota’s largest archaeological site. The site is used today for livestock grazing, but traces of toxic chemicals render it unsuitable for other uses.

The Badlands Bombing Range was another temporary, but long-lived, war project. In 1942 the US government leased 342,000 acres on the Pine Ridge Indian Reservation for use as an aerial gunnery and bombing range. Over the next 34 years the range was used intermittently by the US Air Force for various activities including aerial gunnery and bombing practice and by the South Dakota National Guard as an artillery impact range. Since the 1960s, several projects have been organized to remove unexploded or contaminating ordnance from the range; efforts to clean up the range continue today.

The cavalry base at Fort Meade continued in service during World War II, but mounted troops were in very limited demand by then. During the war German prisoners of war detained there helped to convert the facility to a large Veterans Administration hospital. This hospital first served as a psychiatric facility, but later expanded its mission to treat a variety of war injuries. Today, the hospital provides general medical and psychiatric care, including in-patient rehabilitation and long-term nursing care, to veterans of all ages and administers a dozen out-patient clinics in the region.

The most important change of the war period was the establishment of Ellsworth Air Force Base just outside Rapid City in January 1942. The Army Air Corps sought a base location far from the coasts and population centers that would provide the increasingly important air divisions with access to both the Atlantic and Pacific theaters. Western South Dakota fit the bill. By mid-1943, personnel assigned to the new B-17 training base had doubled Rapid City’s population (Wolff 2005). The army air base closed for a few months following the end of the war, but was reopened

in 1947 as a base for the newly-established Air Force. The primary unit assigned to Rapid City Air Force Base was the new 28th Bombardment Wing flying the B-29 Superfortress. Over the years, the mission and aircraft changed as new national security challenges and technologies came along. The most significant of these changes was the Strategic Air Command conversion of the base to add missile command activities to the existing strategic bombardment command in 1960. The base was headquarters for the 821st Strategic Aerospace Division, overseeing first Titan I intercontinental ballistic missiles, and later the Minuteman ICBMs. Ellsworth Air Base, as it came to be called, is one of the most historically significant Cold War era sites. The base was a showcase for various bomber and missile programs throughout this period. In 2005, the base narrowly survived closure as recommended by the US Congress's Base Realignment and Closure commission. Ellsworth is host base for the 28th Bomb Wing and is an emergency landing site for the National Air and Space Administration space shuttle.

### **The Pick-Sloan Plan and the Transformation of the Missouri Valley**

Water-control projects also changed the landscape of post-war South Dakota. Angostura and Pactola reservoirs were constructed under the Pick-Sloan Project, the Missouri Basin portion of the Flood Control Act of 1944 (Wolff 2005:313).

Through the relentless efforts of US Senator Francis Case, Congress approved the Pick-Sloan Plan as part of the 1944 Flood Control Act (Miller 2005:212). Pick-Sloan was an odd marriage of two sets of water development plans: one from the US Army Corps of Engineers and one from the Bureau of Reclamation. The prolonged Congressional debate that led to the Pick-Sloan compromise foreshadowed conflicts still plaguing the western states today: state versus federal control over waterways and conflicts between upstream and downstream states over water use. In the end, Congress left it to the agencies to iron out questions of jurisdiction and budget late in 1944. The focus of this massive combined project was a series of hydroelectric dams along the Missouri River in both Dakotas and Montana. The four dams in South Dakota (Gavin's Point, Fort Randall, Big Bend, and Oahe) flooded some half-million acres of land in South Dakota, much of it on Indian reservation lands. The tribes lost their best agricultural and grazing lands, and hundreds of families were forced to relocate (Lawson 1994). The dams and reservoirs were to provide flood control, irrigation, pollution and sediment control, and improvement of wildlife habitat, as well as generating electricity. Of these intentions, only the last one was realized. Besides the major dams, the project included smaller dams on tributaries such as the Grand and Cheyenne rivers and levees and irrigation facilities throughout the Missouri Basin. The giant reservoirs created by the hydroelectric dams are an important addition to South Dakota's tourism economy.

### **Environmental Setting**

All settings.

### **Temporal Boundaries**

1850-1950

## **Spatial Boundaries**

Entire state.

## **Property Types**

Homesteads, trails, roads, railroads, stage stations, whistle stops, mines, irrigation ditches and dams, industrial sites, towns, schools, churches, community halls, tourism-related sites, youth camps, ranches, line camps, sheep camps, sawmills, wells and waterworks, Civilian Conservation Corps and Works Progress Administration-related sites, military sites, scatters of historic artifacts.

## **Locational Characteristics**

Entire state.

### **Condition**

Varies.

## **Voids in Research**

Relatively few sites dating to the historic period have been excavated or otherwise investigated. Projects have tended to focus on military and industrial sites, such as forts, fur trade posts, a brick kiln, and the townsite of a resort. Few homestead sites have been excavated or otherwise studied, despite their importance to understand the non-Native settlement of the state.

## **Research Topics**

1. What railroad companies were in operation or planned operations?
2. What effect did railroads have on settlement patterns in South Dakota?
3. How did the timing of railroad completion affect the history of the state?
4. What was the railroad's effect on the logging, mining and tourism industries in the Black Hills?
5. Where were the first settlements? Illegal mining settlements, homesteads, ranches?
6. Can a basic style of architecture and/or lay-out be assigned to the early ranches? To the homesteads?
7. What styles of architecture found in South Dakota can be associated with the various ethnic groups? Can these different architectural styles be determined from archaeological sites, when typically only foundations remain?
8. What industries were introduced in the state? How did each fare?

9. What were the effects of the Great Depression?
10. What changes occurred in farming and ranching techniques over time?
11. What were the basic settlement patterns in different parts of the state: Indian reservations, railroad towns, mining camps, irrigation projects, etc.?

## **Research and Management Goals**

Many different kinds of sites date to this period. Preservation efforts should reflect this variety, because data from both large and small, simple and complex sites can help tell the story of this era. Sites should be carefully evaluated in regard to their potential to fill in parts of the state's history that are not part of the written record.

## **National Register Listings**

39BF33, 39BF34, 39BF35, 39BF36, 39BF37, 39BF38, 39BF39, 39BF53, 39BF56, 39BF57, 39CO154, 39CO155, 39CU522, 39HU89, 39HU90, 39HU93, 39HU96, 39HU96, 39HU102, 39HU107, 39HU108, 39HU111, 39HU114, 39HU117, 39HU203, 39HU204, 39HU205, 39HU206, 39HU210, 39HU218, 39HU220, 39HU242, 39HU243, 39JK84, 39LA3000, 39LM1, 39LM2, 39LM22, 39LM33, 39ML135, 39LM136, 39LM137, 39LM224, 39LM225, 39LM247, 39MD3002, 39ST93, 39ST94, 39ST95, 39ST96, 39ST97, 39ST98, 39ST101, 39ST106, 39ST202, 39ST222, 39ST223, 39ST227, 39ST234, 39ST235

## **Archaeological Regions**

All regions.

## **Sites**

See lists for individual regions.

## V. SUBCONTEXTS

Thirteen subcontexts are outlined here: rock art/petroglyphs, historic rock inscriptions, rock shelters, stone circles, alignments, bison jumps and other animal kill sites, cairns, petroforms or boulder effigies, prehistoric quarries, eagle-trapping pits, mounds, sacred sites, and burials. These topics are classified as subcontexts because they should be studied in relation to a specific period or cultural affiliation. Given the current state of knowledge, however, it is not possible to assign all sites within these subcontexts to particular periods or cultural groups. Some of the topics, such as quarries and stone tool technology, cover the entire span of human history and may include all archaeological cultures in South Dakota.

### **Prehistoric Rock Art or Petroglyphs**

#### **Overview**

Each area of South Dakota contains a distinctive body of rock art. The state has about prehistoric 303 rock art sites in all. Most rock art sites are in the Black Hills, the North Cave Hills, and along the Missouri River. A few more sites occur around Lake Traverse on the Minnesota border.

#### **The Black Hills**

For purposes of this discussion, the term “Black Hills” includes the Black Hills archaeological region and adjacent portions of the Belle Fourche River and South Fork of the Cheyenne region in the foothills zone. The Black Hills have the widest variety of rock art of any of the four rock art regions. Both painted and carved (incised, pecked, or abraded) forms occur there. The Black Hills and adjacent regions have the widest variety of rock art of any of the four rock art regions. Both painted and carved (incised, pecked, or abraded) forms occur there. The carved rock art falls into three main traditions: Pecked Realistic Style, Pecked Abstract Style, and Incised Tradition (Sundstrom 1984, 1993a, 2004a). The Incised Tradition includes several styles. The best researched of these are the Ceremonial (or Shield-Bearing Warrior) style, the Plains Biographic style and the Vulva-Groove-Hoofprint style (Keyser and Klassen 2001; Sundstrom 2004a). Painted rock art in the Black Hills includes three styles: Vertical Series, Painted Realistic, and Dark Red Geometric. Although absolute dates are lacking for most Black Hills rock art, the various styles occur in a definite sequence relative to each other. Pecked Realistic seems to be the oldest style, although Dark Red Geometric may rival it for age. Pecked Realistic and Dark Red Geometric are older than Pecked Abstract. It appears that Pecked Realistic precedes Dark Red, but the two styles do not occur at the same sites, so there are no cases of direct superimposition (placement of one type of rock art over another). Painted Realistic and Vertical Series seem to come next in the sequence. They certainly are younger than Pecked Abstract, and generally appear older than the earliest of the Incised Tradition styles. At one Black Hills site, a shield-bearing warrior petroglyph overlies an earlier painted figure. In addition, painted rock art occurs high up on the cliff face, while Incised Tradition rock art is limited to surfaces exposed later as erosion cut away the underlying sediments.

Pecked Realistic rock art shows scenes of communal hunting, including the details of equipment and weapons. Because the hunters use atlatls (spear-throwers) rather than bow and arrow, this art is dated to the Archaic period. Many of the panels are stranded high above the current stream terraces and the petroglyphs are very heavily weathered, suggesting a date of several thousand years for this rock art style. Incised Tradition rock art is associated with movements of Eastern Woodlands populations into the area beginning about 2000 years ago. Because the Pecked Abstract style falls between the other two carved styles, it is assumed to date sometime between about 5000 and 2000BP, with the Pecked Realistic style preceding it from about 8000 to 5000 years ago and Incised Tradition following it from about 2000 years ago through the Protohistoric period (Sundstrom 2004a). The Painted Realistic and Vertical Series styles appear to be roughly the same age, although Vertical Series may have persisted longer. Painted Realistic includes pictures of atlatls, again suggesting an Archaic age.

Not all rock art in the Black Hills fits neatly into these style categories. Individual glyphs and entire sites sometimes do not conform to the better-defined styles. The ages of these panels and sites are more difficult to estimate, because they do not show definite patterns of erosion, superimposition, and subject matter.

Pecked Realistic rock art, as the name implies, was made by hammering the surface of the cliff either directly or with a chisel stone to remove tiny dents in lines and solid shapes. The resulting images would have stood out clearly against the darker mineral crust (weathering rind) that covers the exterior cliff faces; however, most of the images are now stained the same color as the surrounding rock by oxidation of the fresh surface exposed when the images were pecked through the weathering rind. This rock art shows detailed, naturalistic scenes of hunting and related activities, including ceremonies and something like a tug-of-war between groups of men. The scenes show men, women, and children all working together to drive deer and other game into stand-nets, where the animals were killed with spears, atlatl darts, or clubs. Some of the humans wear headgear with antlers or deer's ears. This may indicate an actual practice or may denote people who used spiritual powers to lure the animals into the traps. In a few scenes, humans are shown in a state of transition between human and animal form, as is typical of hunt shamans. Very few of the sites with Pecked Realistic rock art have associated archaeological deposits. Instead, the stream terraces that once provided access to the surfaces on which the rock art can be seen today were completely removed by wide-scale erosion sometime after the carvings were made.

Pecked Abstract rock art typically includes complex, meandering combinations of wavy lines, spirals, concentric circles, ovals, rows of dots, crosses, branching lines, and the like. It was made by hammering the cliff surface directly with a stone. The lines are wider, less precise, and less oxidized than those in the earlier Pecked Realistic style. Pecked Abstract rock art contains no pictures of objects that can be dated. Although some sites with this style of rock art had intact deposits below the panels, most were dug up by looters long ago. Nevertheless, a few sites do have potential for buried deposits that may one day help to date the rock art.

Incised Tradition rock art is made up of incised, scratched, or grooved and abraded figures. It combines both naturalistic images of animals, people, and objects, and nonrepresentational designs. It includes a few examples of the shield-bearing warrior motif common in much pre- and protohistoric northern Ceremonial tradition Great Plains rock art. This depicts individual warriors with full-body shields, sometimes in association with pictures of animals such as bears and bison.



*Figure 81. Pecked Realistic rock art panel detail, 39FA395 (L. Sundstrom photo, 2006).*



*Figure 82. Detail of Pecked Realistic panel, 39FA395 (L. Sundstrom photo, 2006).*



*Figure 83. Pecked Abstract rock art panel, 39FA684 (L. Sundstrom photo, 2016).*



*Figure 84. Pecked Abstract rock art panel, 39FA877 (L. Sundstrom photo, 2006).*

Later versions of this style include some “biographic” elements—that is, they show the warriors in action. Because the large body shields were abandoned soon after horse warfare became widespread in the region, this rock art is dated to the period from about 1100 to 1800 CE. After that time, a more fluid, narrative style develops from the old Ceremonial style. Known as Plains Biographic, this typically shows scenes of battle or of individual deeds in warfare and horse-stealing. Plains Biographic rock art is the archaeological antecedent of painted hides and ledger book drawings. The warriors who made Biographic tradition art in all media employed a set of conventions that expressed in detail a narrative represented by the pictures. For example, in Biographic art, action typically flows from right to left, with the winner of the skirmish on the right side of the scene.



*Figure 85. Incised Tradition rock art, 39CU3431 (L. Sundstrom photos, 2005).*

Another Incised Tradition style dates to the Late Prehistoric and early Protohistoric period. This comprises deeply ground vulva and ungulate track designs, along with large banana-shaped grooves. It appears that this was a women’s art tradition, with the grooves and ground designs having resulted from women sharpening bone hide working and decorating tools against the sandstone cliffs. A few depictions of people are associated with the tracks, vulvas, and grooves; where sexual characteristics are included, these represent women.



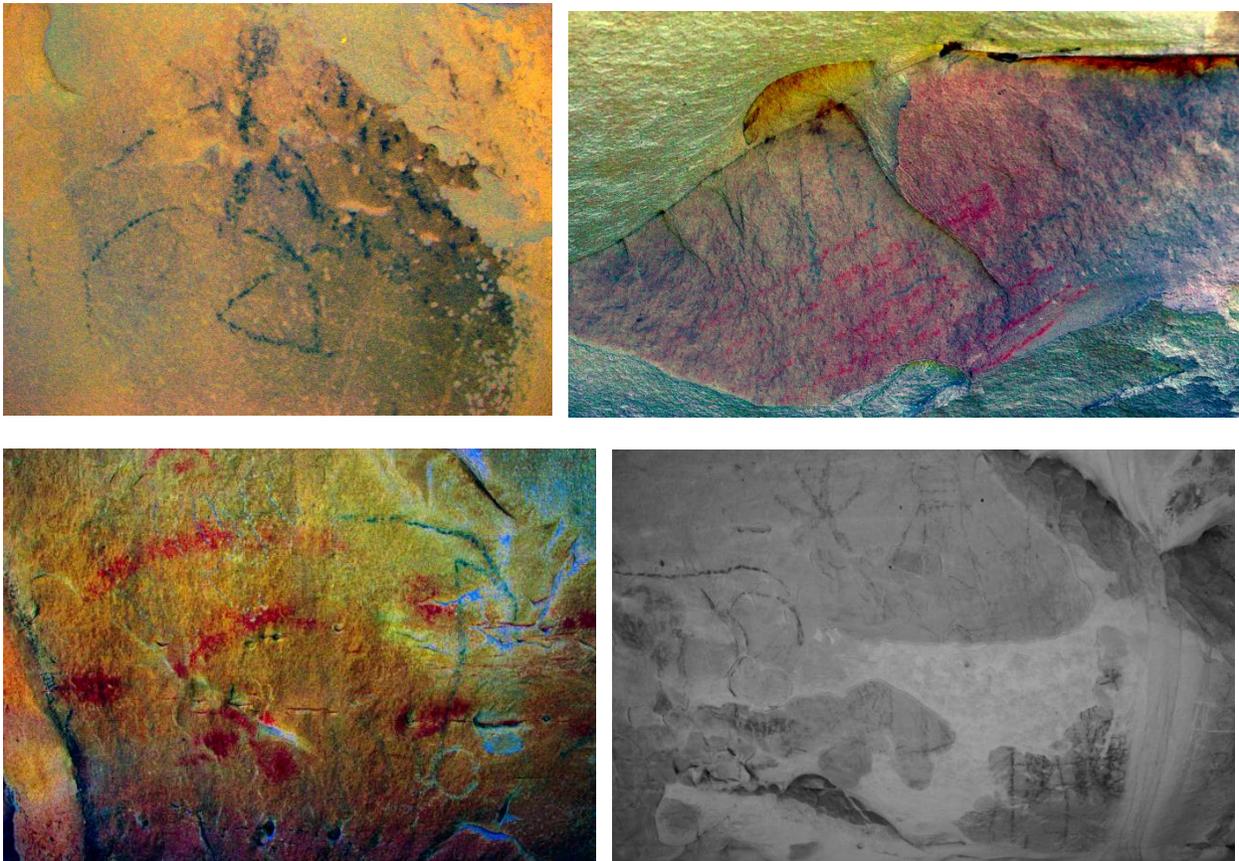
Figure 86. Incised rock art with lines, grooves, and vulvas, 39FA696 (L. Sundstrom photo, 2006).



Figure 87. Incised Tradition rock art panel depicting a woman and several vulvas, 39FA1622 (L. Sundstrom photo, 2006).

The five examples of Dark Red Geometric rock art are in the southern and central Black Hills. A branched line, a circle with a diagonal line through it, a series of parallel oblique lines, and a forklike design are all that remain of this old painted rock art style. Its age is unknown, other than that it preceded the Pecked Abstract style. Two sites with this kind of rock art contain extensive buried deposits that may help in determining its age.

Painted Realistic rock art occurs in only one canyon in the southern Black Hills. It shows bison, deer, humans, atlats, and a strange human-animal figure. These were painted in wide black or dark blue pigment and were filled in with more pigment. A few areas, such as rump patches and eyes were left unpainted. A second painted style in the same area has smaller, more detailed animals that appear to have been painted using a brush. The animals (bears and deer) are black and have been superimposed by red painted figures, such as darts and dart points. One of the sites with painted rock art contains intact buried deposits that may one day provide information about its age.



*Figure 88. Painted rock art from the southern Black Hills. Upper row, 39FA1190; lower row, 39FA316. Images enhanced using D-Stretch® software or infrared imaging (L. Sundstrom photos, 2005 and 2014).*

Vertical Series rock art is made up of small, complex geometric designs that are sometimes arranged in columns of repeated figures. Only five or six Vertical Series sites are known in the Black Hills, but others occur throughout the northwestern Great Plains. This style of rock art probably dates to the last thousand years or so, but no secure estimates are available.

The majority of recorded rock art sites in the Black Hills are in the Hogback zone of the southern uplift; however, sites also occur in the eastern Hogback and in the Bearlodge or northwestern Black Hills of Wyoming. Two sites have been recorded in the granitic interior zone and one in the Limestone Plateau. Sites may consist of isolated glyphs or large cliffs covered with designs. Many of the larger sites contain overlapping layers of rock art of different ages and cultural affiliations.



*Figure 89. Cave Hills rock art: shield-bearing warrior, 39HN162; bison skull, tracks, and woman, 39HN160 (L. Sundstrom photos, 2003).*

### **Cave Hills**

Although rock art sites are sprinkled throughout the sandstone buttes region, the main concentration is in the North Cave Hills. Rock art in this area is limited to Incised Tradition petroglyphs. Traces of paint on some of these show that they were once painted, as well. Shield-bearing warriors, Plains Biographic style scenes, and Vulva-Track-Groove rock art are all abundant in the rock shelters and on the cliffs of the Cave Hills. A few small rock shelters contain only hoofprints with perhaps one or two vulvaforms. Other sites have one or two vulvas or hoofprints near a panel of Ceremonial or Biographic rock art. The Ceremonial and Biographic styles are more varied and more extensive than they are in the Black Hills. Shields, shield-bearing warriors, V-necked humans, and boat-shaped animals are all well represented in Cave Hills rock

art. A single incised panel resembles the Vertical Series designs that occur as painted panels in the Black Hills. All rock art in this area is estimated to date within the last 2000 years. Many of the glyphs illustrate activities, beliefs, or sacred stories known from ethnographies. For example, some sites have pictures related to eagle trapping, and one has pictures of a Lakota Elk Dreamer ceremony (Sundstrom 2004a).

### **Missouri River**

The Missouri River area contains granite and quartzite boulders with petroglyphs of human hands, feet, and dimple-like figures sometimes referred to as cupules. These petroglyphs were made by deeply pecking or cutting out the shape and then laboriously grinding it smooth. One large limestone slab has a line of deeply ground human footprints resembling tracks in mud. The boulders contains between one and four handprints and/or between one and dozens of cupules. Many of these petroglyph boulders were moved from their original locations and placed in museums or parks. A few others were inundated by the lakes created by the large hydroelectric dams on the river. About 22 petroglyph boulders have been recorded or reported from the Missouri River area. Besides the typical hand- and footprint designs, some have deeply ground bison or deer tracks and one has a bird-track design. A now inundated boulder was reported to have the pecked outline of an elk and some rayed circles on it.



*Figure 90. Glacial erratic boulder with handprints and “dimples,” Mobridge, South Dakota (L. Sundstrom photo, 2015)*

## **Lake Traverse Area**

This area also contains large glacial erratic boulders with deeply ground designs. The most common design in this region is identified ethnographically as a thunderbird track. Several such boulders are recorded for the Traverse des Sioux area. A sacred story attributes their creation to thunderbirds landing atop the higher hills there and pressing their tracks into the rocks.

## **Other Eastern South Dakota**

A very large boulder in northeastern South Dakota has four parallel horizontal lines on one side and two bison heads on another side. It appears that bison used this rock as a rubbing stone. A site in southeastern South Dakota has a four-toed footprint or bear paw deeply ground in outline in a bedrock outcrop of striated Sioux quartzite. At the same site is a small cliff with a woman and child picture ground into it. A circle appears below the two human figures. Another panel at the site is now indistinct, but probably depicted animals such as deer. Another stone from eastern South Dakota, now in a city park, was covered with deer tracks, atlatls, a hand or paw, and vulva designs, as well as more esoteric images.

*Temporal Boundaries.* Archaic through Protohistoric. Maximum age is unknown, but estimated at about 8000 BP, based on content, weathering, and the age of stream terraces that have formed since the rock art was made.

*Spatial Boundaries.* Entire state. Concentrations are in the southern Black Hills, the North Cave Hills, along the Missouri River, and near Lake Traverse in northeastern South Dakota.

## **Research Topics**

1. What are the ages and cultural affiliations of the various rock art styles? Is Sundstrom's (2004a) proposed chronology accurate? Can it be further refined?
2. Examine the concept of the Northern Hills as a contact zone.
3. Is the boulder art of eastern South Dakota an indicator of Siouan and Algonkian expansion into the northern Great Plains? Do these sites contained buried deposits associated with the rock art?
4. More studies addressing symbolism as understood from associated archaeological deposits and/or ethnographic information.
5. Did men and women have separate rock art traditions?
6. Are hypothesized cultural affiliations for various recent styles correct?
7. What are the ages and cultural affiliations of the painted rock art panels?
8. What is the age, cultural affiliation, and meaning of the painted rock art?

## **Prehistoric and Protohistoric Rock Art Sites**

39BE2, 39BE3, 39BU408?, 39CH60, 39CO39, 39CU70, 39CU91, 39CU152, 39CU510, 39CU511, 39CU512, 39CU513, 39CU514, 39CU515, 39CU516, 39CU890, 39CU1977, 39CU2565, 39CU3178, 39CU3393, 39CU3427, 39CU3428, 39CU3429, 39CU3430, 39CU3431, 39CU3804, 39CU4105, 39CU4164, 39DW176, 39FA2, 39FA6, 39FA7/39FA93, 39FA8A, 39FA58, 39FA70, 39FA73, 39FA75, 39FA78, 39FA79, 39FA86, 39FA88, 39FA89, 39FA90, 39FA91, 39FA92, 39FA93, 39FA94, 39FA99, 39FA219?, 39FA243, 39FA244, 39FA277, 39FA305, 39FA316, 39FA321, 39FA389, 39FA395, 39FA446, 39FA447, 39FA448, 39FA542, 39FA554, 39FA676, 39FA677, 39FA678, 39FA679, 39FA680, 39FA681, 39FA682, 39FA683, 39FA684, 39FA685, 39FA686, 39FA687, 39FA688, 39FA690, 39FA691, 39FA692, 39FA699, 39FA723, 39FA767, 39FA788, 39FA806, 39FA819/39FA1047, 39FA875, 39FA1010, 39FA1013, 39FA1032, 39FA1046, 39FA1048, 39FA1049, 39FA1093, 39FA1152, 39FA1154, 39FA1155, 39FA1190, 39FA1201, 39FA1202, 39FA1203, 39FA1204, 39FA1303, 39FA1336, 39FA1337, 39FA1552, 39FA1616, 39FA1617, 39FA1618, 39FA1620, 39FA1621, 39FA1622, 39FA1623, 39FA1636, 39FA1637, 39FA1638, 39FA1639, 39FA1650, 39FA1651, 39FA1652, 39FA1653, 39FA1656, 39FA1657, 39FA1661, 39FA1688, 39FA1702, 39FA1753, 39CU1754, 39FA1755, 39FA1756, 39FA2530, 39FA2531, 39HE331, 39HN1, 39HN5, 39HN17, 39HN18, 39HN21, 39HN22, 39HN26, 39HN30, 39HN49, 39HN50, 39HN53, 39HN54, 39HN120, 39HN121, 39HN150, 39HN155, 39HN159, 39HN160, 39HN162, 39HN165, 39HN167, 39HN168, 39HN171, 39HN174, 39HN177, 39HN198, 39HN199, 39HN205, 39HN206, 39HN207, 39HN208, 39HN209, 39HN210, 39HN213, 39HN217, 39HN218, 39HN219, 39HN227, 39HN228, 39HN232, 39HN233, 39HN234, 39HN433, 39HN484, 39HN485, 39HN486, 39HN487, 39HN515, 39HN516, 39HN529, 39HN637, 39HN663, 39HN664, 39HN680, 39HN682, 39HN685, 39HN689, 39HN690, 39HN691, 39HN692, 39HN693, 39HN694, 39HN695, 39HN696, 39HN698, 39HN705, 39HN711, 39HN744, 39HN745, 39HN746, 39HN747, 39HN748, 39HN755, 39HN756, 39HN776, 39HN777, 39HN778, 39HN779, 39HN781, 39HN790, 39HN791, 39HN792, 39HN793, 39HN794, 39HN796, 39HN797, 39HN798, 39HN799, 39HN800, 39HN802, 39HN810, 39HN815, 39HN816, 39HN826, 39HN827, 39HN828, 39HN829, 39HN832, 39HN833, 39HN838, 39HN839, 39HN840, 39HN842, 39HN843, 39HN844, 39HN846, 39HN893, 39HN897, 39HN898, 39HN901, 39HN902, 39HN904, 39HN905, 39HN906, 39HN907, 39HN908, 39HN912, 39HN913, 39HN914, 39HN915, 39HN916, 39HN957, 39HN961, 39HN1017, 39HN1168, 39HN1178, 39HN1221, 39HN1375, 39HU79, 39HU81, 39HU82, 39JE19, 39LA1290, 39MD1, 39MD20, 39MD55, 39MD81, 39MD82, 39MD135, 39MD637, 39MD872, 39MD891, 39MD986, 39MH9, 39MK12, 39MP3, 39MP4, 39PE46?, 39PE486, 39PN57, 39PN108, 39PN376, 39PN438, 39PN439, 39PN1376, 39PN1484, 39PN1857, 39PN2740, 39PN2987, 39PN1362, 39PO63, 39PO203, 39PO205, 39RO25, 39RO31, 39RO32, 39RO33, 39RO71, 39SP4, 39SP10, 39ST204, 39ZB49

## **Rock Art Sites Listed in the National Register**

39BE3, 39C039, 39CU70, 39CU91, 39CU510, 39CU511, 39CU512, 39CU513, 39CU514, 39CU515, 39CU516, 39CU890, 39FA7/39FA93, 39FA58, 39FA75, 39FA79, 39FA86, 39FA88, 39FA89, 39FA90, 39FA91, 39FA94, 39FA99, 39FA243, 39FA244, 39FA277, 39FA316, 39FA321, 39FA389, 39FA395, 39FA446, 39FA447, 39FA448, 39FA542, 39FA554, 39FA676, 39FA677, 39FA678, 39FA679, 39FA680, 39FA681, 39FA682, 39FA683, 39FA684, 39FA685,

39FA686, 39FA687, 39FA688, 39FA690, 39FA691, 39FA767, 39FA788, 39FA806, 39FA819/39FA1047, 39FA1010, 39FA1013, 39FA1046, 39FA1049, 39FA1093, 39HE331, 39HN1, 39HN5, 39HN17, 39HN121, 39HN150, 39HN155, 39HN159, 39HN160, 39HN162, 39HN165, 39HN167, 39HN168, 39HN171, 39HN174, 39HN177, 39HN198, 39HN199, 39HN205, 39HN207, 39HN208, 39HN209, 39HN210, 39HN234, 39MD1/39MD20, 39MD55, 39MD81, 39MD82, 39MP3, 39MK12, 39PN57, 39PN108, 39PN376, 39PN438, 39PN439, 39P0205, 39R071, 39SP4

## **Condition and Archaeological Potential**

Because they are exposed to weathering and to the actions of people, rock art sites are extremely vulnerable to damage. Most rock art sites in South Dakota have sustained some damage from graffiti, other vandalism, advanced erosion, looting, or collapse of overhangs. Well-meaning members of the public and even professional archaeologists have done a great deal of damage to these highly visible sites by such activities as chalking, carving or painting identification numbers on the cliffs, and making casts or rubbings. Some sites have been completely destroyed or the petroglyphs removed to a different location. A major challenge is simply to compile complete records of the rock art sites before they are damaged or lost. The archaeological potential of these sites is only now being realized. New recording techniques, a more careful application of ethnographic information, and dating methods such as accelerator mass spectrometry-assisted radiocarbon dating have vastly expanded the information potential of rock art sites.

## **Bibliography**

Over 1941; Keyser 1984; Keyser and Klassen 2001; Sundstrom 1993, 2004

## **Historic Inscriptions**

### **Overview**

Just as indigenous people made drawings on the rocks, non-Natives used rock surfaces as a canvas for inscriptions and images. Such inscriptions are found throughout the state and most often consist of names or initials and dates. Some have cattle brands. Three inscriptions, in Fall River, Custer, and Harding Counties, were made by members of the 1874 Black Hills Expedition. Founders Rock (39PN2987) in Rapid City includes the names of some of the city's founders from their first visit there, as well as those of later settlers. Site 39HN527 in Harding County has the name of the county's first surveyor (Carl Cornell), as well as those of the first homesteaders in the area. Three inscriptions, in Fall River, Custer, and Harding Counties, were made by members of the 1874 Black Hills Expedition (39HN17, 39CU81, 39FA86). A series of sites in the North Cave Hills were made by Civilian Conservation Corps enrollees in the 1930s. Three sites near Fort Meade apparently made in 1948 contain Bible verses. A unique bit of historic rock art is a sundial made by Boy Scouts in Harding County (39HN1180).

South Dakota also contains several latter-day attempts to create authentic-looking ancient Native American rock art. These include 39LK3, probably 39MD653, 39FA1010, and 39CU953. A memorial or fake Custer inscription has been recorded in the Black Hills.

The practice of graffiti continues, despite social and legal disapproval. Most historic inscriptions are of little historic value in and of themselves; however, a few tie in with important historic themes such as exploration, cattle drives and ranching, homesteading, and the Civilian Conservation Corpswork relief program.

## **Temporal Boundaries**

1855 to 1967 (as potentially eligible sites)

## **Spatial Boundaries**

Entire state wherever rock surfaces are exposed.

## **Historic Inscription Sites in South Dakota**

39BO116, 39CO350, 39CU854, 39CU861, 39CU953, 39CU1125, 39CU1409, 39CU3431, 39CU3804, 39CU4169, 39CU4278, 39CU4279, 39DE19, 39FA49, 39FA1148, 39FA1186, 39FA1751, 39FA2531, 39GR73, 39HN9, 39HN15, 39HN513, 39HN517, 39HN527, 39HN536, 39HN537, 39HN538, 39HN539, 39HN540, 39HN541, 39HN542, 39HN543, 39HN544, 39HN545, 39HN782, 39HN821, 39HN822, 39HN839, 39HN879, 39HN960, 39HN963, 39HN1016, 39HN1074, 39HN1134, 39HN1180, 39HN1181, 39HN1203, 39HN1222, 39HN1225, 39HN1226, 39HN1236, 39HN1237, 39HN1238, 39HN1239, 39HN1240, 39HN1256, 39HN1257, 39LA1290, 39LA1490, 39LK3, 39MD653, 39MD668, 39MD6765, 39MD676, 39MD677, 39MD831, 39MD891, 39MD951, 39MD952, 39MD953, 39PN972, 39PN978, 39PN1362, 39PN2987, 39PN3209, 39PN3256, 39PN1857

## **Condition and Archaeological Potential**

Except where an inscription can be linked to another historic context, these sites have limited archaeological potential. Exceptions are inscriptions recording settlement or travel not otherwise recorded, such as the 1855 inscription in Deuel County made by a fur trapper (39DE19). The Black Hills Expedition inscriptions help verify the routes of travel. Most historic inscriptions are not linked to larger sites with intact archaeological deposits; however, those related to the Civilian Conservation Corps, to early homesteads, trails, or stagecoach routes may have larger sites associated with them.

The condition of historic inscriptions varies widely. For example, the Brennan inscription at Founders Rock in Rapid City is almost completely weathered away. Other inscriptions are clear and easy to read.

Relatively few historic inscriptions have been recorded as archaeological sites. Historic graffiti often occur at or near prehistoric rock art sites, but it is generally not detailed in site descriptions. Those sites listed in the National Register contained other features, such as prehistoric rock art, as the basis of their significance.

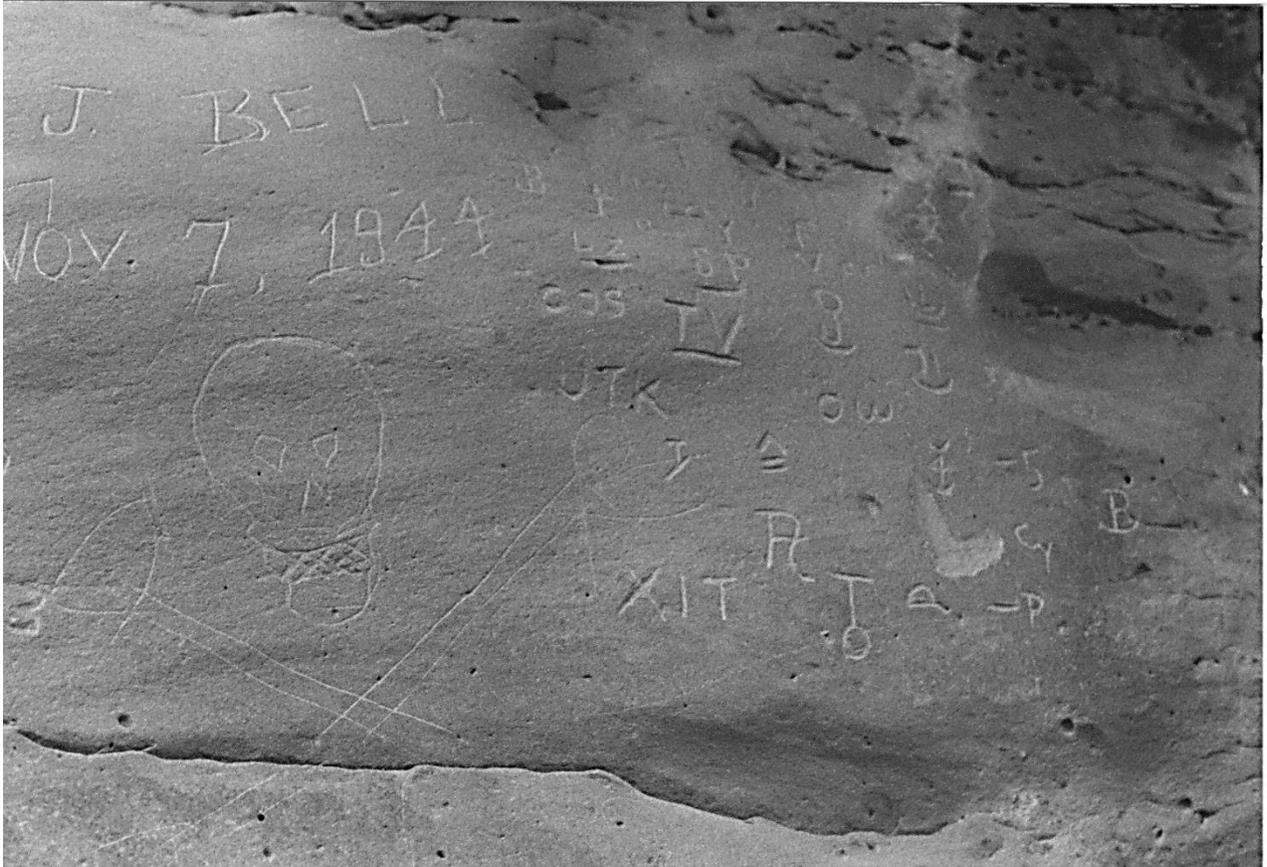


Figure 91. Incised cattle brands and graffiti, 39FA690 (L. Sundstrom photo, 2000).

## Research Topics

Research questions for historic inscriptions are those relevant to associated historic themes, such as homesteading and the Civilian Conservation Corps.

## Historic Inscriptions Listed in the National Register:

39FA49, 39HN1, 39HN17

## Rock Shelters and Caves

### Overview

Most rock shelter sites in South Dakota are in the Black Hills, Black Hills foothills, and Cave Hills. This is not surprising, since these are the areas with numerous rock overhangs. Rock shelter sites in South Dakota date to every period except the early Paleoindian period (Clovis, Goshen, and Folsom complexes). The lack of early Paleoindian components in rock shelters may reflect severe erosion during the end of the Pleistocene that has removed any deposits from this time or caused rock shelters to collapse due to undercutting. It is certainly possible that ancient

archaeological deposits lie under rubble piles from where rock shelters have collapsed. A rock shelter high in the Bighorn Mountains of Wyoming (Two Moon Shelter) contained a Folsom projectile point and possible Clovis artifacts (Finley *et al.* 2005).

A rock shelter study in South Dakota began in 1920, when W.H. Over essentially cleaned out Ludlow Cave (39HN1) in the Cave Hills of northwestern South Dakota (Over 1936; Sundstrom 1996b). In 1938, W.H. Over and University of South Dakota Museum staff, with Works Progress Administration funding, excavated 14 rock shelters (collectively designated 39FA8) in the southern Black Hills (Meleen and Pruitt 1941). Both ceramic-producing and non-ceramic groups had occupied these shelters. Unfortunately, the field notes and most of the artifacts from this project were lost and no report was completed. Later rock shelter excavation projects in the Black Hills (including both South Dakota and Wyoming) have taken place at the multiple-component Beaver Creek site in the southern Black Hills (L. Alex 1991); the Boulder Creek Rock Shelter (Rhodd *et al.* 1995) in the northern Black Hills; and the Movie Draw site in the southeastern Black Hills (Sellet and Fosha 2007).

A probable Late Paleoindian and/or Early Archaic level at the Boulder Creek Rock Shelter (39LA713) contained large amounts of burned bone, including bison and deer. This component was interpreted as the winter camp of a small group (Rhodd *et al.* 1995). At 48CK1387 in the northwestern (Wyoming) Black Hills, a shallow basin hearth yielded a date of 7430 BP. This site also contained a small amount of bone from large and small mammals and a few chipped-stone tools. These appear to represent a short-term occupation at which some meat procurement and processing took place (Schneider *et al.* 1997). A sparse Early Archaic component at the nearby Red Canyon Rock Shelter (also in Wyoming) was dated to 5190 and 5960 BP. It contained three shallow basin hearths, a scatter of fire-cracked rock, a single charred pennycress seed, and two pieces of burned bone that may belong to a later component (Schneider *et al.* 1997).

The Beaver Creek site, 39CU779, is a streamside rock shelter that contained some 17 occupation levels, dating to the Early and Middle Archaic (L. Alex 1991; Martin *et al.* 1993). These indicate warm-season occupation. Maintenance and production of stone tools, hunting, and game processing appear to have been the principal activities associated with the site. The Middle Archaic was the period of most intensive use of the shelter. The Middle Archaic levels had numerous roasting pits and hearths. A Hanna point occurred stratigraphically higher than McKean lanceolate points at this site, suggesting a possible temporal sequence of projectile point styles. Food scraps included deer, bison, pronghorn, canids (including domesticated dog), rabbits, and toads, although the bones were not analyzed specifically for butchering marks. Bison does not occur in the lower levels. A roasting pit contained several immature deer.



*Figure 92. Rock shelter sites in the central and southern Black Hills. Above, 39CU1310; below, 39FA688 (L. Sundstrom photos 2017 and 2006).*

Unfortunately, a complete analysis of the material excavated from the Beaver Creek site has not been undertaken and the samples are difficult to correlate with archaeological occupation levels due to the excavation methods used. A high altitude rock shelter (39CU144) contained a single McKean lanceolate point and a few flakes. It probably was used only once (Noisat 1990).

Several rock shelter sites in the Black Hills contain Middle Archaic material. The Belle and Mule Creek Rock Shelters are in the northwestern foothills zone. Component B of Belle Rock Shelter contained Hanna points, knives, scrapers, utilized flakes, and a chopper. Two hearths were present in this level, along with remains of bison, deer, pronghorn, and shellfish. Component C contained McKean lanceolate points, knives, end scrapers, a palette, and a piece of hematite. This level contained three hearths and crushed bone fragments. Component C also contained many extremely thin flakes (Kornfeld *et al.* 1995). Component D of Mule Creek Rock Shelter contained McKean Lanceolate, Duncan, and Hanna points, knives, drills, flake scrapers, an end scraper, manos, a grinding slab, and a pestle. The seven hearths included stone-filled basins and stone platforms. Food scrap included bison, deer or pronghorn, canid, beaver, grouse, and shellfish. Both Mule Creek and Belle Rock Shelters appear to have served as periodically reoccupied, seasonal habitation sites. Seasonality indicators are limited; however, the presence of shellfish suggests a warm-season occupation.

Rock shelters were not used as much during the Middle Archaic as during other periods of Black Hills prehistory. Five sites provide evidence of intensive, repeated occupation of rock shelters. The Belle and Mule Creek Rock Shelters in the western periphery both provide evidence of multiple occupations (Wheeler 1957; Kornfeld *et al.* 1995), as did the Beaver Creek site in the southern Black Hills (L. Alex 1991; Martin *et al.* 1993). These sites were used many times and contain diverse kinds of food remains. The Boulder Creek and Red Canyon Rock Shelters in the northern Black Hills echo this pattern of reoccupation of favored sites and use of a variety of resources (Rhodd *et al.* 1995; Schneider *et al.* 1997). Middle Archaic material from Boulder Creek Rock Shelter was interpreted as the remains of a winter base camp for a small family group (Rhodd *et al.* 1995). Site 39CU1310 is a small rock shelter in the interior Black Hills that contained a dense deposit of woodrat, ground squirrel, toad, rabbit, pronghorn, and bison bone, along with chipped-stone artifacts. Two radiocarbon dates obtained from a test excavation unit yielded dates of 2040 and 5490 BP, indicating use during the Middle and Late Archaic periods (Bozell 2002; Jones 2006). These patterns are reminiscent of Archaic sites in the Bighorns, with long records of a foothills-based broad-spectrum adaptation distinct from the plains adaptation oriented toward big game (Husted 1969; Black 1991).

In general, Middle Archaic sites contain more diverse bone assemblages and less bison than sites dating to earlier and later periods. Large animal bone is typically smashed and/or burned, indicating the importance of marrow extraction during this period. At the Boulder Creek Rock Shelter in the Black Hills, bone from the Middle Archaic level indicated more intensive bone processing than took place in other periods (Rhodd *et al.* 1995). A typical mountain-foothills subsistence economy, rather than a grasslands-oriented economy, is indicated by many of the Middle Archaic sites in western South Dakota.

A few small Late Archaic components have been excavated in Black Hills rock shelters. Several rock shelter sites in the interior Black Hills and Hogback contain small Besant assemblages including stone tools and ceramics. These appear to represent short-term hunting camps. Lissolo

Cave in the southwestern Black Hills also contained two sizes of corner-notched points in levels above an early McKean level (Steege and Paulley 1964). The points apparently shifted from large, “eared” types to smaller, more definitely corner-notched types. A rock shelter in the northwestern Black Hills (39CK34) contained two Besant point bases. Most of the material from this site relates to Late Prehistoric arrow manufacturing at a campsite. The much sparser Late Archaic materials appear to represent a short-term camp at which hunting weapons were repaired (Wheeler 1957; Kornfeld *et al.* 1995). The Mule Creek and Belle Rock Shelters represent a similar pattern (Wheeler 1957; Kornfeld *et al.* 1995). These contained sparse Late Archaic components overlying denser and more diverse Middle Archaic levels. Although Besant points were not specifically identified, the presence of a potsherd in a mixed Middle and Late Archaic component at Mule Creek Rock Shelter strongly suggests a Besant affiliation. The mixed Middle/Late Archaic component at Mule Creek shelter contained bison, deer or pronghorn, coyote, beaver, grouse, and shellfish. Another reoccupied rock shelter site, 48CK864, was also interpreted as a small, temporary camp at which hunting tools were made and repaired. It contained two hearths with small bone fragments. The lower of these was dated at 1720 BP (Kornfeld *et al.* 1995). This date fits well with dates from Besant sites west of the Black Hills, such as Ruby (1670 and 1800 BP; Frison 1991), Muddy Creek (1720 BP; Frison 1991), and Butler-Rissler (1660 BP; Miller *et al.* 1987; Miller and Waitkus 1989).



*Figure 93. 39FA1154 rock shelter in southern Black Hills (L. Sundstrom photo, 2012).*

A much larger rock shelter in the southern Black Hills, 39FA1154, contains rock art. Three kinds of rock art are present: abraded grooves, lightly incised designs, and abstract pecked figures.

The lightly incised art is the youngest of these, probably dating to the latter portion of the Late Prehistoric or the early Protohistoric period. The pecked abstract art is older, dating to the later Archaic or early Late Prehistoric period. The abraded grooves seem to fall between the other two styles in age at this site (Sundstrom 1993). A Middle Archaic projectile point and Plains Village ceramics were found on the ridge top directly above the rock shelter, while Woodland body sherds were found eroding from below a layer of roof-fall boulders on which the lightly incised rock art occurs. One cord-marked and one smoothed sherd were found in the eroded cultural horizon. The latter occurrence strongly suggests Besant use of the site before the incised rock art was produced and perhaps corresponding to the abraded groove rock art. A Besant association with the pecked abstract rock art is less likely, given the strong eastern affiliation of the former and the strong western affiliation of the latter (cf. Sundstrom 1993, 2004). It appears likely that additional rock art is present on the bottom of the roof-fall boulders. If so, the association between the Woodland pottery and the rock art would be clearer. Fire-cracked rock and chipping debris were also observed eroding from the probable Besant level, suggesting heavy use of the shelter during that time.

A series of rock shelters in the interior Black Hills contain Late Archaic components. Sites 39CU154, 39CU113, 39CU154, and 39PN422 are all rock shelter occupations with single components. All are hypothesized to represent small, temporary, post-hunt camps at which game processing and tool repair were the main activities (Noisat 1990; Tratebas 1986). Site 39CU1310 had a dense and very diverse animal bone assemblage, along with chipped-stone artifacts and charcoal dated to the Middle and Late Archaic periods (Bozell 2002, Jones 2006). The Late Archaic level had more bison, and the Middle Archaic level more pronghorn. Site 39CU154 contained a Besant point and a ceramic sherd with grit and sand temper, thick profile, and smoothed outer surface. These characteristics are consistent with Besant/Sonota wares. A radiocarbon date of 1340 BP from the site agrees with a Besant cultural affiliation. Site 39CU113 was reported as an Early Archaic site; however, the projectile point found there is nearly identical to that from 39CU154 and probably should be reclassified as a Late Archaic Besant variant (Noisat 1990). (Large corner-notched points are diagnostic of both periods.) Site 39CU113 yielded a radiocarbon date of 2170 BP. This is a bit early for Besant (Frison 1991); however, the site is similar to the other three in its general configuration and content. Another site, 39PN422, was designated only as Late Archaic, and no description of the projectile points was published (Tratebas 1986). The Boulder Creek rock shelter contained an ephemeral Late Archaic or Late Prehistoric occupation suggesting limited use of the site during this period (Rhodd *et al.* 1995). The multiple-component Red Canyon rock shelter, in contrast, provided evidence for multiple Late Archaic occupations and for intense use of small game and plant resources. This echoed a pattern seen in Middle Archaic levels at the site. A Late Archaic feature contained large amounts of *Chenopodium* seeds (Schneider *et al.* 1997).

The Movie Draw Site (39CU1401) in the southeastern Black Hills contained about three meters of sediment, as revealed in two small test units (Sellet and Fosha 2007). The main occupation of the site dates to the Late Archaic to Late Prehistoric transition. An Avonlea component with arrow points was dated at 550 CE (ca. 1500 BP), making it the earliest Avonlea site in South Dakota. Occupation of the rock shelter continued for another 650 years. Some earlier components lay beneath the Avonlea layers, but these did not contain artifacts that could be linked to a specific period. Bone scrap at the site included pronghorn, deer, and bison, as well as smaller animals such as rabbits, prairie dogs, and birds. At least some use of the shelter took place in late summer or early fall. Besides typical Avonlea points, the site contained Late Prehistoric side-notched arrow

points and ceramics of smoothed and cord-marked varieties with no visible tempering. Other rock shelters with Avonlea components include 39CU1243 (Spar Spring), 39CU1496, and 39CU1768.



*Figure 94. Movie Draw Rock Shelter, 39CU140, 2003 (ARC photo).*

In the Sandstone Buttes region, Ludlow Cave (39HN1) and two nearby rock shelters, Pelham's Cave (39HN5) and 39HN24, contained evidence of Late Prehistoric and Plains Village use of the area. These sites contained ceramics from three different Middle Missouri complexes: Initial Middle Missouri and two Post-Contact Coalescent phases (Alex 1979; Wood 1971; Wood and Downer 1977). These suggest proto-Mandan, proto-Hidatsa, and proto-Crow use of the area, respectively.

Rock shelters in South Dakota have at least two possible functions. Most researchers have interpreted rock shelters that contain artifacts and/or hearth features as places where people camped for long or short periods. The presence of rock art or items left behind as offerings suggests a religious function (shrine or vision quest station) for some rock shelters (Sundstrom 1996b, 2003, 2004a). No confirmed rock shelter burials are recorded in South Dakota; however, such sites are found elsewhere in the Northwestern Plains (Gill 1991:432).



*Figure 95. View of Ludlow Cave, 39HN1, North Cave Hills (ARC photo).*

A few caves in South Dakota are known to contain archaeological deposits. Ludlow Cave was described above. Two other caves used as shrines during Late Prehistoric and historic times are White Buffalo Cave in south-central South Dakota and Wind Cave in the Black Hills (Jorgenson 1974; Albers 2003). The Ice Cave in the southern Black Hills and Crystal Treasure Cave in the northern Black Hills contained extensive archaeological deposits, including a mix of typical campsite debris and items probably left as offerings. These materials extend back to the Middle Archaic and Late Archaic periods (Styles 2001; Weathermon 2005; Michael Fosha personal communication 2001). Crystal Treasure Cave contained large amounts of non-local obsidian, perhaps indicating its use as a cache along a trade route (Weathermon 2005). The cave designated 39PN285 contained flakes, bone, burned bone, and several tags from plugs of tobacco (Weathermon and Webb 1999). One of the brands represented on these tags was sold from about 1900 to 1930. It is possible that these reflect tobacco left there as offerings; however, more research would be needed to test this idea.

Kruse Cave (39MD487) in the Black Hills contains a series of stratified deposits with hearths and bison and deer bone. It yielded radiocarbon dates from throughout the Late Prehistoric period. Onyx Cave in the Black Hills apparently contained prehistoric artifacts; however, its prehistoric archaeological deposits were lost when the cave was developed for tourism (Sigstad and Sigstad 1973). A test excavation in Cedar Spring Cave (39CU525) yielded chipped-stone tools, chipping debris, a pestle, animal bone, burned bone, and charcoal. Site 39PN2634 had bone and burned bone in a test unit. Site 39CU1174 is a small cave that has chipping debris on its surface.

Erskine Cave also had a few flakes on the surface. Test excavations there found very shallow soil deposition outside the cave, but did not attempt to probe the deposits inside the cave. Their archaeological potential is still unknown (Bryant 2003). Another small cave, 39MD653, was test excavated and found to contain animal bone deposits. Two caves in Custer County were said to have contained skeletons that were removed early in the twentieth century; however, one was reexamined and found to contain no artifacts or features. The location of the other one is uncertain. For now, no cave or rock shelter burials are known from South Dakota.

In general, deep caves are dank, chilly places not suited to long-term habitation. They can, however, provide cold-storage for perishables such as meat. They may have been used as workshops on hot summer days. Many also would serve well for caching valuable items. Ethnographic and archaeological data indicate widespread use of caves as shrines (Sundstrom 2007). To correctly interpret archaeological deposits in caves, archaeologists will have to think beyond the usual subsistence and shelter categories.

## **Spatial Boundaries**

Virtually all recorded rock shelter sites are in the Black Hills, Black Hills foothills, or Cave Hills. Most of the rest of South Dakota lacks rock overhangs. One overhang in the Big Bend archaeological region (39LM239) apparently lacks artifacts or features (Archaeological Research Center records) and is not a cultural site.

## **Temporal Boundaries**

Late Paleoindian through Historic, with most components dating to the Middle Archaic or later.

## **Research Topics**

1. To what extent were rock shelters used as living spaces?
2. What activities took place at rock shelters?
3. What evidence is there for uses such as vision quests, shrines, and menstrual shelters?
4. What features influenced use of rock shelters—for example, size, aspect (the direction the rock shelter faces), accessibility, proximity to water?
5. Why does rock shelter use appear to be most intense during the Late Archaic period?
6. What evidence for environmental change is present in rock shelters? Does this correspond with patterns of human use of the shelters?
7. Were some rock shelters or caves used for cold-storage of meat?
8. How were caves used? When and by whom?

## **Rock Shelter Sites**

**Paleoindian:** 39PN376, 39FA1180

**Early Archaic:** 39CU115, 39CU779

**Middle Archaic:** 39CU144, 39CU152, 39CU525, 39CU779, 39FA1154, 39PN376, 39PN1415

**Late Archaic:** 39CU113, 39CU154, 39HN1, 39LA504, 39PN114, 39PN376

**Late Woodland:** 39FA992, 39FA1154

**Late Prehistoric:** 39CU658, 39CU1401 (Avonlea), 39CU1496 (Avonlea), 39CU1768, 39FA91, 39HN1, 39PN315, 39PN67, 39PN376, 39PN1702, 39PN1854

**Plains Village:** 39FA1154

**Historic:** 39CU95, 39CU232, 39CU435, 39CU573, 39CU619, 39CU669, 39CU1041, 39CU2547, 39CU4236, 39CU4278, 39CU4279, 39HN1, 39HN677, 39LA504, 39LA535, 39LA615, 39LA755, 39LA840, 39LA1376, 39LM239, 39MD115, 39MD448, 39MD654, 39MD918, 39PN376, 39PN912, 39PN3238, 39PN3256

**Rock Shelter and Cave Sites:** 39CU3, 39CU95, 39CU96, 39CU113, 39CU115, 39CU129, 39CU131, 39CU144, 39CU145, 39CU152, 39CU153, 39CU154, 39CU158, 39CU165, 39CU170, 39CU171, 39CU174, 39CU176, 39CU232, 39CU233, 39CU352, 39CU355, 39CU374, 39CU380, 39CU385, 39CU396, 39CU398, 39CU428, 39CU429, 39CU435, 39CU448, 39CU449, 39CU450, 39CU479, 39CU483, 39CU525, 39CU573, 39CU619, 39CU658, 39CU669, 39CU772, 39CU779, 39CU842, 39CU938, 39CU953, 39CU1041, 39CU1174, 39CU4105, 39CU4208, 39CU4236, 39CU4247, 39CU4274, 39CU4278, 39CU4318, 39CU4332, 39CU4334, 39CU4339, 39CU4353, 39CU4377, 39CU4384, 39CU4385, 39FA1, 39FA2, 39FA4, 39FA5, 39FA7, 39FA8, 39FA8A, 39FA70, 39FA73, 39FA75, 39FA78, 39FA91, 39FA185, 39FA191, 39FA192, 39FA205, 39FA243, 39FA313, 39FA316, 39FA395, 39FA448, 39FA456, 39FA560, 39FA683, 39FA686, 39FA688, 39FA767, 39FA830, 39FA831, 39FA880, 39FA992, 39FA1011, 39FA1047, 39FA1050, 39FA2530, 39GR73, 39HN1, 39HN4, 39HN5, 39HN7, 39HN15, 39HN19, 39HN24, 39HN30, 39HN120, 39HN127, 39HN150, 39HN159, 39HN162, 39HN165, 39HN181, 39HN226, 39HN232, 39HN1375, 39LA504, 39LA535, 39LM239, 39MD54, 39MD115, 39MD124, 39MD448, 39MD653, 39PN114, 39PN279, 39PN282, 39PN285, 39PN287, 39PN290, 39PN297, 39PN299, 39PN300, 39PN313, 39PN314, 39PN315, 39PN376, 39PN387, 39PN388, 39PN392, 39PN635, 39PN673, 39PN674, 39PN912, 39PN1415, 39PN1473, 39PN1484, 39PN1488, 39PN1678, 39PN1702, 39PN1705, 39PN1706, 39PN1833, 39PN1835, 39PN1838, 39PN1841, 39PN1842, 39PN1843, 39PN1844, 39PN1852, 39PN1854, 39PN1857, 39PN1860, 39PN1941, 39PN1993, 39PN2506, 39PN2513, 39PN2517, 39PN2518, 39PN2632, 39PN2634, 39PN2816, 39PN2896, 39PN2928, 39PN2936, 39PN2939, 39PN2979, 39PN3122, 39PN3164, 39PN3233, 39PN3234, 39PN3235, 39PN3257

**Rock shelters lacking cultural materials:** 39CU170, 39CU171, 39CU428, 39CU429, 39CU448, 39CU450, 39CU847, 39CU4272, 39FA456, 39HN517, 39LM239, 39MD454?,

39MD876, 39PN290, 39PN299, 39PN313, 39PN388, 39PN392, 39PN1859, 39PN2976, 39PN3237, 39PN3239, 39PN3240

**Rock shelters not test-excavated, but lacking cultural material on the surface:** 39CU174, 39CU176, 39CU456, 39CU4111, 39CU4129, 39LA1570, 39PN1971, 39PN2766

**Rock shelter and cave sites listed in the National Register:** 39CU779, 39FA7, 39FA75, 39FA88, 39FA90, 39FA91, 39FA243, 39FA316, 39FA395, 39FA448, 39FA683, 39FA686, 39FA688, 39FA767, 39FA819 (same as 39FA1047), FA1010, 39FA1093, 39FA1152, 39FA1154, 39FA1204, 39FA1337, 39FA1093, 39FA1152, 39FA1190, 39HN1, 39HN5, 39HN150, 39HN162, 39HN163, 39HN171, 39HN165, 39HN219, 39HN232, 39HN487, 39PN376. All except 39CU779 were listed because they contain rock art.

## **Condition and Archaeological Potential**

Many rock shelter sites in western South Dakota have been destroyed or damaged. The same erosional forces that create rock shelters often continue to erode the sediments that accumulate within them. Rock shelters are highly visible and attractive to humans and livestock seeking shade or shelter from bad weather. They are highly susceptible to looting and to damage from livestock trampling. Most of the known sites have been at least partially looted, making intact rock shelter deposits all the more rare and important to archaeological research. Some sites were excavated early on with methods unacceptable by today's standards (cf. Over 1936, Meleen and Pruitt 1941). Rock shelter sites typically have very complex stratigraphy, including debris cones, discontinuous lenses, and rock layers, rather than the flat, stacked layers typical of open-air sites. This necessitates very meticulous excavation methods and detailed studies of the depositional history of the site. Some sites have been listed as not eligible for National Register listing based on inadequate methods of testing their significance. Specifically, some sites were considered noncultural because they lacked artifacts or features on the surface. When such sites are test-excavated, however, many if not most of them are found to have significant archaeological deposits (see Archaeological Research Center site records; Schneider *et al.* 1997; Fenner and Kornfeld 2006; Sellet and Fosha 2007). rock shelters often preserve fragile paleoenvironmental indicators such as seeds and plant parts gathered by woodrats; thus, they are expected to yield information that will contribute to a better understanding of past climate change in western South Dakota.

Caves are especially vulnerable to damage from the activities of cave-explorers. Cave enthusiasts often dig or push aside sediments in order to gain access to passageways. Some caves in the Black Hills have been damaged by dynamite charges used to expand cave openings. Cave explorers also have removed woodrat midden that is blocking their way into a cave. Such midden can contain valuable archaeological, paleontological, or fossil plant material. To protect archaeological deposits in caves, it is necessary to educate the caving community about the need to avoid disturbing sediments and woodrat midden and to vigorously enforce resource protection laws.

# Stone Circles

## Overview

Stone circles are one of the most common site types in South Dakota and other northern Great Plains states and provinces. They take the form of ovals or rings of rocks. The rocks are generally of a size that can be easily moved by one person and that occur naturally near the stone circle feature. The rocks may form a solid ring, but more often have gaps between them. The rings range in size from 2.5 to 9 meters in interior diameter (The distance across the ring, as measured from the inside edge of the stones). Smaller and larger arrangements of stone are likely to be classed as hearths or alignments, rather than stone circles. Most of these are interpreted as tipi rings—that is, the remains of stones placed around the bottom edges of tipi covers to anchor them during cold or windy weather. On the Great Plains, features interpreted as tipi rings are usually 4 to 5 meters in interior diameter (Dasovich 1998:15). The number of stone circle features at sites in South Dakota ranges from one to more than 100. Stone circles have been the subject of several major studies (Hoffman 1953; Kehoe 1960; Malouf 1960, 1961; Davis 1983; Wilson 1981; Dasovich 1998).

The interpretation of stone circles as a supports for conical, rather than dome-shaped, shelters cannot be proved, but is accepted as the most likely possibility. While Plains Indian groups did, historically, construct domal structures, these were few in number compared with tipis, and tended to have special functions, such as the sweat lodge. In the windy and highly variable climate of the northern Great Plains, the conical tipi has many advantages over a blocky or domal structure. The tipi's shape is wind-resistant, diverting winds around the narrow top of the cone, rather than presenting a large, flat wall that wind cannot easily go around. The constricted top of the tipi leaves little area for hot air to escape from the lower living space in winter. On hot summer days, the sides of the tipi were easily raised to permit greater air circulation. Tipis can be erected either by pushing the ends of the poles into the ground or simply by resting the ends of the poles on the surface if the ground is frozen and impenetrable, as is frequently the case in the northern Great Plains. Further, ethnographic and historic accounts specifically identify these stones as tipi cover weights (Kehoe 1960; G. Wilson 1927:169).

Site 39FA392 is a stone circle in the southern Black Hills. Inside the ring was a deep, cylindrical pit hearth excavated into the sandstone bedrock (Tratebas and Vagstad 1979). This, and an abundance of burned wood and charcoal, suggested a winter camp. A line of stones just inside the main ring indicated use of a liner made of hide that would have provided additional insulation. The site was radiocarbon dated at 1030 BP. An interesting feature was the presence of an infant burial in the pit hearth. It had been covered with a layer of flat rocks and was not burned. Similar pit hearth burials were found at two nearby sites, 39FA71 and 39FA30. The site contained bone from pronghorn and mountain sheep. A later and less complex stone circle site was investigated nearby at 39FA496. This site had 12 stone circles visible on the surface. In advance of a highway project, six of these were partially, and one completely, excavated in 1979 (Haug *et al.* 1980). Only three artifacts were present on the site surface, including one Late Prehistoric projectile point base; another 18 chipped-stone artifacts were found in the excavations. The site was interpreted as a briefly occupied camp.



*Figure 96. Stone circle exposed on surface at 39DW48, 1979 (ARC photo).*



*Figure 97. Aerial view of remnant stone circle concentration, 39CA177, 1981 (ARC photo).*

A stratified, multiple-component site in northwestern South Dakota (39HN158) had three indistinct stone circle features on the surface. These were estimated to date to the Late Prehistoric period, although no radiocarbon samples or projectile points were found in direct association with them (Metcalf and Black 1985). A series of large sandstone slabs in a buried Late Prehistoric component could be the remains of an earlier tipi camp, but lacked a definite outline. Excavation of a hearth dated to a Late Archaic use of the site yielded 2096 chipped-stone artifacts, including 52 tools (modified flakes, bifaces, scrapers, and projectile points), heavily fragmented animal bone, fire-cracked rock, and one mallow seed. Archaeologists interpreted the site as a very long series of temporary hunting camps. A nearby site (39HN152) contained several stone circles partially exposed on the surface, as well as one subsurface stone circle feature exposed in an excavation unit (Metcalf and Black 1985). The upper stone circles were dated to the Late Prehistoric period. One excavated feature had a central hearth that contained charred goosefoot and rose seeds. The lower stone circle had a probable central hearth with fire-cracked rock, chipped stone debris, and bone fragments from large mammal species. The lower stone circle contained Late Archaic Pelican Lake project points and a smaller corner-notched point of probably Late Prehistoric age. The stratum containing the buried stone circle feature overlies a stratum containing hearths dated at 2090 and 2900 BP, thus confirming a Late Archaic to Late Prehistoric age for the stone circles.

Field school crews completely excavated six stone circles at 39MP52 for a dissertation project (Dasovich 1998). These contained between 5 and 14 chipped-stone artifacts, excepting one with 26 artifacts. A Late Prehistoric Prairie Side-Notched arrow point was excavated from one ring; no other datable material was found. Three stone circles were completely excavated at 39MP51 for the same project (Dasovich 1998). The first yielded only seven pieces of chipping debris and a single pronghorn tooth. The second had a hammerstone, one piece of fire-cracked rock, and 37 pieces of chipping debris. The third circle, however, contained eight stone tools and 291 other chipped-stone artifacts, nearly all of which were Tongue River silicified siltstone flakes, cores, and shatter. Because some of the tool-stone showed heat fractures or discoloration, it appears that the material had been prepared by heating. The amount of fire-cracked rock inside the circle was not sufficient to suggest that this heat-treating took place inside the lodge. A significant finding was that the vast majority of artifacts in all rings were just inside the stone ring, rather than in the center of the ring. This may indicate use of hide or grass mats in the center of the lodge or periodic cleaning by sweeping debris to the edges of the living space. This study also employed soil phosphorous analysis to detect activity areas within stone circles. Phosphorous concentrations occur in areas with high organic content, and thus may indicate places where butchering or plant food processing took place (Dasovich 1998). Another significant discovery was that apparent gaps in the stone circles, which archaeologists often identify as doorways, usually are the result of some rocks being completely covered by sod. Once the stone circle is excavated, the apparent gaps are filled in. This study found no consistent pattern of leaving a gap in the ring of stones; the excavated rings were continuous.

Other excavated stone circles also contained moderate amounts of chipping debris from stone tool production and repair. Sites 39CU414, 49CU574, and 39CU575 are three stone circle sites overlooking Battle Creek near its confluence with the Cheyenne River (Hovde 1981). They contained flakes, shatter, biface fragments, Badlands knives, cobble choppers, one scraper, and one projectile point between them, nearly all of which were inside the stone circles at or near the surface. The point, found on the surface of 39CU414, is a Late Prehistoric Prairie Side-Notched

type. Two of the sites had hearths lying outside the stone circles. Two stone circles at 39CU416, lying just outside the eastern edge of the Black Hills, contained flakes, cores, expedient flake tools, and chipping debris (Hovde 1981). One had an interior hearth and the other an exterior hearth. No diagnostic artifacts or datable organics were found. Another portion of the same site contained 13 cairns and a scatter of chipped-stone artifacts, but these were not excavated. The artifact assemblage both on the site surface and from the stone circle excavations matches that expected for temporary hunting camps. At 39CU417, a hearth inside a stone circle dated to 2370 BP, or the early Late Archaic period (Hovde 1981). The site had an earlier component not associated with the stone circles. The artifacts, including a cached mano and metate set, indicated a variety of activities, including stone tool production, hunting, and food processing. Unfortunately, the two components were mixed.



*Figure 98 Stone circles at Flint Hill, 39FA49. Smithsonian Institution River Basin Surveys archaeologists Waldo Wedel and Mett Shippee and ranch owner Neal Conboy, August 12, 1948 (SI-RBS photo on file at ARC).*

Other stone circle sites with buried cultural materials were identified through test excavations but have not been fully excavated. Site 39CU1134 had two buried components with flakes, bone fragments, and burned earth, but these were not fully investigated (Williams 1993a). A single stone circle at 39FA1608 on the eastern edge of the Black Hills contained a cultural level near the surface with a sparse scatter of chipping debris (Hananberger 2004). Nearby site 39FA1604 contained ten stone circles. Cultural material associated with the rings included fire-cracked rock, cores, chipping debris, a hammerstone, and a few small pieces of pottery, reminiscent of Extended

Coalescent types (Hanenberger 2004). A site with three stone circles, 39FA986, had more than 200 artifacts on the surface; chipped-stone artifacts were also found below surface in two test units (Noisat 1989b). A site in the Sandstone Buttes region, 39HN556, contained stone circles, cairns, hearths, and a scatter of artifacts on and just below the surface (Seirs and Nelson 1994). Artifacts included Late Prehistoric side-notched arrow points, scrapers, bone fragments, a mano, and Protohistoric-era trade beads. One stone circle was excavated at 39CU359, a site with around 70 stone circles of presumably different ages (Sudderth 1964). This contained a few chert flakes, a core, a hammerstone or pestle fragment, and a few bone fragments, all within 10 cm of the surface. A stone circle in the eastern Black Hills at 39MD20 and another at 39FA1608 were test excavated and found to contain only a small amount of chipping debris (Archaeological Research Center records; Hanenberger 2004b).

Test excavations at several stone circle sites in the southwestern Red Valley of the Black Hills revealed hearths, animal bone scrap, and artifacts, sometimes numbering in the thousands (Winham *et al.* 2005). These sites typically contained a variety of tools, including scrapers, projectile points, drills, and flake tools, and a few also contained a few pottery sherds. These sites dated to the Late Archaic and Late Prehistoric periods and appear to have been winter camps used throughout the cold months and possibly reused from year to year. By contrast, another site in the southern Red Valley contained five stone circle features, but excavation of all five yielded only 20 artifacts (Byrne *et al.* 1996). One of the five stone circles had a hearth in the center; a charcoal sample from this feature gave a date at the Late Prehistoric-Protohistoric boundary.

Site 39MP14, in the Missouri Coteau region, had 13 stone circle features, of which two were test-excavated. Surface finds at the site included two Middle Archaic projectile points (Nowak *et al.* 1982). These suggest the possibility that some stone circle sites may pre-date the Late Archaic period.

Eleven stone circle sites were mapped during a project in Wind Cave National Park (Galindo 2004). At 39CU820, a set of six apparently contemporaneous stone circle features ranged in exterior diameter from 5.9 to 7.2 meters. These were continuous rings, with double courses of stone on the north, northeast, or west sides. Two rings were adjoined. The site was interpreted as a single occupation camp for a maximum of 59 people and a minimum of 26–32 pack dogs, based on the site and number of the stone circles. At 39CU899, an unknown number of stone circles have been lost to bank erosion; five stone circles remain, three near the cut bank and two farther back. These range in size from 7 to 4.7 meters in exterior diameter. Interior stones in each suggest central hearths; however, the site was not excavated. Only the tops of the stones were exposed; the bases lay about 10 cm below surface (Galindo 2004). Site 39CU1196 contained 31 tipi rings arranged along both sides of a small drainage. Although originally recorded as Middle Archaic, the lone artifact dating to that period was found at a prairie dog burrow about 300 meters away from the stone circles and probably is not associated with them. The investigator estimated a maximum camp population of 318, assuming the stone circle features are contemporaneous. This would be a large encampment perhaps convened for a communal bison hunt or annual Sun Dance (Galindo 2004). A site with a large lithic procurement and chipping station and a large cluster of scrapers (39CU3041) may be associated with 39CU1196. If so, the sites together suggest a large or long-term hunting camp.

A set of 14 stone circles laid out in a half circle pattern was designated 39CU1197. These features varied in size; some had a distinct double course of rocks, indicating winter use of a tipi liner. Four sets of adjoined rings were recorded. Radiocarbon samples yielded dates within the Late Prehistoric period, averaging around 500 BP. This site was a winter camp with tipis closely spaced within a sheltered locale and containing interior hearths and hide tipi liners (Galindo 2004). Site 39CU2567 contained a tight cluster of three stone circles with a scatter of chipped-stone artifacts, including a Late Prehistoric arrow point (Galindo 2004). Outside diameters ranged around 6 to 7 meters. A larger single stone circle at 39CU2568 had relatively few stones and no interior hearth. This was interpreted as a summer camp for a single family of up to 17 persons (Galindo 2004). Unlike the other tipi camps, which lay on stream terraces, 39CU3042 was on a hill top. It contained 10 definite stone circles and several indefinite ones. The rocks forming these were widely spaced. This and the exposed location suggest a warm season camp (Galindo 2004). The tipis indicated by stone circle features could have accommodated up to 70 people. Site 39CU3044 was a lone stone circle with an outside diameter of only 4.3 meters. A very large stone circle (7 meters inside diameter) and two other stone circles were recorded at 39CU3160. Two of the circles have stones in the center, indicating possible interior hearths. Another ten stone circles were recorded as 39CU3161. This is across the stream from the large stone circle site 39CU359 and may be an extension of it (Galindo 2004). These rings vary in size and probably represent more than one camping event. A single tipi ring on a hill saddle was recorded as 39CU3163. This was interpreted as a summer season tipi camp for up to six people.

Ethnography provides abundant evidence that most stone circles are the remains of tipis (Kehoe 1960; Hind 1860[I]:338–41; Lewis 1889:162, 164–5; Lewis 1890:272; McLean 1896:577; Phillips 1927; Schultz 1907:63; Grinnell 1892:198; McClintock 1910:492, 500; Wissler 1910:108; Lowie 1922b:224; Wilson 1927:169; Hilger 1952:93).

Excavation may or may not confirm use of such sites for temporary habitation. Many stone circle features are nearly or completely devoid of artifacts or features, leaving the archaeologist to wonder whether short-term use of the site resulted in the lack of cultural material or whether the stone circle was not used for habitation at all. Others contain abundant material that clearly indicates use as a habitation. The surface attributes of a stone circle may indicate whether it was likely the remains of a tipi or had some other function. First, if the ring is much larger or smaller than the range expected for tipi features, an alternative function must be considered. Tipi ring sites in South Dakota range from 4.4 to 7.5 meters in outside diameter, with an average size of 5.7 meters (Dasovich 1998). In Montana, an average interior diameter of 4.85 meters was calculated for 16,000 stone circle sites interpreted as tipi camps (Peterson 1998). Clusters of stone circles can be identified more convincingly as tipi rings than can isolated stone circles, although identified tipi rings occur in both settings. Distance to water is not a good predictor of tipi features, but it is reasonable to assume that features on steep slopes do not reflect use of tipis. Many tipi rings contain interior hearths, but in many cases, hearths were ephemeral and have not survived. Tipi ring stones are usually the largest size that can be easily transported. Tipi rings may be scattered or well defined, and they may be solid or broken. Some have an opening to the east or south that corresponds to the doorway.



*Figure 99. Stone circle feature after excavation, 39PO61, 1992 (ARC photo).*



*Figure 100. Stone circle feature at 39CU1650; white rock at lower left has been used as a mortar, probably for pulverizing chokecherries (L. Sundstrom photo, 1998).*

It does not follow that all stone circles within this size range are the remains of former tipi camps. Other kinds of habitation features, such as the remains of eagle trappers' lodges, are within the size range of tipi rings and may not be distinguishable from tipi rings using surface data alone. Alternative functions must be considered for stone circle features that do not match the criteria typical of tipi rings. Two stone circle sites in the Black Hills contained human burials. Small rings may represent vision quest stations (Hoffman 1953:2; Dasovich 1998:30). Construction of sweat lodges used for religious purposes results in stone circles of varying sizes, depending on the number of participants (for use of stone to anchor sweat lodge covers, see T. Lewis 1889:164–165). Very large rings may have been enclosures used for game drives or ceremonial grounds. Other rings are known from ethnographic accounts to have been memorials to important events or deceased persons (McLean 1896:577; Dempsey 1956; Dempsey 1994:14; Kehoe and Kehoe 1959). The Blackfeet and Atsina believed that after death one's soul went to the "lonesome land" north of the Cypress Hills. The many tipi rings and hearths found there were believed to mark the location of the invisible lodges of the dead (Clark 1885:70). Sometimes the stone rings from a family's old tipi camp were maintained as memorials (Kehoe 1960:431–4). Aaron Beede recorded the following tradition from Standing Rock or Fort Berthold:

There is a third kind of rings that do have mystical meaning [as opposed to tipi rings and children's play circles], and a few such rings, or parts of them broken may be seen now east of the [Missouri] river. Such rings, mystically, are people departed still in a circle of friends feasting while living here. And there was the opening in the circle of stones the same as there was an opening in the circle of friends feasting. And on each side of this opening, just outside of the circle, were two stones representing the persons bringing the food to the feasters. Many tribes had a custom of having such a circle at each usual camping place for mystical protection from enemies [Beede ca. 1920].

Stone circles that represent tipis have dates ranging from the Late Archaic period through the Protohistoric period (Frison 1991). Earlier dates for stone circle sites are suggested, but not confirmed, by indirect evidence. Most stone circle sites are known from surface data alone. It is difficult to say with any certainty that the age of artifacts found on the surface of such sites corresponds to that of the stone circles. Relatively few stone circle sites have been excavated; thus, archaeologists struggle to interpret the artifacts and features found within and near them, or the lack thereof (Dasovich 1998). One promising line of research concerns how pre-contact people constructed cultural spaces by the arrangement of tipis within a camp and by how they allocated and used space within the tipi (Wilson 1995; Dasovich 1998; Oetelaar 2000).

## **Temporal Boundaries**

Only 41 stone circle sites are currently assigned a cultural or temporal affiliation in the Archaeological Research Center database. Secure dates are limited to the Late Archaic period and later. Most other sites were dated from surface artifacts, rather than artifacts or radiocarbon dates in clear association with stone circle features. Stone circle sites identified as probable tipi camps date from Late Archaic through Protohistoric times. A few historic stone circle sites have been recorded, as well. Cultural affiliation is variable, but includes all cultural groups present in the state during this time span.

## **Spatial Boundaries**

Entire state. As expected, most sites are in areas that have not been plowed, especially in the region west of the Missouri River.

## **Research Topics**

1. How old are stone circle sites? When did the tipi come into use?
2. What is the range of variability among stone circle sites?
3. Are chemical differences in soils able to relatively date stone circles on an intra-site basis (see Dormaar 1976)?
4. How does a stone circle site layout reflect social organization?
5. Does the size, location, or content of the site reflect seasonality?
6. Do the diameter or other design features of stone circles indicate temporal affiliation or change through time?
7. Can the type of entryway on a tipi be determined from stone circle attributes?
8. Can tipi type and size be discerned from stone circles?
9. Can stone circle size be used to identify tribal affiliation of site occupants through comparison of dated sites and ethnographic accounts of tipi size?
10. Does intra-site stone circle size variation and/or placement indicate social organization, status, or wealth of its occupants?
11. On an intra-site basis, do smaller diameter stone circles indicate functions other than living structures (i.e., sweat lodges, play items, etc.)?
12. What do multiple hearth features within a single stone circle represent?
13. Does the size and/or plan of a stone circle vary through seasonal rounds?
14. Does stone circle arrangement vary from band to tribe camps?
15. Are stone circle sites necessarily linked to bison hunting groups?
16. What does the variation in the distribution and density of stone circle sites in a study area (e.g., Black Hills) indicate or represent?

## **Stone Circle Sites**

**Early Archaic:** 39PE161

**Middle Archaic:** 39CU2883, 39PN375, 39MP14, 39PE191

**Late Archaic/Plains Woodland:** 39BN25, 39CU1197, 39ED17, 39MP23, 39MP14, 39MP15, 39MP21, 39MP55, 39MP57, 39MP58

**Late Prehistoric/Plains Village:** 39BE89, 39BU395, 39BU396, 39CU397, 39CU414, 39CH200, 39CU806, 39CU1197, 39CU1589, 39CU2567, 39FA392, 39FA1604, 39HN556, 39MP11, 39MP92, 39PO23, 39SH263, 39SH266, 39SH267

**Protohistoric:** 39CU878, 39GR14, 39HN556, 39SL238

**Historic:** 39FA1520, 39GR14, 39MH65

### **Stone Circle Site by Region**

**Bad-Cheyenne:** 39AR1 (currently Dewey County), 39DW170, 39DW172, 39HU48, 39HU66, 39HU70, 39HU135, 39HU151, 39HU153, 39HU156, 39HU169, 39HU171, 39HU173, 39HU175, 39HU177, 39HU186, 39HU191, 39HU192, 39HU248, 39HN258, 39HU268, 39HU276, 39PO65, 39SL91, 39SL101, 39SL102, 39SL103, 39SL106, 39SL107, 39SL109, 39SL113, 39SL117, 39SL125, 39SL149, 39SL150, 39SL152, 39SL153, 39SL154, 39SL159, 39SL160, 39SL165, 39SL166, 39SL167, 39SL173, 39SL188, 39SL208, 39SL215, 39SL226, 39SL236, 39SL240, 39SL241, 39SL242, 39SL243, 39SL248, 39SL272, 39SL275, 39SL289, 39SL292, 39SL296, 39SL299, 39SL300, 39SL301, 39SL307, 39SL315, 39SL316, 39SL324, 39SL366, 39SL370, 39SL371, 39SL380, 39SL386, 39SL387, 39SL390, 39SL392, 39SL394, 39SL395, 39SL425, 39SL434, 39SL442, 39SL445, 39SL447, 39SL448, 39SL451, 39SL453, 39SL455, 39SL485

**Belle Fourche:** 39BU14, 39BU24, 39BU138, 39BU139, 39BU140, 39BU142, 39BU143, 39BU149, 39BU161, 39BU162, 39BU163, 39BU185, 39BU201, 39BU375, 39BU377, 39BU395, 39BU396, 39BU397, 39BU545, 39MD33B, 39MD110, 39MD117, 39MD119, 39MD130, 39MD199, 39MD202, 39MD217, 39MD223, 39MD234, 39MD238, 39MD246, 39MD250, 39MD251, 39MD289, 39MD343, 39MD369, 39MD559, 39MD560, 39MD891, 39MD892, 39MD923, 39MD964, 39MD977, 39MD978, 39MD991

**Big Bend:** 39AU19, 39AU29, 39AU35, 39AU36, 39AU38, 39AU41, 39AU44, 39AU47, 39AU48, 39AU49, 39AU50, 39AU51, 39AU55, 39AU56, 39AU57, 39AU65, 39AU70, 39BF24, 39BF64, 39BF78, 39BF81, 39BR14, 39BR73, 39BR81, 39BR84, 39BR86, 39BR87, 39HD20, 39HD21, 39HD34, 39HD54, 39HD62, 39HD97, 39HE3, 39HE4, 39HE5, 39HE31, 39HE32, 39HE33, 39HE36, 39HE37, 39HE38, 39HE41, 39HE43, 39HE55, 39HE65, 39HE304, 39HE305, 39HE306, 39HE308, 39HE310, 39HE327, 39HU137, 39HU188, 39HU189, 39HU199, 39HU228, 39HU232, 39HU255, 39HU272, 39JE3, 39JE24, 39JE25, 39JE28, 39JE30, 39JE31, 39JE35, 39JE36, 39JE41, 39JE48, 39JE49, 39JE56, 39JE57, 39JE63, 39JE65, 39JE66, 39JE87, 39JE68, 39JE69, 39JE71, 39JE72, 39JE74, 39JE81, 39JE82, 39JE83, 39JE87, 39LM338, 39SL94, 39SL186, 39SL187, 39SL189, 39SL205, 39SL217, 39SL218, 39SL220, 39SL222, 39SL234, 39SL237, 39SL238, 39SL311, 39SL423, 39SL424, 39SL426, 39SL435

**Black Hills:** 39BU38, 39BU133, 39BU136, 39BU137, 39CU2, 39CU7, 39CU9, 39CU199, 39CU242, 39CU356, 39CU359, 39CU361, 39CU362, 39CU413, 39CU442, 39CU446, 39CU468, 39CU541, 39CU550, 39CU566, 39CU620, 39CU632, 39CU649, 39CU659, 39CU670, 39CU674, 39CU676, 39CU682, 39CU691, 39CU721, 39CU768, 39CU790, 39CU805, 39CU806, 38CU820, 39CU877, 39CU878, 39CU899, 39CU900, 39CU913, 39CU918, 39CU924, 39CU1072, 39CU1134, 39CU1144, 39CU1196, 39CU1197, 39CU1210, 39CU1289, 39CU1336, 39CU1399, 39CU1501, 39CU1583, 39CU1585, 39CU1586, 39CU1588, 39CU1589, 39CU1590, 39CU1598, 39CU1599, 39CU1600, 39CU1605, 39CU1606, 39CU1607, 39CU1619, 39CU1620, 39CU1621, 39CU1624, 39CU1630, 39CU1650, 39CU1668, 39CU1676, 39CU1680, 39CU1681, 39CU1682, 39CU1685, 39CU1737, 39CU2567, 39CU2568, 39CU2623, 39CU2642, 39CU2881, 39CU2882, 39CU2883, 39CU3042, 39CU3044, 39CU3160, 39CU3161, 39CU3163, 39CU3303, 39CU3403, 39CU3406, 39CU3427, 39CU3449, 39CU3477, 39CU3478, 39CU3512, 39CU3535, 39CU3567, 39CU3600, 39CU3604, 39CU3644, 39CU3689, 39CU3712, 39CU3716, 39CU3728, 39CU3803, 39CU3900, 39CU3992, 39CU3995, 39CU4104, 39CU4109, 39CU4113, 39FA1, 39FA37, 39FA49B, 39FA76, 39FA84, 39FA204, 39FA206, 39FA211, 39FA217, 39FA218, 39FA220, 39FA226, 39FA227, 39FA231, 39FA392, 39FA496, 39FA739, 39FA773, 39FA986, 39FA1029, 39FA1104, 39FA1105, 39FA1169, 39FA1174, 39FA1335, 39FA1338, 39FA1461, 39FA1520, 39FA1545, 39FA1604, 39FA1608, 39FA1855, 39FA1862, 39FA1863, 39FA1922, 39FA1940, 39FA1962, 39LA505, 39LA783, 39LA1179, 39LA1456, 39MD20, 39MD25, 39MD369, 39MD398, 39MD666, 39MD667, 39MD715, 39MD938, 39MD971, 39PN1, 39PN569, 39PN938, 39PN1242, 39PN1324, 39PN1781, 39PN3134, 39PN3672

**Central Cheyenne:** 39BU147, 39BU148, 39BU158, 39BU532, 39BU533, 39BU535, 39BU538, 39BU539, 39BU541, 39HK24, 39HK36

**Fort Randall:** 39CH170, 39CH200, 39GR14

**Grand-Moreau:** 39CA175, 39CA177, 39CA191, 39CA193, 39CA234, 39CA236, 39CA269, 39CA275, 39CA286, 39CA289, 39CA297, 39CO61, 39CO91, 39CO107, 39DW48, 39DW62, 39DW137, 39DW186, 39DW209, 39DW219, 39MP100, 39PO21, 39PO23, 39PO24, 39PO68, 39PO69, 39PO70, 39PO84, 39WW11, 39WW34, 39WW35, 39WW102, 39WW114, 39WW118, 39WW164, 39WW165, 39WW166, 39WW167, 39WW170, 39WW172, 39WW173, 39WW175, 39WW176, 39WW177, 39WW178, 39WW180, 39WW215, 39WW236, 39WW238, 39WW399, 39WW412

**Grand-Moreau Tablelands:** 39CO25, 39CO226, 39MD403, 39PE1, 39PE3, 39PE21, 39PE24, 39PE25, 39PE33, 39PE45, 39PE62, 39PE64, 39PE76, 39PE77, 39PE83, 39PE86, 39PE131, 39PE134, 39PE135, 39PE161, 39PE176, 39PE177, 39PE190, 39PE191, 39PE192, 39PE204, 39PE302, 39PE310, 39PE441, 39PE479, 39PE480

**Lower Big Sioux:** 39LN47, 39LN48, 39MH65, 39MH250

**Lower James:** 39HS12, 39HT12, 39JE38

**Middle James:** 39BE16, 39BE18, 39BE19, 39BE21, 39BE24, 39BE30, 39BE31, 39BE32, 39BE44, 39BE45, 39BE50, 39BE60, 39BE63, 39BE66, 39BE67, 39BE68, 39BE69, 39BE70, 39BE71, 39BE72, 39BE73, 39BE75, 39BE81, 39BE86, 39BE87, 39BE88, 39BE89, 39BE90,

39BE91, 39BE92, 39BE94, 39BE95, 39BE96, 39BE97, 39BE102, 39BE103, 39BE104, 39BE139, 39HD24, 39HD26, 39HD39, 39HD41, 39HD42, 39HD43, 39HD44, 39HD45, 39HD46, 39HD52, 39HD56, 39HD64, 39HD65, 39HD104, 39HD105, 39HE338, 39JE11, 39JE39, 39MN3, 39SB6, 39SB9, 39SB17, 39SB21, 39SB22, 39SB24, 39SB25, 39SB27, 39SB29, 39SB30, 39SB44, 39SB45, 39SB46, 39SB48, 39SB62

**Missouri Coteau:** 39CA218, 39CA281, 39CA282, 39CA283, 39CA292, 39CA293, 39CA295, 39CA298, 39CA299, 39CA300, 39ED3, 39ED13, 39ED18, 39ED23, 39ED51, 39ED54, 39FK6, 39FK74, 39FK77, 39FK100, 39HE9, 39HE12, 39HE311, 39HE312, 39HE313, 39HE315, 39HE317, 39HE318, 39HE319, 39HE321, 39HE322, 39HE324, 39HE327, 39HE331, 39MP8, 39MP11, 39MP12, 39MP14, 39MP15, 39MP16, 39MP19, 39MP22, 39MP25, 39MP28, 39MP29, 39MP30, 39MP31, 39MP43, 39MP45, 39MP46, 39MP47, 39MP51, 39MP52, 39MP55, 39MP57, 39MP58, 39MP74, 39MP80, 39MP96, 39PO78, 39WW94, 39WW188

**Northeast Lowlands:** 39BK4, 39CD113, 39DE10, 39DE21, 39DE26, 39DE45, 39GT17B, 39GT74, 39GT119, 39GT122, 39GT126, 39GT127, 39GT129, 39GT130, 39GT131, 39GT132, 39GT133, 39GT135, 39GT136, 39GT138, 39GT142, 39GT143, 39GT144, 39GT146, 39GT147, 39GT153, 39GT154, 39GT155, 39GT156, 39GT161, 39GT163, 39GT164, 39GT166, 39GT168, 39GT169, 39GT172, 39GT173, 39GT174, 39GT176, 39GT177, 39GT179, 39ML68, 39RO40, 39RO48, 39RO51, 39RO57, 39RO65, 39RO67, 39RO68, 39RO69

**Prairie Coteau:** 39CK24, 39CK30, 39DA44, 39DA154, 39DA156, 39DA158, 39DA166, 39DA167, 39DA177

**Sandstone Buttes:** 39BU11, 39BU25, 39BU26, 39BU28, 39BU29, 39BU35, 39BU39, 39BU159, 39BU160, 39BU164, 39BU172, 39BU173, 39BU174, 39BU175, 39BU176, 39BU177, 39BU178, 39BU179, 39BU180, 39BU374, 39HN4A, 39HN11, 39HN12, 39HN13, 39HN16, 39HN23, 39HN27, 39HN28, 39HN29, 39HN40, 39HN41, 39HN48, 39HN52, 39HN56, 39HN62, 39HN63, 39HN64, 39HN68, 39HN69, 39HN72, 39HN74, 39HN77, 39HN78, 39HN79, 39HN83, 39HN84, 39HN86, 39HN87, 39HN88, 39HN94, 39HN97, 39HN100, 39HN102, 39HN111, 39HN113, 39HN114, 39HN115, 39HN117, 39HN118, 39HN122, 39HN123, 39HN124, 39HN126, 39HN130, 39HN151, 39HN153, 39HN158, 39HN161, 39HN166, 39HN169, 39HN170, 39HN172, 39HN173, 39HN178, 39HN180, 39HN182, 39HN183, 39HN184, 39HN186, 39HN187, 39HN188, 39HN189, 39HN192, 39HN193, 39HN195, 39HN196, 39HN197, 39HN203, 39HN211, 39HN216, 39HN221, 39HN223, 39HN224, 39HN225, 39HN230, 39HN231, 39HN248, 39HN258, 39HN259, 39HN260, 39HN261, 39HN262, 39HN263, 39HN288, 39HN291, 39HN297, 39HN298, 39HN331, 39HN346, 39HN353, 39HN357, 39HN438, 39HN449, 39HN450, 39HN451, 39HN462, 39HN488, 39HN519, 39HN521, 39HN528, 39HN531, 39HN532, 39HN554, 39HN556, 39HN560, 39HN562, 39HN575, 39HN576, 39HN630, 39HN642, 39HN652, 39HN655, 39HN656, 39HN657, 39HN667, 39HN671, 39HN678, 39HN681, 39HN684, 39HN701, 39HN709, 39HN721, 39HN722, 39HN737, 39HN743, 39HN786, 39HN788, 39HN789, 39HN795, 39HN804, 39HN815, 39HN836, 39HN837, 39HN850, 39HN851, 39HN870, 39HN871, 39HN895, 39HN899, 39HN917, 39HN919, 39HN920, 39HN925, 39HN959, 39HN962, 39HN968, 39HN970, 39HN975, 39HN989, 39HN990, 39HN993, 39HN1000, 39HN1006, 39HN1008, 39HN1018, 39HN1035, 39HN1080, 39HN1147, 39HN1169, 39HN1229, 39HN1232, 39HN1234,

39HN1249, 39HN1262, 39HN1274, 39HN1297, 39HN1315, 39HN1316, 39HN1318, 39HN1320, 39HN1323, 39HN1354, 39HN1396, 39HN1450, 39HN1432

**South Fork of the Cheyenne:** 39CU3, 39CU94, 39CU412, 39CU414, 39CU416, 39CU417, 39CU507, 39CU508, 39CU509, 39CU517, 39CU574, 39CU575, 39CU1167, 39CU1170, 39CU1198, 39CU1817, 39CU1819, 39CU1824, 39CU1825, 39CU1829, 39CU1830, 39CU1840, 39CU1852, 39CU1857, 39CU1861, 39CU1874, 39CU1894, 39CU1895, 39CU1896, 39CU1897, 39CU1898, 39CU1852, 39CU1857, 39CU1926, 39CU3320, 39CU4003, 39CU4008, 39CU4009, 39FA6A, 39FA11, 39FA13, 39FA134, 39FA135, 39FA140, 39FA602, 39FA806, 39FA914, 39FA1129, 39FA1237, 39FA1768, 39MD113, 39MD946, 39PN179, 39PN180, 39PN375, 39PN416, 39PN433, 39PN435, 39PN486, 39PN757

**Upper Big Sioux:** 39BK48, 39BK155, 39BK249, 39BK252, 39BK254, 39CD45, 39CD46, 39CD87, 39DE8, 39DE14, 39DE33, 39DE68, 39DE101, 39DE109, 39GT80, 39GT87, 39GT89, 39GT90, 39GT91, 39GT92, 39GT96, 39GT101, 39GT105, 39GT106, 39GT109, 39GT111, 39GT112, 39GT113, 39GT115, 39GT135, 39HL1

**Upper James:** 39BN25, 39BN104, 39BN160, 39CK3, 39CK8, 39CK10, 39CK11, 39CK12, 39CK14, 39DA123, 39DA125, 39DA126, 39DA127, 39DA128, 39DA130, 39DA131, 39DA132, 39DA133, 39DA134, 39DA135, 39DA136, 39DA137, 39DA138, 39DA141, 39DA142, 39DA143, 39DA149, 39DA151, 39DA153, 39DA154, 39DA156, 39DA158, 39DA165, 39DA166, 39ED17, 39FK27, 39FK29, 39FK31, 39FK33, 39FK34, 39FK35, 39FK36, 39FK40, 39FK43, 39FK44, 39FK45, 39FK46, 39MP21, 39MP23, 39MP32, 39SP18, 39SP20, 39SP23, 39SP25, 39SP26, 39SP28, 39SP29, 39SP31, 39SP32, 39SP36, 39SP38, 39SP39, 39SP137, 39SP138, 39SP139, 39SP148

**Vermillion Basin:** 39MN1, 39MN13, 39TU6

**White River Badlands:** 39PN925, 39SH34, 39SH35, 39SH40, 39SH262, 39SH263, 39SH264, 39SH266, 39SH267, 39SH416

## **Excavated or Test-Excavated Stone Circle Sites**

39BK48, 39CU242, 39CU414, 39CU416, 39CU417, 39CU442, 39CU446, 39CU468, 39CU566, 39CU575, 39CU691, 39CU1144, 39CU1501, 39CU1580, 39CU1590, 39CU1605, 39CU2883, 39FA392, 39FA496, 39FA986, 39FA1029, 39FA1174, 39FA1237, 39FA1461, 39HU173, 39MD20, 39MP51, 39MP52, 39PE1, 39PE3, 39PE15, 39PE134, 39PE135, 39PE161, 39PN375, 39PN416, 39PO61

## **Stone Circle Sites Listed in National Register:**

39CU1619, 39HE331, 39HU189, 39MD20

## **Condition and Archaeological Potential**

It appears that many stone circles were destroyed by plowing. Many sites are well preserved in areas used for rangeland. Despite their abundance in South Dakota, few tipi ring sites have been

excavated. Because stone circle sites are very diverse in age, affiliation, function, and season of use, many more sites should be studied in order to understand their role in human history and adaptations in South Dakota.

The archaeological potential of stone circle sites is difficult to gauge, because only a small percentage has been either excavated or test-excavated. Of the 36 sites that were tested with at least one 1-by-1-meter unit, 25 (69%) had subsurface artifacts or features. This suggests that stone circle sites are most likely than not to have buried archaeological deposits. In addition, some sites have large amounts of artifacts exposed on the surface, which together with the presence of surface features such as hearths, bedrock mortars, and the stone circles themselves, would seem to qualify them as capable of yielding important historical information (Sundstrom 1999b). The potential of such sites to have been used for human burials or locales for religious activity underlines the need to consider carefully their potential significance as historic sites.

## **Bibliography**

Davis 1983; Dasovich 1998; Galindo 2004; Quigg and Brumley 1982; Sundstrom 1999b; Tratebas and Vagstad 1979

## **Alignments**

### **Overview**

Lines of stone on the present or a former surface are classified as alignments in the South Dakota archaeological site records. These include historic features, such as lines of field stone that farmers carried to the edges of fields, as well as prehistoric features used in communal game drives for bison, antelope, and other food animals. Straight lines of stone, shallow arcs, and converging V's are classified as alignments here, although in the site records, this term also includes boulder effigies or petroforms. The length of these lines can vary from a few meters to hundreds of meters, depending on their purpose and preservation status. At present 231 prehistoric alignments are recorded for South Dakota, along with 18 historic alignment sites. These figures do not include sites that can be otherwise classified as boulder effigies or nonfarm ruins, such as stone walls, foundations, or fence lines.

In the eastern Black Hills, a roughly linear alignment of very large stones (39CU823) runs from the crest of a hill down to a terrace leading to a small cliff. Although unusual in its use of large stones, rather than cairns of smaller rocks, this probably was part of a buffalo drive system. The alignment contains 50 large stones, many of which have one or two smaller stones next to them, extending for 300 meters along the hill slope (Galindo 2004). The alignment leads to a cairn on the hill top.

Because a fence line is shown in this approximate location on an 1893 map, and because a few fence staples were found near the alignment, it was unclear whether this alignment was the remains of a fence with rock supports or a prehistoric drive line. To further complicate the interpretation of this site, the terrace containing the lower end of the alignment is the location of a series of corrals used to round up the Wind Cave National Park bison herd once a year for inventory. While the old map and the presence of fencing materials suggested that the feature was a fence-line, other

factors argued against this interpretation. First, the alignment is crooked and the spacing between the rocks is quite variable. Second, no fence-posts were found near the rocks, nor do the rocks bear grooves from fencing wire. Third, no similar features are known—that is, places where very large rocks were used to hold fencing wire or to shore up fence posts.

Limited test excavations of the alignment showed it to be of pre-contact age (Galindo 2004). Since their emplacement, sod had built up around the base of the rocks to a depth of 9–12 cm. This contained prehistoric artifacts, meaning that the rocks were already in place when the artifacts were deposited. Because 44 artifacts were found in sediments above the base of the rocks, and these included a wide range of sizes, they clearly were not redeposited by slopewash or animal burrowing. Two stones were moved to allow excavation below them, but no artifacts were found there. This indicates, again, that the rocks had not been placed atop the prehistoric artifact deposits, but were already in place before the artifact-bearing sediments were laid down. Two post molds were found in one excavation unit at about 10 cm below surface. These were about 25 cm in diameter and 4–6 cm deep with wide, rounded bottoms. Radiocarbon dates from these features are ambiguous but suggest a date of 1660–1680 CE for these features.

Just upstream of the alignment is 39CU357, a deeply buried (50–60 cm below surface) layer of chipped-stone debris, a hearth, charcoal, fragments of two manos, bison and deer bone, an end scraper, and a portion of a Late Prehistoric arrow point (Sudderth 1964). Shovel tests at the base of the small cliff yielded numerous chipped-stone tools and debris to a depth of at least 67 cm but no bone. A charcoal sample from 50 cm below surface yielded a date of  $1110 \pm 40$  BP, also placing the site in the Late Prehistoric period. A 2 x 0.5 meter test unit on a terrace just across the creek from the small cliff contained artifacts from 20 to 110 cm below surface. These included chipping debris, a few bone fragments, a mano fragment, and a projectile point tip.

Another site in the southern Black Hills, 48WE691, also had an alignment of very large stones rather than cairns. It is a curved line of stone, ranging from 50–100 cm in diameter and extending for 400 meters along the crest and ridge of a hill toward a creek bank (Rom *et al.* 1996:3f–9). A second line of boulders apparently converges with it to form a curved V. Like 39CU823, this also led to a cairn on top of the hill. Some stone circles and scattered stone artifacts were found there, as well. This site has not been test-excavated. For now, the most reasonable conclusion is that these are the remains of drive lines and a nearby camp. Their unusual form may indicate use of some sort of barricade, as opposed to lines of people, to contain the animals. If so, they probably were used for bison, because unlike other herd animals, bison will attempt to breach a corral or fence if they can see through it, but not if it is solid. More research is needed to determine exactly how hunters used these features.

Drive lines used to funnel animals to hunters generally take the form of converging lines of stones or cairns, with two parallel lines of stones or cairns defining a sort of lane, or a T- or L-shaped line leading to a drop-off. At least one U-shaped corral feature is also recorded for South Dakota. Such lines were not high enough to have hindered the movement of animals, but probably supported brush structures or marked the places where people should stand waving hides or branches to divert the animals into a corral or off a cliff. They served as guides for directing the animals most effectively to the kill site (Frison 1984:16) or as supports for brush and branches used somewhat like scarecrows to control the movement of the animals (Brink *et al.* 2003). Low walls may have functioned as hunting blinds, especially when they occur in places near game trails,

water, or good views of open land. Relatively little is known about such sites in South Dakota. Other C- or U-shaped enclosures probably marked brush or log corrals into which animals were driven and then killed.



*Figure 101. Alignment of large boulders at 39CU823, eastern Black Hills (L. Sundstrom photo, 2006).*

Features used in ceremonial hunts functioned both as actual corrals and as ceremonial sites. Cheyenne historian George Bent recalled that before horse days, his people built ceremonial bison pounds with wings extending out from an enclosure. Bent believed that the feature in LaMoure County, North Dakota, known as Bone Hill, was one such feature (Will 1924:296, fn1). Bone Hill contained a central area paved with bison leg bones extending down the sides of the hill. From this central area, lines of bones extended outward for several hundred feet in different directions (Comfort 1873:398). The explorers Joseph Nicollet and G.K. Warren included this landmark on their 1843 and 1857 maps of the area (Bray and Bray 1976:176; Wedel 1961:234; Comfort 1873:398; Warren 1875). According to these sources, Cheyenne scouts used Bone Hill as a lookout.

A somewhat similar feature, also in former Cheyenne territory in North Dakota, is known as Ring Hill (32OL115). Ring Hill lies in Oliver County about 4–5 miles west of the Missouri River. It contains a circular stone wall 15–20 feet in diameter surrounding an interior pavement of stone. A paved walkway, 3–4 feet wide and 30–40 feet long, leads to the walled enclosure. Other stone lines also extend outward from the enclosure. On hearing a description of this feature, the Cheyenne historian George Bent thought it might be a ceremonial animal trap (Will 1924:295). Circular stone pavements, also 15–20 feet in diameter and with openings on one side, were found along the James River in Stutsman County, North Dakota, and at site 39JE6, Jerauld County, South Dakota (Lewis 1891; Wedel 1961:230–234), also within protohistoric Cheyenne territory.

Another ceremonial trap appears to be recorded for the opposite side of the Missouri River in Emmons County, North Dakota. This is documented in the historic name Holy Corral Creek (probably modern Little Beaver Creek) on the 1907 Sitting Rabbit map of the Missouri River (Thiessen *et al.* 1978). The pictograph on the map shows a corral with converging brush lines (Figure 5). Pedestrian hunters stationed along the brush lines are driving a large herd of bison toward the corral (Thiessen *et al.* 1978:154–155). Although the pictograph clearly depicts a hunt, the term “holy” or “mysterious” corral suggests not an actual corral, but a ceremonial one, existed along this creek. The creek is very near the stream Lewis and Clark recorded as “Chayenne” or “Shar Ha” creek (modern Porcupine Creek), because of its historic association with the Cheyenne tribe (Thiessen *et al.* 1978:154). These ceremonial bison traps suggest the possibility of similar features associated with ceremonial pronghorn trapping, although the specific connection is not recorded ethnographically.

## **Temporal Boundaries**

Unknown, but probably Early Archaic through Late Prehistoric. The majority of stone lines from the pre-contact era probably marked out drive lines for communal hunts of bison and antelope. Drive line and corral features are difficult to date. The bison kill site at Head-Smashed-In in Alberta, Canada, was used as early as 5700 BP, presumably including use of some of the dozens of drive lines recorded there (Brink *et al.* 2003:223). Rock art in the southern Black Hills shows people capturing animals in what appear to be stand nets; this is of Archaic age, and may be as old as 8000 BP (Sundstrom 2004). It is not known whether stones or cairns were used to demarcate the best locations for placing the stand nets, but this rock art indicates that animal drives have a very long history in the northern Great Plains. Ethnographic accounts and archaeological data indicate that animal driving continued until several decades after the horse was widely available on the Great Plains, around 1800 CE (Verbicky-Todd 1984; Brink *et al.* 2003).

## **Spatial Boundaries**

Entire state.

## **Research Topics**

1. What are the ages and cultural affiliations of alignments?
2. How were alignments used?
3. To what extent were drive-lines reused for subsequent communal hunts?

## **Alignment Sites, Not Including Historic Alignments or Sites Listed as Petroforms Below**

39BN160, 39BN161, 39BN163, 39BN164, 39BU530, 39BU531, 39BU535, 39CK10, 39CK13, 39CO430, 39CO431, 39CO432, 39CO433, 39CO434, 39CO435, 39CO436, 39CO437, 39CO438, 39CO439, 39CO440, 39CO441, 39CO442, 39CU241, 39CU823, 39CU1734, 39CU1825, 39CU2812, 39CU2817, 39CU2845?, 39CU3303, 39DA116, 39DA123, 39DA125, 39DA126, 39DA127, 39DA128, 39DA129, 39DA130, 39DA131, 39DA132, 39DA133, 39DA134, 39DA136, 39DA137, 39DA138, 39DA139, 39DA141, 39DA142, 39DA143, 39DA144, 39DA145, 39DA146, 39DA148, 39DA150, 39DA151, 39DA152, 39DA153, 39DA154, 39DA155, 39DA156, 39DA157, 39DA158, 39DA160, 39DA161, 39DA164, 39DA165, 39DA168, 39DA170, 39DA174, 39DA176, 39DA178, 39DE64, 39FA104, 39FA142, 39FA149, 39FA152, 39FA168, 39FA186, 39FA228, 39FA299, 39FA341, 39FA369, 39FA379, 39FA383, 39FA385, 39FA773, 39GT80, 39GT81, 39GT82, 39GT83, 39GT84, 39GT85, 39GT87, 39GT89, 39GT90, 39GT91, 39GT92, 39GT93, 39GT95, 39GT96, 39GT97, 39GT98, 39GT99, 39GT100, 39GT101, 39GT102, 39GT104, 39GT105, 39GT106, 39GT107, 39GT108, 39GT109, 39GT110, 39GT111, 39GT112, 39GT113, 39GT114, 39GT116, 39GT117, 39GT118, 39GT119, 39GT120, 39GT121, 39GT122, 39GT123, 39GT124, 39GT126, 39GT127, 39GT128, 39GT129, 39GT130, 39GT131, 39GT132, 39GT133, 39GT134, 39GT135, 39GT136, 39GT137, 39GT138, 39GT139, 39GT140, 39GT141, 39GT142, 39GT143, 39GT144, 39GT145, 39GT146, 39GT147, 39GT148, 39GT149, 39GT150, 39GT151, 39GT152, 39GT153, 39GT154, 39GT155, 39GT156, 39GT157, 39GT158, 39GT159, 39GT160, 39GT161, 39GT162, 39GT163, 39GT164, 39GT165, 39GT166, 39GT167, 39GT168, 39GT169, 39GT170, 39GT171, 39GT172, 39GT173, 39GT174, 39GT175, 39GT176, 39GT177, 39GT179, 39GT180, 39GT181, 39GT182, 39HD24, 39HD114, 39HN152, 39HN202, 39HN212, 39HN215, 39HN1216, 39HS58?, 39HU135, 39HU173, 39HU188, 39HU201, 39JE5, 39JE11 (U-shaped enclosure; also listed as a petroform below), 39JE84, 39LA600, 39LN108, 39MD130, 39MD891, 39MD892, 39MD920, 39MD938, 39MD964, 39MD973, 39MD976, 39MD978, 39MD982, 39MD984, 39MD985, 39MD990, 39ML97, 39PE45, 39PE310, 39PN403, 39PO47, 39RO78, 39RO110, 39SH267, 39SL152, 39SL186, 39SL243, 39SL301, 39SL308, 39SL311, 39ST142, 39ST248, 39ST280, 39ST330, 39TD105

## **Euro-American or Historic period alignment sites, not including foundations and walls:**

39BU141, 39CO32, 39CO35, 39CU1287, 39CU1396, 39CU2956, 39DA180, 39FA1512, 39HN156, 39HN789, 39JE4, 39LM149, 39MD505, 39MD524, 39ML43, 39RO78, 39RO118, 39SP145

## **Alignment Sites Listed in the National Register**

None.

## **Condition and Archaeological Potential**

Stone alignments usually are surface sites. This means that they are easily damaged by vandalism, plowing, road building, and construction projects. Some alignments in remote areas are intact and relatively undisturbed. Lines of stone exposed on the ground surface may be undermined by erosion, but otherwise maintain their original form. These are described as deflated sites. In grassy areas, surface rocks tend to capture and hold wind- and water-borne (sheet run-off) sediment, causing the sod to creep up around the sides of the rocks. Such sites may be well preserved, if difficult to see. These less visible stone alignment sites are less likely to have been looted. Careful excavations in their vicinity may contribute information important to understanding these thus far enigmatic features.

## **Bibliography**

Sundstrom 2006; Abbott *et al.* 1982.

## **Animal Kill Sites**

### **Overview**

Large mammal kill sites in South Dakota range in age from the Paleoindian Clovis Complex to the Protohistoric period and occur in all parts of the state. These include locations where only one or two animals were killed, as well as mass kill sites. Kill sites are generally characterized by large amounts of animal bone. Some also have alignments of stone that marked out drive lanes or corrals. Only five sites have been formally excavated: 39BK100, a Clovis or pre-Clovis mammoth kill and butchering site on the Big Sioux River; 39SH33, a Clovis mammoth kill and butchering site in the White River Badlands; 39HN570, an Early Archaic communal bison kill site in northwestern South Dakota; 39CU2, a Late Prehistoric buffalo jump in the southern Black Hills; and 39PN1081, a Late Prehistoric or Protohistoric bison kill site in the interior Black Hills. Other animal kill sites of known age are: 39HN108, a large bison bone bed with Middle Archaic Hanna complex or Late Archaic Pelican Lake artifacts; 39DW189, a bison kill and occupation site with Avonlea and Pelican Lake projectile points; 39SH229, a bone bed with Besant projectile points; 39HN582, a bison jump or impoundment site dating to the Late Archaic and Late Prehistoric periods; 39BN13A, a Woodland or Late Prehistoric kill or occupation site exposed in a riverbank in northeastern South Dakota; 39HD3, a bison kill site of Woodland, Great Oasis, and Initial

Middle Missouri affiliation; 39HN155, a bison kill of likely Initial Middle Missouri affiliation; 39SL201, a Late Prehistoric kill and occupation site exposed in a gully near the Missouri River; and 39PN9, a possible bison jump and occupation site radiocarbon dated at 1060 BP.

As noted, animal kill sites span the range of South Dakota prehistory. This is not surprising, since hunting and foraging were the sole means of subsistence until the Woodland period. The Brookings Mammoth site (39BK100) contains a possible pre-Clovis component consisting of butchered mammoth bone and a single stone flake (Fosha and Woodside 2003). The Lange-Ferguson site (39SH33) is a mammoth kill and butchering site locality that was extensively excavated in the early 1980s (Hannus 1985, 1990). The site produced direct evidence for the use of mammoth bone tools in butchering. Besides bone butchering tools, the site contained two reworked Clovis projectile points and the base of a third.



*Figure 102. Excavations at 39HD115, bison kill site, 2017 (ARC photo).*

Although only a small area of the Licking Bison Site was excavated, it appears to have been a place where hunters drove a herd of bison into a gully or arroyo (Fosha 2001). The southwest portion of the site contained a pile of articulated bison skeletons; the middle portion contained bison skeletons that had been divided into halves or quarters, and the northeast portion had carcasses that were more completely disarticulated. The site contained sharp, well-formed side-notched dart points like those found at the Hawken Site in the Wyoming Black Hills (Frison 1991; Frison *et al.* 1976) and the Simonsen Site in Iowa (Agogino and Frankforter 1960). Bone from the site was radiocarbon dated at 6730 BP.



Figure 103. Bone bed in eroded bank at the Licking Bison site, 39HN570, 2000 (ARC photo).



Figure 104. Bison ribs, scapula, and other bones in excavation at 39HN570, 2000 (ARC photo).

The Lightning Spring site is a Middle Archaic base camp that provides indirect evidence of communal hunts. A series of distinct occupation layers contained pronghorn, bison, bighorn sheep, and canid bone, with pronghorn dominating. Researchers hypothesized that the large amount of pronghorn bone resulted from large-scale communal game drives (Keyser *et al.* 1984; Keyser and Davis 1985). More direct evidence for Middle Archaic meat and hide procurement comes from 39HN108. This is recorded as a very extensive kill and butchering site assigned to the Hanna Complex. The site has not been excavated.

A large, stratified Late Archaic site (39HN176) in the Cave Hills contains a bison bone bed, a meat and hide processing area, and a campsite. A small test excavation revealed three layers of bison bone. Bone from Level A gave a radiocarbon date of  $1670 \pm 60$  BP; bone from Level C,  $1940 \pm 60$  BP; and bone from Level E,  $1850 \pm 50$  BP. Charcoal from a hearth gave a date of  $1860 \pm 70$  BP.



*Figure 105. View of the Nahani Site bone bed, 39HN176, Cave Hills (L. Sundstrom photo, 2008).*

Evidence for large-scale procurement of pronghorn during the Late Prehistoric Period comes from 39FA23, in the South Fork Cheyenne region at the southern edge of the Black Hills. The site was used at least five times at about 1050 to 1400 CE. It contained a variety of artifacts, including many arrow points and knives, as well as bone from a large number of pronghorn and a few bison (Lippincott 1996). Because it also contained ceramics similar to Initial Middle Missouri types, it was hypothesized to be a seasonal hunting camp of some group or groups based on the Missouri River, probably taking antelope through a communal game drive.

The Sanson Buffalo Jump (39CU2) is a Late Prehistoric site where bison were driven over a cliff. The site contains lines of stone marking a drive lane along which bison were diverted to the cliff edge. Very limited testing revealed chipped-stone tools and bison bone. Hearths were dated to 920 and 1200 BP (Agenbroad 1990) and bison bone was dated to around 650 BP (Vawser and Schilling 2013). Stone circles near with the buffalo jump were not investigated.

Cheyenne historians recalled a cliff drive the Arapahos used for trapping elk near Elk Horn Peak in the northwestern Black Hills (Grinnell 1923I:276; Schwartz 1989:50); however, no archaeological site yet matches this report.

The Kenzy Site, 39PN1081, contained the remains of several bison, dating to the Late Prehistoric and Protohistoric periods (Saunders *et al.* 1994). These animals probably were taken as individuals or in small groups, rather than in a mass kill event. This site is in one of the large, high-altitude prairies or “balds” in the Limestone Plateau. At Kenzy and other sites in this part of the Black Hills, the bison bones indicate a subspecies intermediate between prairie and mountain bison (Wigda 2007).

A very large bison bone bed in northwestern South Dakota is of unknown age. It was described in a newspaper account as “a huge mass of bones, hides, horns, and even stomach contents of bison” (*Custer County Chronicle*, undated clipping ca. 1940). According to this account, the bone bed was 100 feet in length and 6–12 feet thick, with another bone bed appearing about four feet below that. This bone bed was mined during the 1930s, and what remained of it was destroyed by the construction of Shadehill Reservoir.

Several kinds of sites are classified as either kill sites or faunal sites. The most common is a bone bed exposed in the banks of an arroyo, creek, river, or gully. If the exposure or the slope below it lacks artifacts, it is necessary to test excavate to determine whether the bone bed is archaeological or simply represents carcasses washed in and covered with sediments. Because archaeologists have investigated few such sites, the actual number of kill sites in the state is difficult to estimate. Bone, hearths, and artifacts exposed in a cut bank can indicate a site where animals were skinned and butchered, but not necessarily a kill site. Bison meat and hide processing sites are usually near the kill site, but smaller animals can easily be transported some distance for processing. Stone alignments are sometimes listed as kill sites on the assumption that these marked drive lanes. Even when this interpretation is well supported, the remains of the actual kill site may be distant or lost to erosion. Dense or extensive bone deposits with some features or artifacts in direct association provide the most convincing evidence for an animal kill site. A list of sites in each category follows:

### **Bone Deposits Exposed in Arroyo, Gully, or Stream Bank, Without Known Cultural Materials**

39BF15 (bison bone only), 39BK10 (no information), 39BO202 (probably recent), 39BO204 (bison bone), 39BU412, 39BU415 (bison or cattle), 39CD24 (bone exposed at lake shore), 39CH201 (bison bone only), 39CU570 (bison bone with one flake of uncertain association), 39CU881 (two large mammal bones in creek bank), 39CU942 (bone only eroding from creek bank), 39CU1262 (bison bone only), 39CU1982 (bison bone exposed in road cut), 39DE63, 39DW401, 39FA59 (mammoth bone), 39FA81 (bison bone only), 39FA85 (bison bone only),

39FA480 (bison bone exposed by mining operation), 39FA865 (bone with a possible split-cobble artifact), 39FA1765 (bison or cattle bone in road cut), 39GR8, 39GR20 (bone bed with one projectile point in possible association), 39HD63 (bison bone exposed by well digging), 39HD115 (bison bone bed exposed in slump), 39HN391 (bison), 39HN601 (bison bone in erosional remnant), 39HN663, 39HN634 (three bison toes in erosional remnant), 39HN768 (bison), 39HN927, 39HN1324, 39HN1436, 39HS60 (bison or cattle), 39HU281, 39HU348, 39HU349, 39JK366 (bison bone), 39LK6 (bison bone bed), 39LM71 (bison bone), 39LM88, 39LN63 (bison), 39MD949 (bison bone in slump), 39MN12 (recent bison), 39MT33, 39PE7, 39PE9, 39PE183 (bison skeleton), 39PE314, 39PO73, 39PO77 (mammoth and bison), 39SH140 (bone eroding from bluff), 39SH152 (bison or other large mammal bone bed), 39SH310 (large mammal, possibly fossil), 39SH531, 39SL100, 39ST173 (bison bone with spiral fractures indicating butchering), 39ST192 (probably bison), 39TU1, 39ZB67 (bison bone), 39ZB81 (bison bone)

### **Bone Deposits Exposed in Arroyo, Gully, or Stream Bank, with Artifacts or Features**

39BE127, 39BE128, 39BN13A, 39BU334, 39BU458, 39CL10, 39DV44, 39HK45, 39HN108, 39HN290, 39HN416, 39HN894, 39HN1332, 39HN1340, 39HN1443, 39HN1437, 39HN1442, 39HU407, 39HS61, 39MD950 (bison bone and a scraper or knife exposed in sod table), 39PN954 (a few elk bones and a flake near a spring), 39PN1719 (artifacts not clearly associated with bone), 39SB43, 39SB61, 39SB63, 39SB64, 39SB65, 39SH33, 39SH229, 39SL201 (bison bone and stone tools in gully bottom), 39SL201, 39ST245, 39ST285 (bison bone and biface eroding from cutbank), 39ST419, 39ZB84

### **Stone Alignments Identified as Possible Drive Lane Markers**

39CK5, 39CK6, 39HN152, 39JE11

### **Confirmed Animal Kill Sites**

39CU2 (Sanson Buffalo Jump), 39PN1081 (Kenzy Site), 39HD3 (Ree Heights), 39HN570 (Licking Bison), 39DW189, 39HN176 (Nahani), 39HN582 (Ladner Bison Kill), 39SH76 and 39SH77 (recorded as a buffalo jump), 39SH229

The “faunal/paleontological” category in the state site inventory is also used for all fossil sites; thus, the reader is cautioned against using this category to estimate the number of potential archaeological animal bone deposits in South Dakota.

### **Temporal Boundaries**

Pre-Clovis or Clovis through Protohistoric.

### **Spatial Boundaries**

Entire state.

## **Research Topics**

1. What techniques were used in driving and hunting game during various periods?
2. What game species were hunted communally via drives, as opposed to individual hunting of single individuals? How did hunting techniques vary for different species?
3. What landforms were used for particular kinds of drives, surrounds, and jumps?
4. How did hunting techniques and species taken change with changes in climate?
5. How did hunting techniques change with the introduction of the bow and arrow?
6. How did hunting techniques change with the introduction of the horse?
7. What are the implications regarding social organization, gender roles, and age roles for communal hunting methods, such as driving herds over cliffs or into corrals or nets?
8. What archaeological evidence can be brought to bear on interpretations of hunt-themed rock art, and vice versa?
9. What tool kits are associated with various kinds of hunting techniques?
10. How often were jumps and corrals reused?
11. What percentage of animals were butchered in various hunting situations? What techniques were used to process and preserve meat? What evidence exists for use of hides and bone?
12. What role did religious specialists (e.g., antelope priests) play in communal hunting?

## **Condition and Archaeological Potential**

Many animal kill sites in South Dakota have been destroyed or inundated by reservoirs. The Nahani Site (39HN176), exposed in a very large, recent slump block, is rapidly deteriorating from erosion and mixing of the various cultural strata. Sites 39HD3 and 39HD23 were damaged by collecting and looting. The Lange-Ferguson Site was completely excavated. In the Black Hills numerous panels of rock art dating to the Late Paleoindian and/or Archaic period show communal hunting of deer, mountain sheep and pronghorn using stand nets to corral the animals (Sundstrom 2004a). Many of these rock art panels are stranded high above the current level of stream terraces, indicating that they were created when the rocky canyons were largely filled with sediment. Because nearly all the archaeological deposits associated with this kind of rock art have eroded away, those few sites that may contain intact buried deposits are of great potential in understanding early hunting practices otherwise known only from the rock art.

Several other promising sites remain intact at the time of this writing. Because bone beds are highly visible and often contain large numbers of projectile points, they are especially vulnerable to damage from collectors or looters. Sites not removed by bone mining operations in the

nineteenth century tend to be deeply buried and discovered only when streams or washes cut into the sediments containing them. While cutbanks and gullies allow archaeologists to discover bone beds, they also threaten to remove all the bone- and artifact-bearing deposits before they can be properly excavated.

The information potential of the intact sites is very high. Most knowledge of large game procurement in the Great Plains comes from sites in the basin and range terrain in areas where bison was the primary food resource. Sites in intermediate areas such as the Missouri River trench and the James River plain will add an important dimension to views of prehistoric use of animals.

## **Bibliography**

Frison 1979, 1991; Hannus 1985, 1990

## **Cairns**

### **Overview**

Cairns, or piles of rocks, are common in South Dakota. This site type includes historic Euro-American features, prehistoric and protohistoric Native American features, and features still visited today by Native Americans for religious purposes. Prehistoric cairns frequently occur at sites with stone circles, especially those that appear to be the remains of large tipi camps (listed below). These frequently occur on stream terraces. Another common location for cairns is atop high hills, buttes, or ridges in areas that afford a wide view of the surrounding countryside. Cairns are found in most regions of South Dakota, but are most common in the Bad-Cheyenne, Belle Fourche, Big Bend, Black Hills, Grand Moreau, Sandstone Buttes, South Fork Cheyenne, and James River regions.

The function of prehistoric, Native American cairns is an ongoing puzzle in South Dakota archaeology. It is clear, however, that this type of site had more than one function (cf. Hovde 1981:7–9). As discussed above, cairns were used to mark out drive lines for communal game hunts. Some cairns appear to have marked the locations of springs. These were placed not at the spring itself, but on a high point overlooking it. Some cairns in the Cave Hills of northwestern South Dakota appear to mark passes between the valleys and mesa top. Steep cliffs prohibit passage in most places, but the cairns mark areas where one can move relatively easily into the valleys. The same pattern has been observed in the southwestern Black Hills where cliffs form a barrier between the deep box canyons and the ridge tops. Very large cairns were constructed above some cave sites used for religious purposes, including Ludlow Cave and White Buffalo Cave (Sundstrom 2003a). Another site still used for religious purposes in central South Dakota, also contains a large cairn on top of a butte. A cairn in northwestern South Dakota at site 39HN529 was placed on top of a hill that overlooked a spring and a possible rock-ledge burial.



Figure 106. Cairn at 39HN108 (L. Sundstrom photo, 2015).

Very few cairns have been excavated or even test excavated in South Dakota. Just east of the Black Hills, a very large cairn lay in the center of a site (39CU412) with stone circle features (Hovde 1981). The cairn measured 4 by 2.5 meters. Excavation revealed that this overlay a 40 cm deep pit that contained 22 flakes, a core fragment, and a biface tip. The cairn also contained flakes and stone tools. At 39HN173, 11 stone circles and 10 cairns lay on a valley terrace. Four test excavation units revealed a buried deposit of chipped-stone tools, flakes, and bone. The site was determined eligible for the National Register based on these test excavations (McCormick *et al.* 1983). Site 39SL21 contained cairns and a probable earth lodge. Test excavations at the cairns located no additional cultural material (Archaeological Research Center records). At 39FA952, a single cairn lay at the top of a cliff. No artifacts or features were found in a test unit there (Noisat 1990b). Site 39CU909 contained two cairns. A test unit near them yielded no artifacts; however, the cairns themselves were not dismantled and excavated, because they appear to be possible graves (Noisat 1990b). At 39CU477, five cairns and about 300 artifacts were found on two knolls and the saddle between them. A small test unit showed the presence of buried deposits; a Late Prehistoric projectile point was found on the surface (Noisat 1990b).

At 39PO61, a cairn was partially exposed on the surface of the site. It consisted of 15 granite boulders closely clustered in a circular pattern measuring 120 cm in diameter. The feature was partly sodded over, with lichen covering the exposed portions of the rocks. The base of the rocks lay approximately 10 cm below the surface. The feature was excavated to 40 cm below surface. About five pieces of chipping debris, one stone tool, and a few small pieces of unidentifiable bone

were found in the upper 10 cm of soil near the cairn. These are similar to artifacts found throughout the site, generally in higher densities, and thus give no clue as to the function of this cairn. The upper level of the site also contained several stone circles, interpreted as the remains of a tipi camp from at least two periods of occupation, at least one of Protohistoric age and one of Late Prehistoric age (Sundstrom 2005b).



*Figure 107. Cairn, 39HN1586 (L. Sundstrom photo, 2017).*

The Blaine Site, 39CU1144, also had both cairns and stone circles partially exposed on the surface. One cairn, composed of a very large boulder surrounded by smaller rocks, was excavated to a depth of 80 cm, the approximate base of the large boulder. Surrounding this large rock were a three chipped-stone tools, 132 pieces of chipping debris, and 17 small pieces of unidentified bone. The greatest concentration of artifacts corresponded to a level dated to the Early Archaic to Middle Archaic transition. The base of the stone circle rocks was much higher; thus, this cairn was clearly constructed before them. Another cairn exposed on the surface is likely the same age as the stone circles. These features were in a shallow, mixed deposit dating to the late Middle Archaic, Late Archaic and Late Prehistoric periods. No function was proposed for this feature (Sundstrom *et al.* 1999).



*Figure 108. One of several large cairns on a hillslope in the eastern Black Hills, 39CU3402 (L. Sundstrom photo, 2005).*

The practice of covering burials with cairns is recorded for the Lakota and Cheyenne in the mid-1800s (Carleton 1983:278; site records for 39SL108; Daniel Little Chief Drawing of Cheyenne Burial Cairn, 1891, National Anthropological Archives, Smithsonian Institution, Washington, DC, NAAINV 08659900). This practice was also recorded for other Plains tribes (Bek 1938:354). At least three cairn burials (interments within or below cairns) are recorded as archaeological sites in South Dakota. Elsewhere in the Northwestern Plains, such features are common (Milne Brumley 1974; Mike Bies, personal communication 2007). In general, these are low-profile cairns just large enough to fully cover a flexed body or a shallow grave containing a flexed burial. Such burials typically were placed on the edges of high ridges where rocky terrain would have precluded deep interment. Fourteen other cairn sites are described as possible grave sites, including both prehistoric or historic Native American graves and historic Euro-American graves. These generally were not test-excavated and contained no human bone or grave goods on the surface.

At least nine other cairns contained prayer flags, tobacco bundles, or crosses or other Christian symbols, suggesting their continued use as places of worship. These tend to be on butte or ridge tops, and have been noted most frequently in areas on or near Indian reservations. As noted above, at least three American Indian sacred sites in the state have or had large cairns on high points. All three of these places are still used for religious purposes.



*Figure 109. Historic “stone johnny” cairn made by sheep herders, South Cave Hills, 39HN687, 2008 (ARC photo).*

Historic-era cairns are often more easily interpreted. They most commonly resulted from clearing fields of rocks or from supports for fence posts or claim posts. Some historic cairns are survey markers. Shepherd monuments, called stone johnnies, are quite common in northwestern South Dakota. These are typically rather high, narrow towers made by stacking up small sandstone slabs. Other historic cairns were created for erosion control or incidental to spring developments. Some historic graves were marked with cairns, as well.

## **Temporal Boundaries**

Most cairns provide limited clues as to their antiquity, and may also be historic in nature. The following rock cairn sites are currently assigned a cultural/ temporal affiliation in the Archaeological Research Center database:

**Middle Archaic:** 39BU134, 39FA1361 (Yonkee), 39HN684, 39LA259 (Hanna)

**Late Archaic:** 39BU323 (Pelican Lake), 39HN556, 39HN684, 39LA259, 39MP57, 39PE171 (Pelican Lake)

**Late Prehistoric:** 39CU477, 39HN452, 39HN556

**Plains Village:** 39ST98 (Extended Coalescent), 39ST175 (Extended Coalescent), 39ST253?

**Protohistoric:** 39CH299, 39CH312, 39CU2566

## **Spatial Boundaries**

Entire state.

## **Research Topics**

1. What are the functions and distribution of cairns?
2. What features distinguish likely burial cairns from others?
3. Are cairns still used for religious purposes or as grave markers?
4. Why do cairns occur at stone circle sites interpreted as tipi camps? Were they piles of “extra” stones to weight tipi covers?
5. Did some cairns mark spring locations, passes, or trails? How can archaeologists recognize these?
6. What are the traditions surrounding the historic shepherd cairns commonly known as stone johnnies?
7. Can the age of a cairn be estimated by the amount of sod built up around the rocks or by the presence of lichen on the cairn?

## Distribution of Prehistoric and Unknown-Age Cairns by Region

**Bad-Cheyenne:** 39DW63, 39DW65, 39DW68, 39DW69, 39DW70, 39DW71, 39DW77, 39DW78, 39DW79, 39DW80, 39DW85, 39DW171, 39DW173, 39HU153, 39HU157, 39HU162, 39HU164, 39HU171, 39HU173, 39HU176, 39HU180, 39HU185, 39HU195, 39HU276, 39HU287, 39HU387, 39HU390, 39SL21, 39SL46, 39SL96, 39SL247, 39SL259, 39SL274, 39SL289, 39SL298, 39SL300, 39SL301, 39SL302, 39SL307, 39SL308, 39SL309, 39SL319, 39SL320, 39SL324, 39SL325, 39SL326, 39SL337, 39SL338, 39SL339, 39SL340, 39SL341, 39SL342, 39SL343, 39SL344, 39SL345, 39SL346, 39SL347, 39SL348, 39SL349, 39SL350, 39SL351, 39SL373, 39SL383, 39SL384, 39SL385, 39SL389, 39SL391, 39SL393, 39SL395, 39SL461, 39SL485, 39ST98, 39ST112, 39ST160, 39ST166, 39ST175, 39ST181, 39ST221, 39ST253, 39ST256, 39ST268, 39ST279, 39ST280, 39ST330, 39ST377, 39ST391, 39ST393

**Belle Fourche:** 39BU40, 39BU47, 39BU120, 39BU123, 39BU126, 39BU134, 39BU142, 39BU183, 39BU198, 39BU202, 39BU323, 39BU520, 39BU521, 39MD91, 39MD117, 39MD193, 39MD196, 39MD215, 39MD219, 39MD220, 39MD221, 39MD222, 39MD225, 39MD238, 39MD246, 39MD247, 39MD250, 39MD251, 39MD264, 39MD269, 39MD270, 39MD273, 39MD278, 39MD335, 39MD341, 39MD458, 39MD616, 39MD617, 39MD757, 39MD761, 39MD887, 39MD888, 39MD891, 39MD921, 39MD921, 39MD923, 39MD924, 39MD926, 39MD928, 39MD929, 39MD930, 39MD933, 39MD963, 39MD964, 39MD975, 39MD976, 39MD979, 39MD980, 39MD981, 39MD982, 39MD984, 39MD990

**Big Bend:** 39AU74, 39AU78, 39BF64, 39BF79, 39BR37, 39BR40, 39BR41, 39HD98, 39HE21, 39HE22, 39HE38, 39HE42, 39HE34, 39HE45, 39HE52, 39HE54, 39HE55, 39HE56, 39HE59, 39HE60, 39HE308, 39HE310, 39HE325, 39HE326, 39HU136, 39HU137, 39HU232, 39HU263, 39HU283, 39HU284, 39HU289, 39HU300, 39HU417, 39JE3, 39JE27, 39JE29, 39JE32, 39JE33, 39JE34, 39JE36, 39JE84, 39JE87, 39LM136, 39LM147, 39LM148, 39LM150, 39SL292, 39SL376, 39SL377

**Black Hills:** 39CU160, 39CU205, 39CU477, 39CU533, 39CU708, 39CU782, 39CU805, 39CU888, 39CU909, 39CU1022, 39CU1144, 39CU1187, 39CU1261, 39CU1361, 39CU1386, 39CU1589, 39CU1619, 39CU1620, 39CU1679, 39CU1680, 39CU1709, 39CU1737, 39CU1913, 39CU1916, 39CU2514, 39CU2566, 39CU2727, 39CU2884, 39CU2956, 39CU3003, 39CU3047, 39CU3303, 39CU3402, 39CU3516, 39CU3527, 39CU3531, 39CU3546, 39CU3670, 39CU3672, 39CU4163, 39FA62, 39FA76, 39FA84, 39FA211, 39FA234, 39FA773, 39FA952, 39FA1361, 39FA1611, 39FA1774, 39FA2568, 39LA11, 39LA48, 39LA259, 39LA1064, 39LA1068, 39LA1073, 39LA1097, 39LA1382, 39MD369, 39MD456, 39MD652, 39MD697, 39MD699, 39MD701, 39MD735, 39MD736, 39MD937, 39MD970, 39MD971, 39PN693, 39PN861, 39PN1322, 39PN1731, 39PN1781, 39PN1793, 39PN1794, 39PN1798, 39PN1799, 39PN1803, 39PN1804, 39PN1805, 39PN1825, 39PN2538, 39PN2793, 39PN3415, 39PN3545, 39PN3546, 39PN3547, 39PN3554, 39PN3555, 39PN3556, 39PN3557, 39PN3724

**Central Cheyenne:** 39BU145, 39BU148, 39CU537, 39BU538, 39HK22, 39HK23, 39HK25, 39HK31, 39HK32, 39HK33, 39HK36, 39HK44, 39HK149, 39MD516, 39ZB16, 39ZB17, 39ZB18, 39ZB19, 39ZB20, 39ZB21, 39ZB22, 39ZB23, 39ZB25

**Fort Randall:** 39CH299, 39CH300, 39CH312, 39CH200, 39GR73

**Grand-Moreau:** 39CA158, 39CA159, 39CA191, 39CA193, 39CA195, 39CA269, 39CA285, 39CA303, 39CO39, 39CO92, 39CO94, 39CO107, 39CO108, 39CO109, 39DW53, 39DW54, 39DW60, 39DW62, 39DW90, 39DW102, 39DW129, 39DW136, 39DW137, 39DW138, 39DW139, 39DW140, 39DW141, 39DW142, 39DW143, 39DW144, 39DW145, 39DW146, 39DW350, 39DW364, 39DW372, 39DW373, 39DW416, 39PE488, 39PE490, 39PE514, 39PE527, 39PO46, 39PO47, 39PO61, 39PO68, 39PO76, 39PO85, 39PO86, 39PO88, 39PO90, 39WW35, 39WW77, 39WW78, 39WW80, 39WW81, 39WW87, 39WW88, 39WW109, 39WW114, 39WW170, 39WW172, 39WW173, 39WW238, 39ZB121

**Grand-Moreau Tablelands:** 39CA287, 39CA288, 39CA289, 39CO24, 39CO150, 39DW197, 39DW352, 39DW394, 39PE4, 39PE81, 39PE82, 39PE121, 39PE128, 39PE151, 39PE171, 39PE203, 39PE206, 39PE207, 39PE235, 39PE259, 39PE310, 39PE342, 39PE474, 39PE457, 39PE482, 39PE483, 39PE514, 39ZB99

**Lower James:** 39HS8, 39HT9, 39HT33, 39HT35, 39HT71, 39HT76, 39JE12, 39YK8, 39YK9, 39YK17, 39YK19, 39YK21, 39YK26, 39YK27, 39YK28, 39YK30, 39YK32, 39YK34, 39YK77, 39YK87, 39YK88

**Lower White:** 39TD16, 39TP20

**Middle James:** 39BE20, 39BE35, 39BE56, 39BE61, 39BE69, 39BE72, 39BE76, 39BE92, 39HD24, 39HD27, 39HD57, 39HD101, 39HD114, 39HE336, 39HE337, 39SB14, 39SB23, 39SB26

**Missouri Coteau:** 39CA282, 39CA292, 39CA300, 39ED1, 39ED3, 39ED5, 39ED18, 39FK13, 39HE9, 39HE328, 39HE329, 39MP14, 39MP57, 39MP74, 39MP75

**Northeast Lowlands:** 39BK4, 39BK277, 39BK279, 39CD114, 39CD115, 39CD117, 39CD118, 39DE123, 39GT67, 39GT69, 39GT70, 39GT119, 39GT120, 39GT122, 39GT123, 39GT125, 39GT126, 39GT127, 39GT128, 39GT129, 39GT130, 39GT131, 39GT132, 39GT133, 39GT135, 39GT136, 39GT137, 39GT138, 39GT141, 39GT143, 39GT144, 39GT146, 39GT147, 39GT150, 39GT151, 39GT152, 39GT153, 39GT154, 39GT155, 39GT156, 39GT157, 39GT160, 39GT161, 39GT164, 39GT165, 39GT166, 39GT168, 39GT169, 39GT170, 39GT171, 39GT172, 39GT173, 39GT174, 39GT175, 39GT176, 39GT177, 39GT181, 39GT182, 39ML50, 39RO30, 39RO60, 39RO66, 39RO110, 39RO111, 39RO116, 39RO142

**Prairie Coteau:** 39DA68, 39DA102, 39DA116, 39DA154, 39DA156, 39DA157, 39DA158, 39DA159, 39DA160, 39DA161, 39DA162, 39DA163, 39DA165, 39DA173, 39ML17, 39ML93, 39ML94, 39RO145

**Sandstone Buttes:** 39BU28, 39BU29, 39HN57, 39HN124, 39HN166, 39HN304, 39HN305, 39HN306, 39HN309, 39HN310, 39HN329, 39HN330, 39HN332, 39HN337, 39HN358, 39HN449, 39HN452, 39HN499, 39HN512, 39HN522, 39HN523, 39HN526, 39HN529, 39HN530, 39HN556, 39HN562, 39HN580, 39HN581, 39HN583, 39HN631, 39HN642, 39HN644, 39HN651, 39HN655, 39HN665, 39HN666, 39HN668, 39HN669, 39HN672, 39HN674, 39HN677, 39HN679, 39HN684, 39HN702, 39HN709, 39HN712, 39HN722, 39HN730, 39HN736, 39HN738, 39HN752, 39HN759, 39HN760, 39HN763, 39HN765, 39HN772, 39HN773, 39HN774, 39HN789, 39HN801, 39HN803, 39HN830, 39HN835,

39HN872, 39HN873, 39HN874, 39HN875, 39HN876, 39HN883, 39HN884, 39HN885, 39HN909, 39HN918, 39HN921, 39HN922, 39HN926, 39HN967, 39HN969, 39HN970, 39HN972, 39HN975, 39HN986, 39HN993, 39HN1004, 39HN1005, 39HN1209, 39HN1169, 39HN1176, 39HN1177, 39HN1179, 39HN1184, 39HN1186, 39HN1211, 39HN1214, 39HN1215, 39HN1227, 39HN1235, 39HN1257, 39HN1263, 39HN1264, 39HN1270, 39HN1271, 39HN1272, 39HN1273, 39HN1275, 39HN1277, 39HN1318, 39HN1361, 39HN1380, 39HN1417

**South Fork of the Cheyenne:** 39CU412, 39CU416, 39CU495, 39CU498, 39CU892, 39CU1167, 39CU1817, 39CU1822, 39CU1829, 39CU1830, 39CU1850, 39CU1852, 39CU1886, 39CU1893, 39CU1898, 39CU1924, 39CU1930, 39CU1932, 39CU1940, 39CU2076, 39CU2826, 39CU2837, 39CU2956, 39CU2967, 39CU2969, 39CU2983, 39CU2985, 39CU3320, 39CU4154, 39CU4177, 39FA805, 39FA894, 39FA900, 39FA914, 39FA1064, 39FA1302, 39FA1361, 39FA1362, 39FA1380, 39FA1444, 39FA1447, 39FA1471, 39FA1496, 39FA1691, 39FA1768, 39MD483, 39MD946, 39PN1627, 39PN1741, 39PN1783, 39PN1974, 39PN1975

**Upper Big Sioux:** 39BK275, 39CD107, 39CD110, 39DE62, 39DE65, 39DE68, 39GT82, 39GT83, 39GT86, 39GT87, 39GT88, 39GT92, 39GT99, 39GT100, 39GT101, 39GT103, 39GT104, 39GT105, 39GT107, 39GT108, 39GT111, 39GT112, 39GT113, 39GT114, 39GT115, 39GT116, 39GT117

**Upper James:** 39BN119, 39BN160, 39BN161, 39BN162, 39BN165, 39BN166, 39BN167, 39CK3, 39CK4, 39CK10, 39DA71, 39DA123, 39DA124, 39DA126, 39DA127, 39DA131, 39DA132, 39DA133, 39DA134, 39DA135, 39DA136, 39DA137, 39DA138, 39DA140, 39DA143, 39DA147, 39DA148, 39DA151, 39DA155, 39ED49, 39FK108, 39MP32, 39SP145, 39SP272

**White River Badlands:** 39LM544, 39PN3638, 39SH305, 39TD35, 39TD39

**Vermillion Basin:** 39CL35

## **Historic Cairns Sites**

39BE35 (homestead), 39BU32 (stone johnny), 39BU33 (stone johnny), 39BU536, 39BU540, 39BU542, 39CD90, 39CD111, 39CD116, 39CU46, 39CU488, 39CU1773 (prospect pit), 39CU1865, 39CU1978, 39CU2884, 39CU2876 (CIVILIAN CONSERVATION CORPS erosion control), 39CU2956, 39CU2967 (survey marker), 39CU2985, 39CU3067, 39CU3571, 39CU3756 (claim post), 39CU4158, 39CU4188, 39CU4249 (boundary markers), 39DA179, 39DA180 (field stone), 39DW197, 39DW340, 39ED3, 39FA885, 39FA1405, 39FA1533, 39FA1770 (riprapping), 39FA1895, 39FA2515, 39HE44, 39HE46, 39HE47, 39HE48, 39HE49, 39HE50, 39HE51, 39HE53, 39HE57, 39HE58, 39HE62, 39HE63, 39HN156 (stone johnny), 39HN294 (stone johnny), 39HN311, 39HN459 (stone johnny), 39HN460, 39HN535 (stone johnny), 39HN687 (stone johnny), 39HN757 (stone johnny), 39HN822, 39HN855, 39HN1231, 39HN1255, 39HN1276, 39HN1361, 39HN1364, 39HN1384 (survey marker?), 39HN1391 (stone johnny), 39HN1396, 39HN1408 (stone johnny?), 39HN1412 (stone johnny), 39HN1415 (defensive structure?), 39HN1416 (defensive structure), 39HN1418 (defensive structure), 39LA11 (homestead), 39LA48 (survey marker), 39LA71, 39LA230, 39LA502, 39LA611 (survey marker), 39LA1152 (homestead), 39LA1329 (grave?), 39LA1607, 39LM136 (depressions and cairn),

39LM147, 39LM148, 39LM150, 39MD738 (depression and cairn), 39MD891, 39ML79 (homestead), 39PE68 (stone johnny?), 39PE145, 39PE217, 39PE253 (stone wall), 39PE274 (homestead), 39PE297 (school), 39PE467, 39PN441 (Civilian Conservation Corps spring development), 39PN1307 (claim post), 39PN1681 (mining), 39PN1824, 39PN1847, 39PN2655 (claim marker), 39PN3511, 39PN3589, 39RO115 (blasting debris), 39SP145 (homestead), 39ST330, 39TP19?, 39ZB99

### **Cairns at Sites with Stone Circles**

39BE69, 39BE72, 39BE92, 39BF64, 39BK4, 39BN160, 39BU28, 39BU29, 39BU120, 39BU142, 39BU148, 39BU538, 39CA191, 39CA193, 39CA269, 39CA282, 39CA285, 39CA289, 39CA292, 39CA300, 39CH200, 39CK10, 39CO107, 39CU412, 39CU415, 39CU805, 39CU1167, 39CU1589, 39CU1619, 39CU1620, 39CU1680, 39CU1737, 39CU1817, 39CU1830, 39CU1898, 39CU1924, 39CU3303, 39CU3320, 39DA123, 39DA126, 39DA127, 39DA131, 39DA132, 39DA133, 39DA134, 39DA135, 39DA136, 39DA137, 39DA138, 39DA143, 39DA151, 39DA154, 39DA156, 39DA158, 39DA165, 39DE68, 39DW60, 39DW137, 39ED1, 39ED5, 39ED18, 39ED49, 39FA76, 39FA84, 39FA211, 39FA773, 39FA914, 39FA1768, 39GT80, 39GT87, 39GT92, 39GT101, 39GT105, 39GT111, 39GT112, 39GT113, 39GT115, 39GT119, 39GT122, 39GT126, 39GT127, 39GT129, 39GT130, 39GT131, 39GT132, 39GT133, 39GT135, 39GT136, 39GT138, 39GT143, 39GT144, 39GT146, 39GT147, 39GT153, 39GT154, 39GT155, 39GT156, 39GT161, 39GT164, 39GT166, 39GT168, 39GT169, 39GT172, 39GT173, 39GT174, 39GT175, 39GT176, 39GT177, 39HD24, 39HE9, 39HE38, 39HE43, 39HE55, 39HE308, 39HK36, 39HN124, 39HN166, 39HN449, 39HN562, 39HN642, 39HN655, 39HN684, 39HN709, 39HN722, 39HN789, 39HN970, 39HN975, 39HN993, 39HN1169, 39HU137, 39HU153, 39HU171, 39HU173, 39HU232, 39HU276, 39JE3, 39JE87, 39MD117, 39MD238, 39MD246, 39MD250, 39MD369, 39MD735, 39MD923, 39MD946, 39MD964, 39MD971, 39MP14, 39MP32, 39MP57, 39MP74, 39PE310, 39PN1781, 39PO68, 39SL289, 39SL292, 39SL300, 39SL395, 39SL485, 39WW35, 39WW114, 39WW170, 39WW172, 39WW173, 39WW238

### **Cairn Sites Listed in the National Register of Historic Places**

39CO39, 39CU1619, 39FA1444, 39LM136, 39ST98

### **Condition and Archaeological Potential**

The archaeological potential of cairn sites and individual features remains to be discovered. Investigations of cairns so far have been very limited. The few excavated sites indicate that some cairns contain no artifacts or associated features, while others have significant associated deposits. Other cairn sites in the Northwestern Plains, such as the Majorville Cairn in Alberta, Canada, cairns at the Bighorn Medicine Wheel in Wyoming, and a series of cairns at Pryor Gap in Montana, have been places of worship for centuries, if not millennia. Other cairns, as noted above, marked graves. Since excavation of such sites may be inappropriate, cultural resource managers may need to develop other means of evaluating their significance.

Cairns are very vulnerable to destruction. Large, easily seen cairns are subject to looting. State site forms list nine cairns as having been looted or otherwise disturbed. The small, low profile

cairns may be missed in surveys. Because cairns are so numerous, they have sometimes been assumed to be of no archaeological or cultural interest.

## **Petroforms/Effigies**

### **Overview**

In total, 132 effigy and petroform sites are listed for South Dakota, not including those that can be reclassified as historic foundations, historic nonfarm ruins, stone circles, eagle-trapping pits, vision quest stations, habitations, cairns, hearths, or mounds. This number includes all reported sites, even if their location and status are currently unknown.

Petroforms in South Dakota can be grouped into descriptive categories. Some represent animals; some form geometric figures or straight lines. Others do not form any recognizable figures, but are nevertheless believed to be of human construction. It was not possible to categorize sites 39HD26, 39HU256, or 39SL179 based on currently available site descriptions. The “Rings/Circular Enclosure” group does not include stone circle features identified as remains of rocks used to hold down the edges of tipis. Historic (i.e., postcontact Euro-American) sites are not included here except where their age and cultural affiliation cannot be definitely established. The known Euro-American petroforms are limited to names or dates spelled out in stones on hillslopes and one image of a cross attributed to shepherders.

Because of their obvious visual representation or symbolism, boulder effigies lend themselves to functional hypotheses based on ethnographic and archaeological studies of related or similar symbolism. The ethnographic literature suggests several possible functions for boulder effigies of people and animals. These include the following: memorials to important people or events; identifiers of particular social groups, such as clans, moieties, or ethnic groups; shrines related to war, hunting, and planting; and astronomical observatories. None of these are mutually exclusive; probably different effigies had different functions, and uses changed over time, as well.

Ethnographic records provide a compelling argument that many of the stone effigies in South Dakota and elsewhere on the northern Great Plains were made to commemorate specific events. Ethnographic accounts assign a commemorative function to many boulder effigies. This is explored most thoroughly by Kehoe and Kehoe (1959). Among the Hidatsa, people remembered that some interments were covered by a mound in the outline of the deceased person’s “spirit god” (Bower 1963:171). Since effigy mounds are not known in Hidatsa territories in the Dakotas, it is likely that this refers to the practice of burying the dead in or near effigy mounds in southern Wisconsin and northern Iowa. It raises the possibility that some boulder outlines marked burial places, and identified the individual by tribal division or personal spirit helper. The hypothesized use of effigies to commemorate events receives some support from early descriptions that refer to them as “Indian memorials” or monuments (cf. Robinson 1904:38; Lewis 1889; Helmick 1897; Riggs 1904). The boulder effigies at Punished Woman’s Butte seem to have been made out of a sense of the tragic social disruption caused by the actions of a despotic leader. Similarly, the snake at Medicine Knoll was said to commemorate a great speech, probably one that inspired a victory against enemies. The turtle and line of rocks at Snake Butte commemorated the actions of a brave enemy. The bird effigy at 39TU5 was said to mark the campsite of a leader named Swan, according to Northern Cheyenne oral tradition (Leman 1987:17–20).



*Figure 110. Snake effigy on Medicine Butte, 39HU189 (note two-track road for scale; ARC photo, 1995).*

Other historic sources identify turtle, snake, and thunderbird effigies as markers of clans or tribes (Waggoner 1941). A similar function has been proposed for the effigy mounds of the Eastern Woodlands (Hall 1993; Staeck 1998; Bozshardt 2004). Effigy mounds and boulder effigies alike tend to represent animals that occur as clan or moiety names in Siouan cultures. For example, the turtle or water spirit, the snake, the thunderbird, and the panther or underwater panther are found as clan names among most Siouan tribes. Siouan tribes in the Southeast and Eastern Woodlands generally were divided into moieties representing earth/home/peace and sky/enemies/war respectively. In some instances, the earth moiety itself had two divisions, one representing water and one representing dry land. In Siouan symbolism, the turtle frequently represents the earth, the snake represents the waters of the earth, and the bird or thunderbird image represents the sky. This provides some circumstantial evidence that these effigies were expressions of an underlying social organization and religious structure.

The Lakota historian Josephine Waggoner wrote to ethnographer George Will in 1941 concerning the meaning of some symbols found in rock art and as petroforms. “A circle generally means the tribe or nation. If a turtle is engraved near it, it must be the turtle clan or tribe. [A picture of an eagle] means the eagle tribe... While in North Dakota in places we often see the [picture of turtle] tribe.” Waggoner’s reference to clans or tribes is not repeated elsewhere; however, it might plausibly refer to large divisions or moieties, one of which (turtle) was associated with the earth and the other (eagle) with the sky. The geographic distribution of snake and turtle effigies provides little support for this hypothesis. Turtle effigies occur all along the Missouri River in North and South Dakota, as well as in areas far to the west and east of the river. Snake effigies, by contrast, are concentrated in central South Dakota, with only one occurring in North Dakota. Two of three recorded bird effigies are also in central South Dakota. If the effigies refer to moieties, one would expect a more even distribution and more uniform numbers of each kind. South Dakota has seven recorded snake effigies, three or four birds, one fish, and 12 or 13 turtle effigies. If the effigies symbolize tribal identity, the distribution of particular forms should correspond to areas known to have been occupied by particular tribes. This does not appear to be the case. All types cluster in central South Dakota, with turtle, bird, and fish “outliers” extending far beyond the Missouri River. Finally, and perhaps most importantly, no such tribal symbols are recorded ethnographically. Ethnographic data further indicate that, for example, many different groups created and used turtle effigies.

An alternative explanation for the turtle effigies comes from ethnographic sources. Among both the Hidatsas and the Lakotas, turtle effigies were constructed or given offerings to make fog or rain go away and more generally for luck in hunting (Bowers 1963:337, 369–370; Lame Deer and Erdoes 1972:125–126). The Omahas also made turtle effigies to control the rain and fog, but these were intaglios or incisions rather than stone alignments (Fletcher and LaFlesche 1911:161; Dorsey 1894:410). Turtle effigies occur throughout South and North Dakota, in a distribution that points to a possible Mandan, Hidatsa, Arikara, or Dakota origin, or a combination of these. Snake effigies are more limited in range, almost exclusively limited to the east bank of the Missouri River near Pierre, South Dakota, with a single example on the James River in east-central South Dakota. Only one snake effigy is recorded for North Dakota. It lies west of Independence, North Dakota, and was used in Hidatsa and Mandan ceremonies for rain or luck in the hunt (Bowers 1963:369–70). The concentration of snake effigies along the Missouri River between the Big Bend and the mouth of Okobojo Creek suggests that these may have been shrines related to corn-growing. This was the northern homeland of the Arikara tribe, known to their neighbors as the Corn Eater tribe.

In addition, the Big Bend area is specifically mentioned in Lakota mythology as the origin place of corn horticulture. (Walker 1983:109–118; Walker 1917:183–190; Rice 1994:94–126).

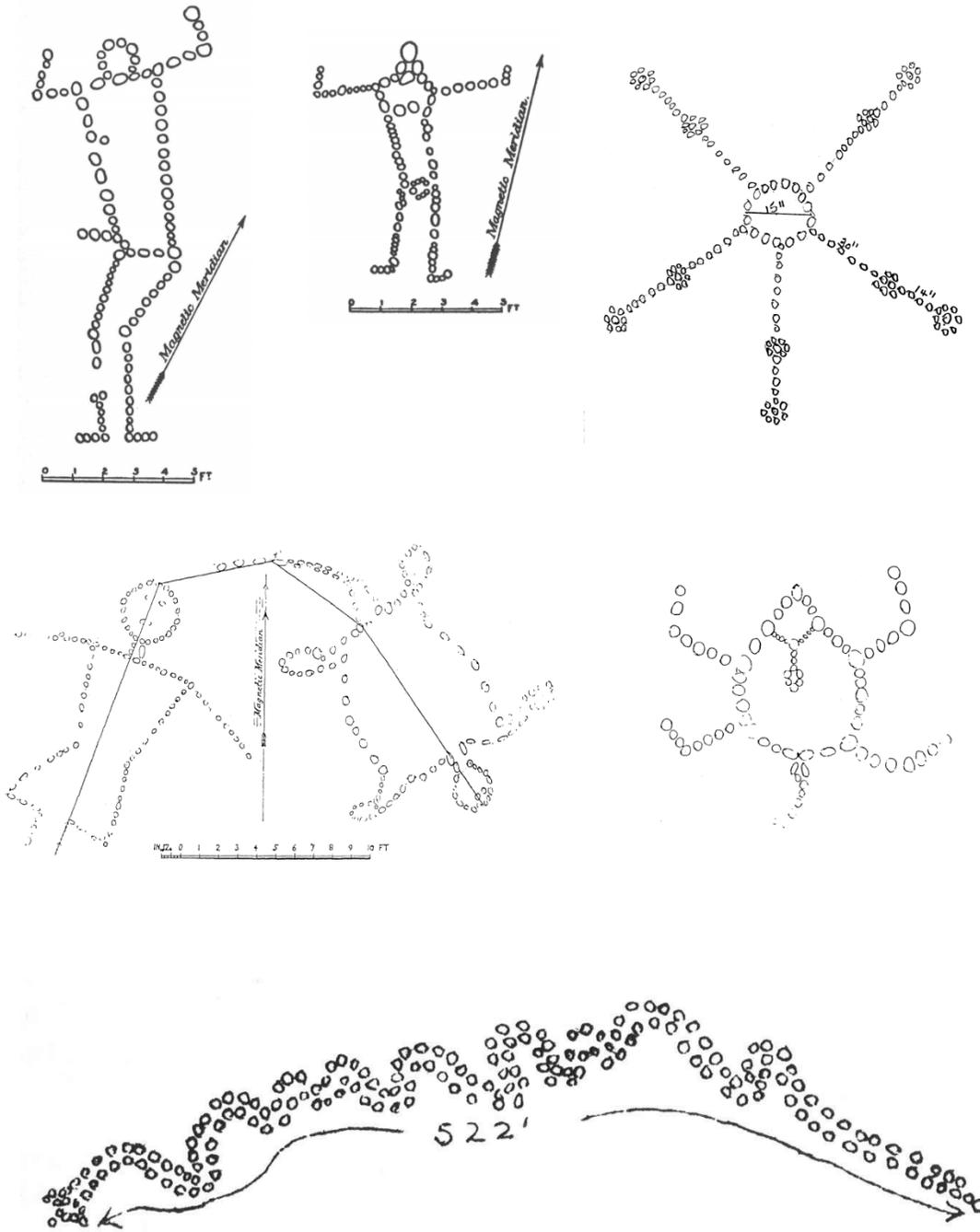


Figure 111. Historic drawings of boulder effigies in South Dakota. Top row, left and center, 39CD1 (Lewis 1889:159); right, 39CU3 (from site form); center row, left, 39JE4 (Lewis 1891:22); right, 39HU74 (Lewis field notes ca. 1889); bottom, 39HU189 (Robinson 1914).

Human effigies occur more frequently in Montana, North Dakota, and the Prairie Provinces than in South Dakota. Outside of South Dakota, most of these are male figures that probably represent the mythical Blackfoot trickster-hero Napi (Vickers 2003, 2008). The age of these features is unknown, although Vickers (2003:250–52, 2008) has proposed a Late Prehistoric age for them. None of the human effigies in South Dakota is consistent in form with Napi figures. The two or three humans at 39CD1 commemorate the story of the Punished Woman. The function of the other two human figures in the state is not apparent.

Archaeological evidence indicates that cairns and boulder lines at the Minton Turtle Effigy site in Saskatchewan were used for astronomical observations, summer solstice in particular (Kehoe and Kehoe 1979). This suggests the site was used for calendar keeping but does not preclude its use for other purposes. Nothing comparable has been identified in South Dakota.

Circles open to the east or south and with cairns inside or in front of the entryway are a common template for Northern Plains structures, including tipis, sweat lodges, Sun Dance enclosures, and other ceremonial structures. These thus likely had a religious function, but no specific information about them appears in the ethnographic literature, except for those related to animal trapping ceremonies (cf. Sundstrom 2000a). The meaning of other forms, such as rectangles, grids, and triangles cannot be determined from currently available information.

The best known and in some ways most controversial of stone alignments in the northern Great Plains are the medicine wheels. In a synthesis of 67 medicine wheels in the northern Great Plains, John Brumley recognized eight subgroups. These can be summarized as follows: 1) a circle with a large central cairn, 2) a circle open on one side with wings extending out on each side of the opening and with a central cairn, 3) a central cairn with spokes radiating outward from it, but lacking a circle outline, 4) a circle with spokes extending out from its edges, but with no central cairn, 5) a circle with spokes extending from the edge inward to the center, but with no central cairn, 6) a circle with interior spokes leading to a central cairn, 7) a circle with outward-extending spokes and a central cairn, and 8) a circle with spokes extending from a central cairn through the circle's edge and outside of it (Brumley 1988). The number of spokes varies from four to 28, but their number and arrangement is clearly based on the quartered circle design prevalent in Plains Indian religious symbolism. The medicine wheels are configured with four spokes at the cardinal or semicardinal directions. One or more additional spokes may be placed between the evenly spaced set of four, so that a wheel may contain six, seven, eight or 28 spokes, while maintaining the basic configuration of four spokes. Only three medicine wheels have been recorded in South Dakota: two in Custer County and one in Hand County. Another was reported for Corson County. Medicine wheels take a variety of forms, most with spokes radiating from a central point or a central cairn inside a circle (Brumley 1985:6).

Some researchers believe the medicine wheels were used as directional markers (Kuehn 1988; Wilson 1981:338–340) or astronomical observatories (Eddy 1974, 1981; Schlesier 1987; Kehoe and Kehoe 1979; Robinson 1981; see also Ovenden and Rodger 1981). Others were used for burial of chiefs or as commemorative markers (Kehoe 1954; Dempsey 1956:14, 177–182; Brumley 1985). A turtle effigy cairn and nearby medicine wheel in southern Alberta marked the graves of several individuals. Artifacts found there included tubular and elbow pipes, beads, pendants, Pacific shells, and pottery (Wormington and Forbis 1965:122). Archaeological investigations at the British Block Cairn recovered abundant artifacts but no human bone (Wormington and Forbis

1965:124–5). Ponca tribal historians claim that their ancestors made the Bighorn Medicine Wheel to mark their migrations into the area and to represent a Sun Dance circle (Howard 1965:18). Vision seekers fasted at some medicine wheels (Lowie 1922a; Fries 1980:20–24). Whatever their correct interpretation, there seems no question that these structures had religious significance (Quigg 1996; Hall 1985: 181–193; Grinnell 1922; Wilson 1981; Howard 1965:18). At least one medicine wheel in Alberta contains an arc of rock that separated a peninsula-like finger of land from the larger ridge system. It appears that the arc of rock was used to define an area that would be used for ceremonial purposes and a tipi camp. A similar feature, also in Alberta, cut off an arrangement of a large cairn and several smaller cairns from the connecting ridge system. In these cases, the presence of the stone barrier and gateway suggest that the areas inside them were deliberately set apart from the surrounding landscape (Brink, Wright-Fedyaniak, and Wetzell 2003). This is consistent with a ceremonial function for the medicine wheels.

Euro-American settlers in South Dakota sometimes made stone features. In sheep herding country tall cairns called stone johnnies and lower stone walls helped keep sheep from straying outside pastures and provided a way for herders to pass the time. No attempt was made here to list all such sites, which are quite common in Harding, Butte, and Perkins counties. An alignment in the form of a Latin cross (39BU141) probably was also made by a shepherd to pass the time.

Currently known alignment or effigy sites in South Dakota include the following, grouped by form:

**Snake effigies:** 39BE92, 39HU66, 39HU70, 39HU80?, 39HU189, 39JE10

**Turtle effigies:** 39BU435, 39DE28, 39HN1, 39HU66, 39HN990, 39HU74, 39HU189/39HE1, 39HU190, 39JE4, 39MH6, 39SL85?, 39SL94, 39TU7

**Bird effigies:** 39HE322, 39SL184, 39TU5?

**Other animal effigies:** Scinger Ranch, Custer County, 39HU227 (turtle or eagle), 39MH6 (fish), 39SL213 (“perhaps an animal effigy”), 39SL246 (pony)

**Human effigies:** 39CD1, 39JE4, 39SL163

**Wheel:** 39CU3, 39CU2738, 39HD22, 39RO75, 39SL94, 39SL181?

**Cross:** 39BU141 (probably historic), 39HD5

**Rectangular/subrectangular:** 39CO89, 39HD60 (grid), 39HU137, 39HE325, 39MK2, 39SL91, 39SL113, 39SL125, 39SL158, 39SL205, 39SL228, 39SL229, 39SL230, 39SL232

**Rings/circular enclosures:** 39BF64, 39DE8, 39DE28, 39HU137, 39HU251, 39HE305, 39HE310, 39JE6, 39MH20 (two connected rings), 39MP2?, 39SL92, 39SL125, 39SL147, 39SL149

**Semicircle or arc:** 39HU251, 39HU252, 39HE307, 39HE316, 39SL136, 39SL149

**Lines:** 39CD32, 39FA997, 39HE305, 39HE333, 39HE335, 39RO110, 39SH267

**Angles:** 39CU1737, 39CU2738, 39HU66, 39SL162 (triangle), 39SL186 (triangle). 39SL227 (triangle)

**U-shaped enclosures:** 39CU2812, 39JE11, 39SL149

**Lens/oval:** 39BF64. 39HU252, 39HU253, 39JK168, 39RO41, 39SL98, 39SL143

**S-shaped:** 39TD16

**Zigzag:** 39SL98

**Complex form:** 39HN256, 39PN757, 39RO78

**Cairn lines or complexes:** 39CU341, 39CU1794, 39CU2985, 39FA341, 39FA1471, 39HS58, 39HN643, 39HN679, 39HN763, 39HU276, 39HE9, 39HE310, 39SL309

**Nondescript or unknown forms:** 39CH170, 39CK7, 39CU2725, 39HU136, 39HU137, 39HU253, 39HU255, 39HU276, 39MK2, 39SL92, 39SL106, 39SL108, 39SL109, 39SL146, 39SL151, 39SL158, 39SL165, 39SL167, 39SL168, 39SL175, 39SL177, 39SL179, 39SL183, 39SL208, 39SL236, 39SL243

**Disturbed:** 39CH170, 39MK2

## **Temporal Boundaries**

Unknown, but probably about 1000 CE - Protohistoric.

## **Spatial Boundaries.**

Entire state, with the main concentrations in central South Dakota along the Missouri River.

## **Age and Cultural Affiliation of Petroforms**

At present, no definitive information exists on the age of the boulder effigies. The features have often been assumed to be very old because of the amount of sod built up around the rocks forming them. This assumption is untested, however, and likely is not a reliable indicator of the age of the features. An argument in favor of an age of several centuries for the effigies is based on their general similarity to effigy mounds occurring farther east and assigned to the period from 700 to 1100 CE (Birmingham and Rosebrough 2003). The repertoire of effigy mound designs includes snakes, turtles, thunderbirds, bears, panthers, and deer. In other words, the subject matter of effigy mounds in the Eastern Woodlands and boulder effigies in the Plains overlaps considerably. There is no direct evidence that the same people created both, however, except in the sense of the boulder effigies reflecting a general eastern origin. Dakota groups entering what is now South Dakota in the 1600s came from areas containing effigy mounds; thus, the boulder effigies might have been inspired by the effigy mounds without having the same cultural origin.

Other evidence suggests a relatively young age for the boulder effigies. First, Dakota and Nakota people retained oral traditions about these places and state that they created them. This

would limit the features to the period from about 1600 CE on, when Dakotan groups began to enter this part of the Great Plains. In the case of Punished Woman's Butte, the event commemorated appears in the Yanktonai winter count (tribal history) for the year 1784 (Howard 1976:38). This is reasonably consistent with one collected version of the story that dates the event to 1772 (Howard 1976; anon. 1943). The story of the turtle effigy (39HU74) similarly places the effigies at a fairly late date. This relates a violent encounter between a Dakota and an Arikara warrior. All recorded versions of the story are consistent in identifying the warrior as Arikara. This dates the site to the period of conflict between the Dakotans and Arikaras—a development that first appears in the Dakotan winter counts in 1694 (Howard 1976) and continued into the 1860s. A Yankton oral tradition identifies a bison-head effigy in eastern South Dakota as a Yankton and Assiniboin shrine linked to an origin story about the relationship between bison and humans (*Watertown Public Opinion*, July 3, 1976, p. 16).

A Northern Cheyenne tradition concerning the bird effigy recorded as 39TU5 was recounted in Chapter 3. Again, this suggests a relatively young age for this feature. An estimate of 1750–1825 is a reasonable estimate if the relocation of Swan's band of Cheyennes to the Black Hills is indeed commemorated by this feature. This agrees with historical estimates of the Tsistsistas Cheyenne migration into the Black Hills country (cf. Powell 1969).

The deterioration of effigy figures in South Dakota since they were first recorded is another indicator that they may not be of great antiquity. While some features have been disturbed by vandals, road building, or agricultural activities, many are still in place, but with the individual stones displaced. This is sometimes attributed to cattle trampling, but it is worth remembering that bison also trample the ground and additionally tend to create wallows in areas where the ground is disturbed. Based on observations of changes to boulder effigies during the last century, it appears unlikely that any given effigy would survive more than a few centuries at most.

The distribution of medicine wheels (circles or cairns with spokes) in the northern Great Plains corresponds to the territories of Algonkian speaking groups such as the Blackfoot Confederacy, the Cheyenne, and the Arapaho. This strongly suggests an Algonkian origin for these features. Few such features occur in South Dakota. This is not surprising, since the Cheyenne and Arapaho are the only Algonkians to have lived in the state and those for only a few centuries. Medicine wheels are much more common in Alberta, Saskatchewan, and northern Montana in Blackfoot territory, but are also found in North Dakota (Kehoe 1954; Kuehn 1988). Many of the medicine wheels in Alberta surround large cairns. In some cases it appears that the surrounding ring of stone was made later than the cairn. These appear to be accretionary cairns—that is, rock piles that were added to over centuries or millennia. Sites that fit this pattern include the British Block Cairn, the Grassy Lake Cairn, the Rumsey Cairn, and Sundial Hill (Wormington and Forbis 1965:124). Artifacts from these sites range in age from Middle Archaic to protohistoric. Farther south in Montana and the Dakotas, medicine wheels more frequently appear as an interior ring or mosaic of rock surrounded by a larger ring, with the two rings connected by as few as four, or as many as 28 spokes.

Medicine wheels continued to be constructed as late as 1940 in Alberta; archaeological dates range from 3200 BCE to 1760 CE (Kehoe and Kehoe 1979; Calder 1977; Quigg 1996:17). The longer-lived medicine wheel features probably were repaired and renewed periodically. Some archaeological evidence supports this assertion (Wormington and Forbis 1965:124; Calder 1977).

In recent years, non-Indian groups have constructed medicine wheels and other boulder alignments in imitation of American Indian religious practices. A recently constructed buffalo head mosaic in Custer County likely falls into this category.

## **Petroform Sites**

List does not including stone circle features from tipis or other shelters, historic foundations, historic nonfarm ruins, eagle-trapping pits, vision quest stations, habitations, cairns, hearths, mounds, or sites classified as alignments above. 39BE92, 39BF64, 39BU141, 39BU204, 39BU435, 39CD1, 39CD32, 39CH170 , 39CK7, 39CO89, 39CU3, 39CU823, 39CU1737, 39CU1794, 39CU1819?, 39CU1865?, 39CU1874?, 39CU2725, 39CU2738, 39CU2812, 39CU2845, 39CU2985, 39CU3448, 39CU3449, 39DE8, 39DE28, 39FA997, 39FA1471, 39HS58, 39HN1, 39HN152, 39HN256, 39HN643, 39HN679, 39HN763, 39HD5, 39HD22, 39HD26, 39HD60, 39HE1, 39HE9, 39HE305, 39HE307, 39HE310, 39HE316, 39HE322, 39HE325, 39HE333, 39HE335, 39HU66, 39HU70, 39HU74, 39HU80, 39HU136, 39HU137, 39HU189, 39HU190, 39HU227, 39HU251, 39HU252, 39HU253, 39HU255, 39HU276, 39JE4, 39JE6, 39JE10, 39JE11, 39JK168, 39MH6, 39MH20, 39MK2, 39MP2, 39PN757, 39RO41, 39RO75, 39RO110, 39SH267, 39SL85, 39SL91, 39SL92, 39SL94, 39SL98, 39SL106, 39SL108, 39SL109, 39SL113, 39SL125, 39SL136, 39SL143, 39SL146, 39SL147, 39SL149, 39SL151, 39SL158, 39SL162, 39SL163, 39SL165, 39SL167, 39SL168, 39SL175, 39SL177, 39SL179, 39SL181, 39SL183, 39SL184, 39SL205, 39SL208, 39SL213, 39SL227, 39SL228, 39SL229, 39SL230, 39SL232, 39SL236, 39SL246, 39SL308, 39SL309, 39TD16, 39TU5, 39TU7

## **Petroform Sites Listed in the National Register:**

39HN1 (effigy now destroyed; listing based on other resources), 39JE10, 39JE11, 39HD22, 39HU66, 39HU189, 39HU201, and 39TU5. Site 39HU70 was declared eligible, but not listed.

## **Condition and Archaeological Potential:**

Because petroforms are exposed, they are highly susceptible to vandalism and other disturbances. Many petroforms have been completely destroyed. Well-meaning history buffs have reconstructed others, with the result of losing information about the features' original forms. Such sites are also prone to disturbance by road construction and development projects because they cover large areas of the surface relative to other archaeological sites. When vegetation is high, such features are difficult to see. It is assumed that many were destroyed by plowing and construction during the early days of Euro-American settlement of South Dakota because settlers either did not see them or valued commercial activities over site preservation. Sites that have experienced limited or no damage have a high potential for contributing information about otherwise unknown aspects of human history in South Dakota.

## **Bibliography**

Abbott *et al.* 1982; Alex and Zimmerman 1977; Buechler 1977; Deloria 1987; Howard 1972; Lewis 1889, 1891; Nelson 1973; Over 1941; Ranney 1981; Riggs 1904; D. Robinson 1925; Sigstad and Biggs 1973–74; Sundstrom 2006; Todd 1886; Whitten 1983.

# Prehistoric Quarries

## Overview

As recorded in the Archaeological Research Center database, quarries include both beds of tool-stone and boulders or cobbles of tool-stone redeposited by stream or wind action. Essentially any area where tool-stone was obtained is classed as a quarry. Bedrock quarries are often quite extensive and may contain features such as quarry pits and tunnels. Some kinds of tool-stone are more easily worked if they have not been exposed to the air; thus, tool makers often tunneled or burrowed to reach fresh stone. Boulder quarries usually contain “tested” cobbles or boulders—that is, stone from which part of the weathering rind has been chipped away to reveal the quality of the underlying stone. Both types of quarry site contain numerous pieces of shattered rock and other chipping debris, as well as blanks or tools broken and discarded during manufacture. Stone mauls and hammerstones are frequently found at quarry sites. The Plenty Maul (39SH91) and Nelson’s Butte (39SH78) sites in the White River Badlands contained numerous grooved mauls apparently used for removing and testing pieces of tool-stone (Lueck and Butterbrodt 1983:27–28). South Dakota contains some of the largest tool-stone quarries in the northern Great Plains, but archaeologists from nearby regions have often ignored these quarries. This ignorance of South Dakota’s tool-stone resources has led to misinterpretations of the extent of migration and trade territories. Simply put, if high quality tool-stone is available near a site, it is unlikely that similar material was carried in from distant areas (cf. Reher and Frison 1980—Vore Site; Frison and Stanford 1982—Agate Basin). South Dakota’s prehistoric quarries have been well documented in the archaeological and geological literature (Wedel 1961: 272-273; Over 1924, 1948); however, materials from them are often assigned to quarries outside state boundaries, such as the Knife River Flint quarries in North Dakota, the Flattop quarry in northeastern Colorado, or the Hartville Uplift (Spanish Diggings) in Wyoming.

The function of all sites listed as quarries was obtaining raw materials for tool or paint production. The category includes both true quarries, where stone or minerals were extracted in large quantities by digging, prying, or mining, and expedient stone procurement sites at which surface cobbles, boulders, or slabs of rocks could simply be picked up off the ground. Although quarries are primarily places where people obtained tool-stone for practical purposes, some quarries also had religious importance. For example, the catlinite outcrops on the South Dakota-Minnesota border were believed to have formed from human blood when the world was destroyed in a great flood. This important quarry area was a sort of neutral ground in which one enemy was safe from another while gathering the sacred pipestone. Indigenous people also have often considered paint or pigment quarries sacred places.

Techniques used for gathering tool-stone vary according to both environmental and cultural factors. Four basic cultural patterns of tool-stone procurement are embedded, encounter, indirect, and logistical. Embedded procurement means that people found stone within territories they traversed in the course of subsistence activities, such as gathering plants or hunting animals. Encounter procurement means that the movement of the group included visits to quarry sites where they could get the materials needed for tools. Indirect procurement refers to trade between groups, such that one group takes the stone from its outcrop and transfers it to another group. Logistical procurement means that special task groups traveled to quarries to get tool-stone for their larger

community. Presumably, all four of these patterns occurred in prehistoric South Dakota. Certainly, trade in tool-stone is indicated by the presence of small amount of stone from distant sources. The other patterns are more difficult to reconstruct from archaeological remains.

Stone is removed from its source through simply picking up cobbles from the surface, breaking pieces off from an exposed outcrop, or by excavation. Excavation involves several methods. Most common in the South Dakota quarry sites is pitting, in which overburden is removed in wide, shallow pits that extend down to the desired bedrock. A few sites have more complicated excavations in the forms of tunnels or shafts leading to deep outcrops. Even where tool-stone outcrops are exposed to the surface, excavation features may be present, presumably to give access to better quality stone or stone that has not been oxidized or dehydrated by exposure to the air.

Major quarries in South Dakota include Flint Hill (39FA49), Battle Mountain (39FA49), Chilson Mountain (39FA761), Parker Peak (39FA762), West Horse Creek (39SH37), Nelson Butte (39SH78), Plenty Maul (39SH91), Bijou Hills, Fox Hills, and various locations in the Cave Hills and Slim Buttes. Sioux quartzite outcrops near Pipestone, Minnesota, were an important source of material for ground-stone items such as pipes, tobacco cutting boards, and ornaments. Significant secondary deposits of tool-stone occur on the Pleistocene terraces of the eastern Black Hills, as lag deposits and ancient river deposits in the southern Black Hills and Badlands, and within glacial till in the eastern portion of the state. Each area of South Dakota with significant tool-stone resources is discussed below.

Probably the best known of the South Dakota quarries is Flint Hill on the southeastern edge of the Black Hills (Over 1924, 1948; Witzel and Hartley 1976). This site covers much of the mountain, especially on its western and southern sides. Quarry pits up to 10 meters in diameter and 5 meters in depth are scattered round the mountaintop. Large amounts of quarry debris cover the ground around and within the pits. Camp and workshop sites, indicated by stone circles and scatters of chipping debris, cover much of the gently sloping top of Flint Hill. Although Flint Hill is the best documented of the Hogback quartzite quarries, other large quartzite quarries are present in the outer Black Hills, including Battle Mountain (39FA55), Parker Peak (39FA762), Chilson Mountain (39FA761), Cowboy Hill (39PN1), French Creek where it cuts through the Hogback ridge (39CU1, 39CU8), Cattail Ridge Quarry (39CU875), and the Rampe Quarry (39CU3428). One side of Battle Mountain has a large tunnel with evidence of fires used to heat the rock to make it easier to remove from the outcrop. The other sites contain quarry pits and/or large discard piles. Quarry sites elsewhere in South Dakota, except the pipestone quarries near the Minnesota border, lack the large pits and discard piles seen at the Black Hills quartzite quarries.

An ongoing problem in studies of tool-stone distribution on the northern Great Plains is distinguishing Knife River flint from similar stone that outcrops throughout the region, including several locations in western South Dakota (Nowak *et al.* 1984:90; Nowak 1982; Hoard *et al.* 1992; Greiser 1983). Knife River flint comes from an extensive series of quarries in western North Dakota. Fluorescence is helpful in distinguishing Knife River flint from various other chalcedonies; Knife River flint tends to fluoresce orange as distinct from similar appearing stone that does not fluoresce or fluoresces yellow or green. This technique has rarely been applied, however, because many researchers simply assume that any semi-translucent brown tool-stone comes from the Knife River quarries. Needless to say, this has led to conclusions about group mobility and territory size that are simply not supported by the data.



*Figure 112. Hogback Quartzite chipping debris covering slope of Battle Mountain, southern Black Hills, 39FA55 (L. Sundstrom photo. 2011).*



*Figure 113. 1925 photo of quarry debris at Flint Hill, 39FA49, southern Black Hills (ARC photo).*

A related problem is the lack of a complete inventory of tool-stone sources. Archaeologists have tended to use only superficial features to identify some kind of tool-stone, on the assumption that all similar-appearing rock comes from the same place. Discoveries of new sources of similar stone then invalidate the earlier studies (Church 1990). Because tool-stone quarries are often very small in terms of the geological makeup of a region and because they include secondary deposits such as gravel terraces, geological studies often are of little help to archaeological ones. Archaeologists must attempt to study quarries on a scale appropriate to archaeological questions, but at the same time need to apply more rigorous chemical and physical analysis to tool-stone specimens.

# Lithic Sources on the Northern Plains

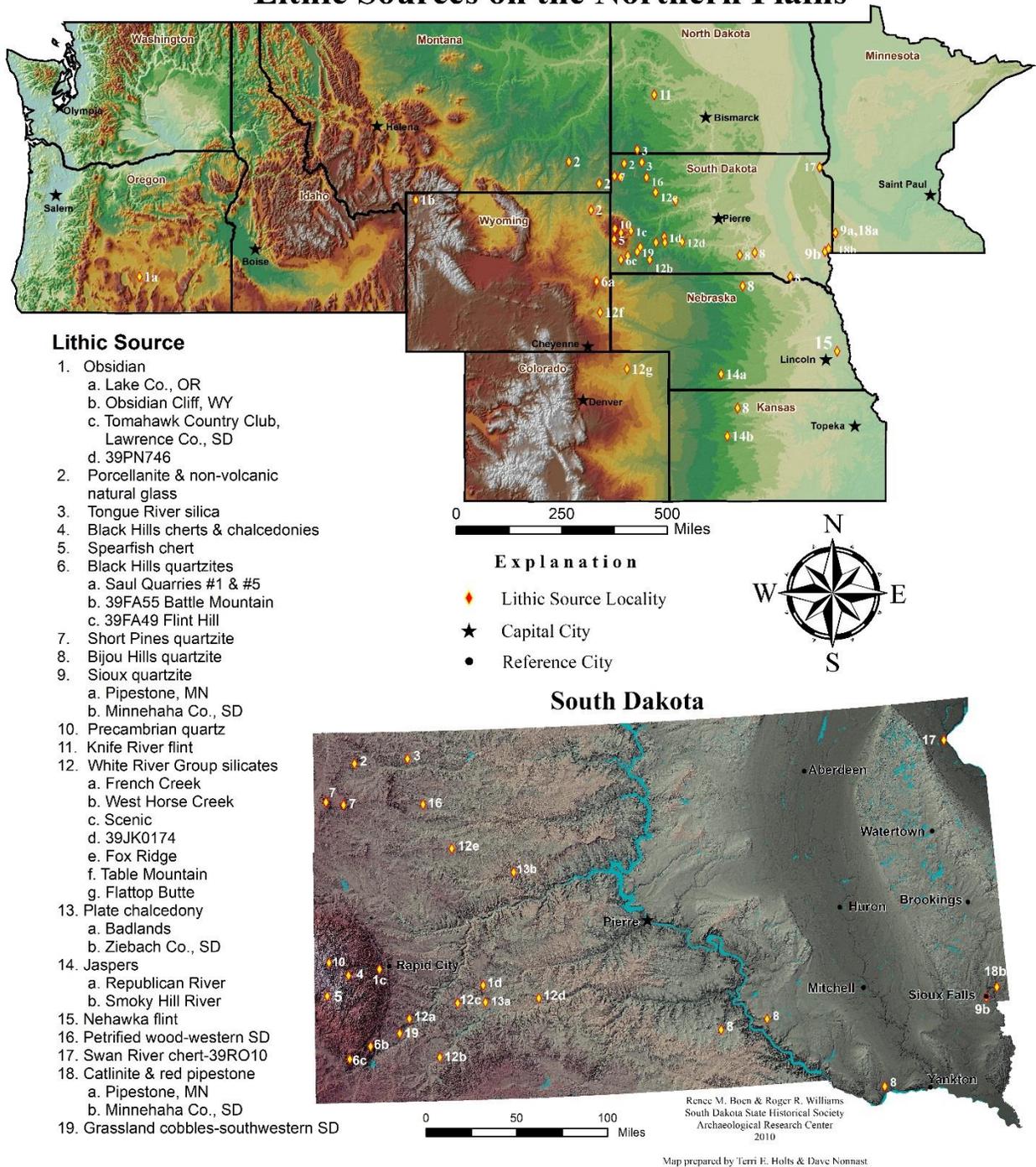


Figure 114. Map of major lithic sources on the northern Great Plains, South Dakota Archaeological Research Center, 2018.

Another problem is inconsistent use of terms. For example, some archaeologists use the term *porcellanite* for the baked shales and claystones that form in burning coal beds (Fredlund 1976; Church 1990), while others use this term to refer in general to material that is more granular than chert but less granular than quartzites or silicified sediments (Blatt *et al.* 1980; Miller 1991). In South Dakota, most archaeologists use *porcellanite* for dull to semi-vitreous chert-like materials from the coal-bearing areas of the Powder River Basin, eastern Montana, and northwestern South Dakota. This is how the term is used in this report, as well. The term *clinker* is used for both the porous, spongy rock otherwise referred to as scoria, as well as various grades of baked shales from coal beds (Porter 1962; Schneider 2007). The latter application encompasses chert-like, opaque stone as well as translucent, obsidian-like non-volcanic glass. In South Dakota, this material is rarely found in archaeological contexts; where it does occur, archaeologists refer to it as baked shale, porcellanite, or non-volcanic glass. So far attempts to devise standard terminology (cf. Miller 1991; Church 1990; Schneider 2007) have met with limited success. Field archaeologists must classify tool-stone simply by looking at it, and even in the laboratory, most archaeologists do not have access to apparatus for chemical analysis of stone. Nevertheless, studies of tool-stone sources are gradually improving in accuracy, as source analysis of obsidian demonstrates (cf. Hughes 1993, 1998).

**White River Badlands** (Scenic chalcedony, West Horse chert, Badlands plate chalcedony, obsidian). The main tool-stones of the White River Badlands are known as West Horse Creek chert and Scenic chalcedony. These brown to purple translucent rocks outcrop from the Chadron and Brule formations at the West Horse Creek quarry (39SH37), Nelson Butte (39SH78), 39SH81, 39SH83, and many other locales in the Badlands (Sundstrom and Malone 1982; Nowak 1982; Nowak *et al.* 1984; Nowak and Hannus 1985; Lueck and Butterbrodt 1984; Hoard *et al.* 1992). At the West Horse Creek quarry, a layer of dark brown translucent chalcedony (Scenic chalcedony) overlies a layer of purplish-gray chert (West Horse chert) (Nowak *et al.* 1984:12–13). West Horse chert is visually similar to Flattop Chalcedony from northeastern Colorado, another Chadron Formation material (Nowak 1982; Hoard *et al.* 1992; Greiser 1983), while Scenic chalcedony is often mistaken for Knife River flint (Ahler 1975b:6, 1977:136; Clayton *et al.* 1972). Scenic chalcedony ranges from reddish grey to dark grayish brown, is translucent, and is very finely grained. West Horse chert is coarser and more opaque than Scenic chalcedony; it ranges from purple-gray to dark gray and may contain mottles, bands or veins of gray or red. Researchers have succeeded in differentiating the Badlands material from that from Flattop Butte through neutron activation analysis (Hoard *et al.* 1992). These materials formed when silica-rich volcanic ash lenses were dissolved by ground water and resolidified as the pockets of chert or chalcedony (Nowak *et al.* 1984:86–91).

Badlands plate chalcedony forms as thin, hard plates of silica in cracks in Chadron and Brule Formation claystones. The silica precipitates from the surrounding rock and resolidifies as plates. The fibrous chalcedony aligns itself perpendicular to the platy exterior. These light gray to light pink plates have a bumpy, pitted cortex on both sides, but the thin edges are easily sharpened into knives by removing a few flakes from the outside edge. These implements are referred to as Badlands knives. They are found throughout western South Dakota and along the Missouri River. No specific procurement sites for Badlands plate chalcedony have been identified (Nowak 1982).

A secondary deposit of obsidian cobbles, presumably from the Black Hills, occurs with other Black Hills minerals (including schist and quartz) at one site in the Badlands (Nowak 1982). This

is significant as the closest known source of obsidian suitable for stone tools in South Dakota. Otherwise, the nearest obsidian comes from the Yellowstone area of northwestern Wyoming.

Secondary deposits of chert and chalcedony cobbles were another source of tool-stone in the Badlands (Ahler 1977:134; Nowak 1982; Rood *et al.* 1984; Miller 1994). These are materials carried from the Black Hills by ancient streams. Some reworked Scenic chalcedony and West Horse Creek chert may also occur in this form (cf. Frost and Redmond 1998); however, descriptions of the cobble quarries are not detailed enough to make this connection. A concentration of petrified wood, quarried prehistorically, occurs in the Badlands, as well.

**Black Hills Hogback** (Hogback quartzite, Morrison silicified siltstone, petrified wood). Flint Hill or Hogback quartzite or orthoquartzite, sometimes also referred to as Fall River quartzite outcrops throughout the sandstones ringing the Black Hills uplift. (The term “Black Hills quartzite” should be retired, as other kinds of quartzite tool-stone occur in the Black Hills.) This is a dense, very hard orthoquartzite with excellent conchoidal fracture. It is a silica-cemented sandstone composed of resistant quartz grains. Individual grains are visible to the naked eye, giving the rock a granular luster. All but very thin flakes are opaque. It outcrops as lenses, pods, and beds within the massive Fall River and Lakota Formation and sandstones (Bell and Post 1971:550). It occurs in every color except green and blue. Mottled and banded varieties are common. This quartzite is equivalent to the Cloverly Formation quartzite mined at the Spanish Diggings (Hartville Uplift) quarries in southeastern Wyoming (Saul 1964). Spanish Diggings and Hogback quartzites are nearly identical in color and texture; probably much of the material identified as Spanish Diggings is from the Black Hills. One study found consistent differences in quartzite from Flint Hills and Spanish Diggings in grain size and amount of cementing material (Witzel and Hartley 1976); however, archaeologists have not applied the petrographic methods necessary to recognize these differences. A study of orthoquartzites from sites in the Bear Lodge range used X-ray fluorescence to distinguish Fall River from Lakota quartzites, with some specimens intermediate in elemental composition between the two (Schneider 2007). This study did not incorporate any quartzites from the South Dakota Black Hills and thus is of limited utility to archaeologists working there. Church (1990) notes that Fall River quartzite does not fluoresce under UV light, contains no bioclasts, and occurs in uniform, mottled, or banded structures.

Other orthoquartzites crop out in the interior Black Hills. These are generally grainier and more difficult to work than the Hogback quartzite and were rarely used for tool-making. One outcrop of Deadwood quartzite has been reported as a quarry, as have several outcrops of Minnelusa quartzite.

Morrison silicified siltstone, also referred to as Morrison quartzite or Morrison silicified sediment is a gray, tan, yellow, or red fine-grained quartzite assumed to originate in Morrison formation exposures in the Hogback of the South Dakota and Wyoming Black Hills, with more definite occurrences in the Powder River Basin. This material has a distinctive sparkly luster. It has good conchoidal fracture but often contains many inclusions and irregularities. It typically appears marled due to fossil inclusions such as root casts and burrows. It does not fluoresce under UV light (Church 1990). Silicified sediment from the Black Hills is difficult to categorize with certainty, because Black Hills geologists have not recognized this type of rock as occurring within the Morrison formation there, although it is found in Morrison exposures in Wyoming (Nowak 1982:16.4; Roger Williams, personal communication, 2007; Schneider 2007). Furthermore, Morrison silicified siltstone is virtually identical visually to Tongue River silicified sediment from

northwestern South Dakota and the Powder River Basin (Schneider 2007; Church 1990; Tratebas 1986; Craig 1983). Analysis of specimens from the Wyoming Black Hills suggests that it may eventually be possible to determine chemical signatures for the various silicified sediment sources that will prove more reliable than visual inspection alone (Schneider 2007).

Petrified or silicified wood occurs throughout the Hogback formation but is especially common in the southern rim of the Black Hills. Well silicified specimens are hard, smooth, and translucent. This material can be difficult to distinguish visually from other chalcedonies, such as Flattop, Scenic, and Knife River flint, but may retain some remnants of the wood grain that mark it as petrified wood. While this material was used extensively for tool-making in northwestern South Dakota, it is a minor constituent if it appears at all in assemblages from the Black Hills. One can speculate that it was passed over in favor of the abundant high-quality cherts and quartzites to be found in the southern Black Hills.

Minor amounts of chalcedony occur within the Morrison formation (Church 1990). These are smooth, translucent nodules or tabular pieces ranging from light gray to tan to pink. Some samples reddened when heated (Church 1990). Nodular specimens from the Bear Lodge range fluoresce with a weak to strong patchy brown color under UV light. This chalcedony has a brown or orange cortex and may be mottled, marled, or banded.

**Black Hills Interior** (Spearfish chert, Minnelusa chert, Pahasapa chert, quartzite, quartz). An area of relatively soft clay- and sandstones, oxidized to bright shades of red, ocher, and purple, lies just inside the Black Hills Hogback. Spearfish chert, named for the formation in which it occurs, outcrops as flattened nodules within these claystones and sandstones. Spearfish chert is very fine-grained and usually dark red to purple, sometimes with white mottling. Quarries are simply accessible outcrops from which nodules or slabs of the chert have been removed by prying them loose from the surrounding sediments.

The massive limestones that ring the central Black Hills contain abundant outcrops of chert, defined here as smooth, opaque siliceous rock that fractures conchoidally. Because these cherts are highly variable in their chemical makeup and occur within a small geographic area, attempts to separate one from another may prove more frustrating than useful.

**Cave Hills and Slim Buttes** (Tongue River silicified siltstone, petrified wood, porcellanite, green glassy chert). Tongue River silicified siltstone (or silicified sediment) (TRSS) occurs throughout the Cave Hills as blocky or rounded lag deposits lying atop the mesas and buttes. This rock is sometimes referred to as Tongue River silica. It is part of the Paleocene Tongue River Formation. Quarries consist of areas with large boulders of TRSS from which pieces have been removed by hammering or splitting the boulders (Keyser and Fagan 1987). This material is very hard and well cemented. It varies from very fine grained to somewhat coarse grained, but is of a finer grain than quartzite. TRSS is usually yellow to gray, but red and brown pieces also occur, as do mottled or banded pieces. It has a characteristic sparkle when examined in sunlight. This material contains numerous root and stem casts and holes, which in some cases, render it poor material for small tools. It was favored for large tools such as choppers or axes, probably due to its hardness. In the Sandstone Buttes area, it is the most common material for all chipped-stone tools. TRSS occurs within glacial deposits in eastern South Dakota and makes up a significant fraction of the tool-stone found in sites there. It occurs in gravels along the Grand River from the

Sandstone Buttes region to the Missouri River. Virtually identical silicified sediment from the Black Hills assigned to the Morrison Formation is difficult to categorize with certainty, because Black Hills geologists do not recognize this type of rock as occurring within the Morrison formation there, although it is found in Morrison exposures in Wyoming (Nowak 1982:16.4; Roger Williams, personal communication, 2007; Schneider 2007). For a minerals analysis of TRSS see Porter 1962.

Petrified wood, also called silicified wood, is common throughout the Sandstone Buttes region and Grand-Moreau Tablelands and is one of the most common tool-stones in those regions. Because it occurs as individual tabular or cylindrical pieces throughout the area, quarries, as such, are rare. Two sites in Perkins County, 39PE193 and 39PE194, and one in Ziebach (39ZB83) contained large amounts of petrified wood nodules and chipping debris.

A quarried outcrop of porcellanite occurs in the Slim Buttes (Sundstrom 2008). Porcellanite is essentially a baked shale or claystone formed when underlying coal seams burn. This material has a smooth, waxy luster and ranges from gray to red, with some yellow, brown, and black areas. The Slim Buttes quarry is dark red with some black cortex. Porcellanite is more often linked to coal-bearing areas of eastern Montana and Wyoming and western North Dakota. It occurs in archaeological sites throughout western South Dakota, especially those dating to the Late Prehistoric period.

This area also contains outcrops of a smooth, brownish chalcedony that appears to be the equivalent of the chalcedonies at West Horse Creek in the White River Badlands and Flattop Butte in northeastern Colorado.

**Fox Hills.** The Fox Hills or Fox Ridge in northern Meade County contains outcrops of chalcedony in the form of nodules eroding from Brule Formation rock (Roberts and Rapp 1965). This tool-stone is translucent and occurs in shades of light gray and brown. It luminesces a bright lime green. Some has dendritic inclusions and is referred to as moss agate or Fox Ridge Agate. Site 39MD232 is a Fox Hills chalcedony quarry site.

**Arrowhead Buttes.** A series of buttes along Flint Rock Creek in north-central South Dakota at the western edge of the Cheyenne River Indian Reservation contain outcrops of a Chadron Formation chert. This chert ranges in color from tan, brown, grayish brown, greenish brown, and very dark grayish brown. Some specimens contain light blue chalcedony inclusions. The quality of this chert is highly variable. That preferred for tool-stone is free of inclusions and has a smooth, shiny luster.

**Bijou Hills.** The Bijou Hills and Iona hills and the Ponca-Missouri divide of Tripp, Brule, Gregory, and Charles Mix counties of south-central South Dakota contain massive outcrops of a green silicified sediment. This material is commonly referred to as Bijou Hills quartzite, although it is not a true quartzite. The material is fine to medium grained and grayish to olive green or greenish yellow. It is readily identifiable in artifacts from South Dakota and surrounding regions, because it is the only green quartzite-like material there. The material sparkles when examined in sunlight and forms a milky white patina when exposed to the air. Unlike other silicified sediments, Bijou Hills contains significant amounts of feldspars (Frye and Swineford 1946; Porter 1962); for

more information on minerals analysis, see Porter 1962:268–269 and Church 1994:58–60). Outcrops of green quartzite-like rock also occur in adjacent portions of Nebraska (Church 1994).

**Bijou Hills** silicified sediment occurs most frequently near its source area—that is, along the Missouri River south of the mouth of the White River (C. Johnson 1984; Church 1994). It is a minor component of tool-stone assemblages in Middle Missouri sites (Ahler 1977, 1989). It occurs in very small amounts in the Badlands and Sandstone Buttes regions (Nowak and Hannus 1985; Keyser and Fagan 1987). Outside the state, it occurs in western Iowa (Lensink 1987) and Nebraska (Holen 1983). The Yankton Dakota name for the Bijou Hills, Knife Hills, refers to the tool-stone there (Howard 1972:295).

**Pipestone Area.** Catlinite is a red pipestone found outcropping with the Sioux quartzite of eastern South Dakota and southwestern Minnesota (Holmes 1919: 253–265; Sigstad 1970:377; Scott et al. 2006). The most extensive catlinite quarries are at Pipestone National Monument in Minnesota; however, catlinite outcrops in South Dakota, as well, and was very likely quarried on a somewhat smaller scale there. Catlinite is quarried by digging down to rock that has not been exposed to the air and either prying or sawing it away from the outcrop. One catlinite quarry is recorded in South Dakota (39MH9); other outcrops are found along Skunk Creek, along Split Rock Creek near Palisades State Park, and along Split Rock Creek north of Corson, South Dakota (Dennis Tomhave, South Dakota Geological Survey, personal communication, 2007).

**Other Quarried Materials.** Gypsum crystals and friable pieces of gypsum (selenite) are found in archaeological sites throughout the state, but especially along the Missouri River (Porter 1962). This material is common in the redbeds of the Spearfish Formation of the Black Hills and interbedded in shales along the Missouri River. A very large gypsum quarry occurs in the Red Valley of the Wyoming Black Hills (Wedel 1961:275; Libby 1920:165). Gypsum was powdered and used as a sizing for quillwork, as a cleaner for leather clothing, and for cleaning and finishing arrows (Gilmore 1925:284; Grinnell 1923:164, 175). Crystals and powder had ritual uses, as well; for example, in creating designs on altars for Cheyenne ceremonies (Grinnell 1923[II]:292).

Clinker forms when coal seams burn, baking the adjacent sediments “into a frothy mass” (Porter 1962:268). Fragments of this highly porous rock known as scoria erode from the lignite beds of northwestern South Dakota and southwestern North Dakota and float downstream to the Missouri River. Plains Village groups there retrieved the clinker and used it as an abrasive to smooth wood and bone tools (Porter 1962:268).

Green bentonite used for pigments may have been mined from the Bijou Hills in south-central South Dakota (Neuman 1962:266). Although no archaeological or historic data refer to this, green pigment similar to Bijou Hills minerals occurs in some burial sites in the region. Red ocher was obtained at a site in the central Black Hills (39LA752) and at or near Ludlow Cave (39HN1) in the Sandstone Buttes region. Yellow ocher was mined at 39LM86 near the Missouri River. Other sources of minerals for paints are known from ethnographic sources. Limonite for red paint occurred along the Vermillion River (Howard 1972:296–297; Warren 1922:111; Olden 1918:31). Other sources for red pigment were the Cheyenne River (Grinnell 1906: 20; Odell 1942:1731 Petter 1915:921; Moore 1987:155) and Black Pipe Creek in the White River Badlands (Buechel 1970:228). Black pigment was obtained from Black Earth Creek near the James River and from the White River Badlands (Warren 1922:110; Olden 1918:31). Brown pigment was gathered near

Patchskin Butte in Dewey County (Buechel and Manhart 1998:198–200). Blue paints were obtained near Bear Butte in Meade County (Powell 1969:19) and at a butte near Ludlow Cave in Harding County (Beckwith 1938:304)

## **Temporal Boundaries**

Prehistoric tool-stone quarries currently assigned a specific cultural/ or temporal affiliation in the Archaeological Research Center database include 39LA1120 (Early Archaic), 39FA484 (Middle Archaic), 39CU16 (Middle Archaic McKean Complex), 39LA259 (Late Archaic), 39CU1717 (Late Archaic), 39CU1693 (Late Archaic), 39CU1717 (Late Archaic), 39FA508 (Late Prehistoric). Obviously, many of the tool-stone quarries were in use from Paleoindian times until metal tools replaced stone in the Protohistoric period.

## **Spatial Boundaries**

Major tool-stone quarries occur in the Black Hills, White River Badlands, Cave Hills, Slim Buttes, Fox Hills, Bijou Hills, and eastern South Dakota where pipestone is abundant.

*West Horse Creek Chert:* 39SH37, 39SH78, 39SH91, 39SH306

*Scenic Chalcedony:* 39PN606, 39PN867, 39SH78, 39PN606, 39PN867, 39PN871, 39PN919, 39JK174 (Sites 39PN1719 and 39PN1721 contained “White River silicates,” presumably meaning Scenic chalcedony, West Horse Creek chert, or both.)

*Obsidian:* 39PN746

*Hogback Quartzite:* 39CU6, 39CU474, 39CU479, 39CU484, 39CU551, 39CU629, 39CU630, 39CU631, 39CU875, 39CU1047, 39CU1096, 39CU1371, 39CU1383, 39CU1395, 39CU1495, 39CU2526, 39CU2536, 39CU2551, 39CU3141, 39CU3401, 39CU3405, 39CU3428, 39CU3505, 39CU4347, 39FA49, 39FA49B, 39FA55, 39FA103, 39FA228, 39FA276, 39FA417, 39FA422, 39FA469, 39FA484, 39FA497, 39FA508, 39FA760, 39FA761, 39FA762, 39FA763, 39FA764, 39FA765, 39FA965, 39FA966, 39FA1001, 39FA1004, 39FA1051, 39FA1177, 39FA1460, 39FA1530, 39FA1539, 39PN658, 39PN1375

*Deadwood Quartzite:* 39CU2805, 39MD79

*Mountain Meadow Chert:* 39LA378

*Spearfish Chert:* 39CU19, 39CU231, 39CU272, 39CU1182, 39CU1236, 39CU1238, 39CU1285, 39CU1590, 39CU1593, 39CU1632, 39CU1693, 39CU1717, 39CU1730, 39CU1736, 39CU3529

*Minnelusa Chert:* 39CU6, 39CU16, 39CU315, 39CU320, 39CU366, 39CU473, 39CU474, 39CU478, 39CU479, 39CU484, 39CU551, 39CU629, 39CU630, 39CU631, 39CU672, 39CU735, 39CU869, 39CU870, 39CU871, 39CU872, 39CU873, 39LA232, 39LA259, 39LA260, 39LA303, 39LA344, 39LA345, 39LA407, 39LA503, 39MD29, 39MD84, 39PN284

*Minnelusa Quartzite:* 39CU320, 39CU479, 39CU484, 39CU1047, 39CU1096, 39CU1119, 39MD134, 39PN773

*Pahasapa Chert:* 39CU81, 39CU314, 39CU469, 39CU485, 39CU655, 39CU700, 39CU1029, 39CU1098, 39CU1113, 39CU1114, 39CU1116, 39LA138, 39LA634, 39MD123, 39PN88, 39PN89, 39PN91, 39PN92, 39PN93, 39PN116, 39PN183

*Unspecified Black Hills Chert:* 39CU19, 39CU231, 39CU469, 39CU672, 39CU1194, 39CU1238, 39CU1308, 39CU1368, 39CU2875, 39CU3048, 39CU3130, 39CU3134, 39CU3138, 39CU4263, 39CU4316, 39CU4321, 39CU4331, 39CU4345, 39CU4356, 39CU4347, 39FA1051, 39LA232, 39LA344, 39LA378, 39LA851, 39LA1269, 39LA1263, 39PN1140, 39PN1401, 39PN1403, 39PN1502

*Unspecified Black Hills Chalcedony:* 39CU1285, 39CU2527

*Tongue River Silicified Siltstone:* 39HN276, 39HN349, 39HN350, 39HN378, 39HN519, 39HN645, 39PE193, 39PE194

*Petrified Wood:* 39PE193, 39PE194, 39SH229, 39ZB83

*Brown Chalcedony:* 39HN819

*Bijou Hills:* 38GR73, 39GR85, 9TP6, 39TP7, 39TP72

## **Research Topics**

1. What methods were used to procure various types of tool-stone—for example, excavating, heating the cliff, prying off large pieces? Did these change over time?
2. What evidence is there for replacement of old tools at quarry sites?
3. How was raw tool-stone shaped for transport?
4. What is the period of use of each of the major quarries?
5. What features typify quarry sites—for example, pits, hearths for heat-treating stone, chipping stations?
6. What is the relationship between quarry sites and camp sites?
7. What is the temporal and spatial distribution of various types of tool-stone from South Dakota? What does this indicate regarding migration, settlement, and trade?
8. Was stone quality the principal or only factor in quarry site selection, or did other factors such as accessibility, variety of tool-stone, or ease of quarrying influence quarry selection?
9. Can preferred tool-stone types (based on amounts per site) reflect changing cultural groups?

10. What tool-stone procurement techniques were practiced by which cultural groups?
11. For a given study area, what exotic stone types are present on procurement sites, where are they from, why are they present, and what was their function?
12. How do tool-stone procurement strategies change through time?
13. How does a change in tool-stone procurement strategies affect a site's artifact content?
14. What other types of activities occurred at tool-stone procurement sites?
15. What are the appropriate methodologies to study tool-stone procurement sites?

### **Prehistoric Quarry Sites**

39BT13, 39BU6, 39BU232, 39CH97, 39CU6, 39CU16, 39CU19, 39CU75, 39CU81, 39CU231, 39CU272, 39CU313, 39CU314, 39CU386, 39CU469, 39CU473, 39CU474, 39CU478, 39CU479, 39CU484, 39CU535, 39CU551, 39CU629, 39CU630, 39CU631, 39CU672, 39CU686, 39CU869, 39CU870, 39CU871, 39CU872, 39CU873, 39CU875, 39CU876, 39CU1029, 39CU1047, 39CU1096, 39CU1098, 39CU1107, 39CU1113, 39CU1114, 39CU1116, 39CU1119, 39CU1194, 39CU1235, 39CU1236, 39CU1238, 39CU1285, 39CU1308, 39CU1368, 39CU1371, 39CU1383, 39CU1395, 39CU1402, 39CU1419, 39CU1466, 39CU1495, 39CU1590, 39CU1593, 39CU1632, 39CU1693, 39CU1717, 39CU1721, 39CU1730, 39CU1736, 39CU1813, 39CU1814, 39CU1831, 39CU1854, 39CU1863, 39CU1864, 39CU1865, 39CU1867, 39CU1871, 39CU1969, 39CU2526, 39CU2527, 39CU2535, 39CU2536, 39CU2537, 39CU2540, 39CU2541, 39CU2543, 39CU2551, 39CU2788, 39CU2805, 39CU2875, 39CU3048, 39CU3130, 39CU3134, 39CU3138, 39CU3141, 39CU3401, 39CU3405, 39CU3428, 39CU3505, 39CU3529, 39FA49, 39FA49B, 39FA55, 39FA66, 39FA67, 39FA103, 39FA228, 39FA276, 39FA417, 39FA422, 39FA484, 39FA497, 39FA504, 39FA508, 39FA545, 39FA547, 39FA548, 39FA627, 39FA753, 39FA760, 39FA761, 39FA762, 39FA763, 39FA764, 39FA765, 39FA965, 39FA966, 39FA1001, 39FA1004, 39FA1051, 39FA1311, 39FA1312, 39FA1177, 39FA1460, 39FA1530, 39FA1539, 39GR73, 39GR85, 39HN276, 39HN293, 39HN298, 39HN303, 39HN320, 39HN349, 39HN350, 39HN378, 39HN386, 39HN387, 39HN519, 39HN645, 39HN819, 39JK54, 39JK69, 39JK128, 39JK131, 39JK140, 39JK174, 39JK194, 39JK195, 39JK273, 39JK275, 39JK276, 39LA232, 39LA259, 39LA260, 39LA318, 39LA344, 39LA345, 39LA503, 39LA634, 39LA729, 39LA730, 39LA752, 39LA851, 39LA1041, 39LA1120, 39LA1263, 39LA1264, 39LM86, 39LM257, 39LM297, 39MD29, 39MD64, 39MD79, 39MD84, 39MD123, 39MD134, 39MD230, 39MD231, 39MD232, 39MD752, 39MH9, 39MH168, 39PE193, 39PE194, 39PN1, 39PN70, 39PN88, 39PN91, 39PN92, 39PN93, 39PN95, 39PN183, 39PN606, 39PN634, 39PN658, 39PN746, 39PN747, 39PN773, 39PN867, 39PN869, 39PN870, 39PN871, 39PN872, 39PN873, 39PN875, 39PN876, 39PN878, 39PN879, 39PN880, 39PN884, 39PN885, 39PN889, 39PN891, 39PN892, 39PN893, 39PN902, 39PN903, 39PN905, 39PN919, 39PN920, 39PN944, 39PN1140, 39PN1181, 39PN1375, 39PN1401, 39PN1403, 39PN1418, 39PN1452, 39PN1453, 39PN1454, 39PN1455, 39PN1502, 39PN1709, 39PN1713, 39PN1719, 39PN1721, 39PN1724, 39PN1724, 39PN1725, 39PN1877, 39PN1878, 39PN1879, 39PN2710, 39SH37, 39SH51, 39SH53, 39SH78, 39SH81, 39SH83, 39SH91, 39SH107, 39SH158, 39SH163, 39SH229, 39SH306, 39TP6, 39TP7, 39TP8, 39TP23, 39ZB83

## **Historic/ Quarry Sites**

39BU188, 39FA415, 39LA606, 39MH329, 39MD168, 39PN775, 39PN1022

## **Site Listed in the National Register of Historic Places:**

39FA49

## **Condition and Archaeological Potential**

Bedrock quarries tend to be quite large and to contain hundreds or thousands of artifacts. This makes them vulnerable to damage from collectors and looters but resistant to complete destruction. Cobble quarries may be equally large or may be very small. Small sites with few tool-stone boulders and few artifacts are easily destroyed by construction, looting, or erosion. Overall, South Dakota's prehistoric quarry sites are intact. The main problem they present is simply that few, if any, have been well studied. Apart from site forms and a few samples of the rock from each quarry, archaeologists have paid these sites little attention. Some of the largest quarries have never been completely recorded or inventoried. This means that the information they contain is at risk simply because no one has attempted to compile it.

## **Bibliography**

Ahler 1977; Church 1994; Hoard *et al.* 1992; Keyser and Fagan 1987; Miller 1991; Nowak 1982; Nowak and Hannus 1985; Nowak *et al.* 1984; Schneider 2007; Sigstad 1970; Over 1924, 1948; Porter 1962.

## **Eagle-Trapping Pits**

### **Overview**

Northern Plains Indians trapped eagles by digging a pit just large enough for a man to lie in on his back with his legs drawn up (Bowers 1950, 1963; Wilson 1928; Grinnell 1923; Schultz 1962; Ewers 1958; Howard 1965; McCleary 1997). The eagle trappers concealed their pits by a cover of brush to which bait was attached. When an eagle landed to investigate the bait, the trapper reached up and grabbed the bird by its legs, drawing it into the pit with him. He then tied the eagle's wings to disable it until he could conveniently kill it or remove the tail feathers and set it free again. Such a pit would typically measure about 1.5 by 1 meter and might originally have been about a meter in depth. Some pits were lined with stone. According to native consultants interviewed by James Howard, stones were sometimes placed around the edges of a pit after an eagle was captured, and the remains of the eagle were often buried within the pit wrapped in sage and rabbit skin and sprinkled with tobacco (Howard 1954).

Archaeologically, these features appear as shallow depressions with or without a stone alignment around the depression (Rood 1983). They generally were placed partway up the south-facing slopes of high buttes or a few paces from the rim of a butte or mesa. To my knowledge, no eagle pits have been dated and no means have been devised of determining their specific cultural affiliation. Eagle-trapping pits are difficult to recognize with any certainty, hence the large number

of question marks in the list below. South Dakota's site classification system does not have a category for eagle-trapping pits; these sites are variously listed as depressions, alignments, or cairns.

Eagle trappers created and used two other kinds of sites in northwestern South Dakota: special lodges in which they conducted rituals prior to building and entering the eagle pits and rock art sites with images related to origin stories for eagle trapping and/or drawings of eagle lodges (Will 1909; Sundstrom 2004). It is probable that some vision quest (fasting) sites in northwestern South Dakota were also used during eagle hunts.

While the primary function of eagle pits is obvious, it is important to remember that eagle trapping was an activity with strong religious connotations. Eagle-trapping pits were not simply a place to catch the great birds, but also a place to remember the past benevolence of the spirits and to beseech them for help again. Eagle trapping required prayer, ritual, and fasting, both at the eagle lodge and inside the eagle pits.

### **Temporal Boundaries**

Unknown maximum to historic.

### **Spatial Boundaries**

Western South Dakota, especially the northwestern counties, and the Missouri Coteau.

### **Age and Cultural Affiliation**

Archaeologists do not know the time depth of eagle capture using pit traps. I am unaware of any such sites that have been dated either through associated artifacts or metric dating methods, such as radiocarbon dating. In historic and protohistoric times, all northern Plains Indian nations trapped eagles in this way.

### **Research Topics**

1. What are the ages and cultural affiliations of eagle-trapping pits?
2. How did eagle trapping function within the larger culture?
3. What kinds of sites are linked with eagle trapping, besides the actual pits? Eagle trappers' lodges and rock art with images related to eagle trapping occur in the Sandstone Buttes region.
4. Did eagle trapping methods and traditions change over time?
5. What subgroups participated in eagle trapping? Did they combine acquisition of eagle feathers with other activities such as hunting, gathering tool-stone, and the like?

## **Eagle-Trapping Pit Sites**

39BU403, 39CU2622, 39DE64, 39DW46, 39DW50?, 39FK30, 39HD26?, 39HN289, 39HN351, 39HN524?, 39HN684?, 39HN886, 39HN986?, 39LA1070, 39LA1095, 39MD130, 39MD572, 39PE45, 39PE193?, 39PE194?

## **Sites Listed in the National Register:**

None

## **Condition and Archaeological Potential**

Eagle-trapping pits are small sites that are easily erased by erosion and sediment accumulation. Those that remain today probably had been periodically reused, thus making a feature more visible today. These sites usually do not contain any artifacts, and they tend to be located far from other sites, such as camps or eagle lodges. Because these sites are small and usually in remote locations, they are not generally threatened by vandalism, looting, or building construction; however, minerals exploration and mining in northwestern South Dakota is an ongoing threat to eagle-trapping sites. Their main archaeological potential lies in identifying the depth of this unique northern Plains tradition and its geographic distribution.

## **Bibliography**

Rood 1983c, 1984; Allen 1983; Howard 1954; Wheeler 1963; Sundstrom 2004.

## **Mounds**

### **Overview**

Mounds are one of the most visible and most common site types in South Dakota. Large mounds are a hallmark of the Woodland period and specifically of the Besant or Sonota complex (Neuman 1960, 1975; Johnson and Johnson 1998). Mounds occur throughout the region east of the Missouri River in South Dakota, as in North America as a whole. They vary widely in size and form; most are conical or linear. Mounds typically were low domed forms, ranging from 117 to 30 meters in diameter and 0.4 to 2.2 meters in height (Neuman 1975:94). They probably were somewhat higher and smaller in diameter when first constructed. These features are often referred to as burial mounds because many of them contain human remains, including primary (at death) and secondary (bone bundle) burials. Bodies were placed in a sitting position or with the legs tightly flexed. Some contain only one burial, some a few, and some several dozen. Bodies were usually placed in rectangular, subsurface pits roofed with timbers and stone slabs, but sometimes were simply placed on the floor of the mound. Some bodies and bone bundles were placed in the mounds without grave goods, but many had shell and rolled copper beads and pendants, pierced canine teeth of various animals, imitation canine teeth of bone, stone tools, grooved mauls, bone awls, and other items included with them. Shell beads and ornaments include marine shell from the Gulf of Mexico and Pacific Ocean (Neuman 1975). Red ocher often occurs with the burials, whether primary or secondary. Some excavated mounds contained no evidence of burials. Mounds of the Sonota complex sometimes contain the articulated skeletons of bison, as well as those of

people. There is little evidence for preferential treatment of any class of individual. Mounds contain the remains of men, women, children, and infants alike, some with elaborate jewelry and grave goods, and some with none.

Little is known of how and why mounds were built in South Dakota. Few sites have been systematically excavated; many more have been destroyed by plowing and looters' digging. These features attracted attention as soon as non-native settlement began, and many were dismantled by treasure hunters and early attempts at scientific excavation that amounted to little more than collecting expeditions. Certainly, the mounds were associated with death and were a preferred final resting place of complete bodies or bone bundles. The presence of complete bison in some mounds (cf. Neuman 1975), as well as human skeletons, suggests that the mounds may have been viewed as a sort of incubator or pod from which new life would one day emerge.

The Omaha people continued to construct burial mounds in the early contact era. The body was dressed in fine clothing and buried in a sitting position facing east, preferably on a hilltop, in a shallow grave. The person's personal belongings were usually placed in the grave, as well. Poles were then laid over the grave and an earthen mound built up over it. The deceased person's horse might be killed and laid atop the mound. A fire was kept burning on the mound for four days to light the deceased person's way to the afterlife (Fletcher and La Flesche 1911:83, 592).

## **Temporal Boundaries**

Most mound sites are designated as Woodland or are not assigned a cultural affiliation. Current evidence indicates that the earliest mounds date to the Late Archaic or Plains Woodland period, which overlap in South Dakota from 2500 to 1000 years ago. Sites listed as Archaic are multiple component sites that also contained Woodland artifacts or yielded Woodland dates. Most sites listed as Protohistoric or Historic Native American are existing mounds that were reused for burials. In other words, openings were made in mounds during the contact era and bodies or bone bundles placed in them. It is less clear whether mounds were still being constructed in South Dakota during the Plains Village period; however, mound burial may have taken place into the contact era in the part of the state occupied by Omaha groups.

## **Spatial Boundaries**

Missouri River and eastern South Dakota, with sites concentrated along rivers and major tributary creeks.



*Figure 115. Mound sites, upper 39C081, lower, 39MH1, 2005 (ARC photos).*

## Research Topics

1. How are mound sites and other Woodland sites related? Can specific occupation sites be linked to specific mound sites?
2. Does the Sonota Complex form cultural development distinct from other Woodland cultures in central and eastern South Dakota?
3. Does the Sonota Complex derive from Hopewell complexes of Illinois and/or the Ohio Valley?
4. What is the link between the Sonota Complex of the eastern and central Dakotas and the Besant Complex as defined for the Northwestern Plains?
5. Were all mounds intended to hold burials? What do the items included in the mounds suggest regarding belief systems?
6. How and why were mound sites used for burials by later peoples of South Dakota?
7. What degree of social organization is implied by mound construction? Were mounds made all at once or over a long period?
8. Do burial goods suggest increased social stratification over time?
9. Was mound construction limited to the Woodland period?

## Mound Sites by Period

**Paleoindian:** none

**Archaic:** 39BF205, 39BF206, 39BF224, 39BF225, 39BF233, 39LN2

**Woodland:** 39BE14, 39BE15, 39BE25, 39BE27, 39BE29, 39BE46, 39BE48, 39BE54, 39BE55, 39BE57, 39BE62, 39BE64, 39BE94, 39BF10, 39BF49, 39BF73, 39BF205, 39BF206, 39BF219, 39BF223, 39BF224, 39BF225, 39BF231, 39BF233, 39BF234, 39BF235, 39BF270, 39BK3, 39BK5, 39BK9, 39BK78, 39BK101, 39BK102, 39BK103, 39BK237, 39BN1, 39BN2, 39BN3, 39BN4, 39BN6, 39BN10, 39BN11, 39BN12, 39BN14, 39BN16, 39BN74, 39BN89, 39BN98, 39BN99, 39BN103, 39CD2, 39CH4/39CH8, 39CH9, 39CH20, 39CH52, 39CK1, 39DA4, 39DA10, 39DA25, 39DA29, 39DA33, 39DE13, 39DW233, 39DW240, 39DW252, 39DW253, 39DW255, 39DW256, 39FK1, 39FK15, 39FK23, 39GT1, 39GT35, 39HD2, 39HS3, 39HS7, 39HS13, 39HS17, 39HS25, 39HT1, 39HT2, 39HT3, 39HT4, 39HT14, 39HT24, 39HT27, 39HT29, 39HT30, 39HT31, 39HT33, 39HT78, 39HT86, 39HT201, 39HT202, 39HU212, 39HU246, 39HU250, 39JE85, 39KB1, 39KB2, 39KB3, 39LK1, 39LK2, 39LK7, 39LK8, 39LK12, 39LK15, 39LK201, 39LM149, 39LM221, 39LM227, 39LM238, 39LN3/39LN10, 39LN6, 39LN8, 39LN9, 39LN15, 39LN28, 39LN43, 39LN71, 39MH2, 39MH3, 39MH4/39MH11/39MH201, 39MH5, 39MH6, 39MH21, 39MH29, 39MH34, 39MH74, 39MH102, 39MH203, 39MH222, 39MH233, 39MH234, 39MH235, 39MH237, 39MH238, 39MH241, 39MH242, 39MH243, 39MH243, 39MH244, 39MH245, 39MH246, 39MH247,

39MH249, 39MH250, 39MH252, 39MH253, 39MH258, 39MH259, 39MH264, 39MH260, 39MH261, 39MH263, 39MH267, 39MH289, 39MH291, 39MK1, 39ML1, 39ML2, 39ML3, 39ML4, 39ML5, 39ML8, 39ML9, 39ML12, 39ML13, 39ML14, 39ML15, 39ML16, 39ML17, 39ML18, 39ML20, 39ML21, 39ML22, 39ML23, 39ML24, 39ML25, 39ML26, 39ML27, 39ML28, 39ML29, 39ML31, 39ML32/39ML45, 39ML36, 39ML41, 39ML46, 39ML48, 39ML69, 39ML96, 39ML97, 39ML99, 39ML100, 39MN5, 39MO1, 39MO2, 39MO3, 39RO26, 39RO29, 39RO68, 39RO70, 39RO73, 39RO76, 39RO79, 39RO80, 39RO81, 39RO301, 39SB1, 39B3, 39SB4, 39SB5, 39SB11, 39SB12, 39SB15, 39SB16, 39SB18, 39SB31, 39SP2, 39SP3, 39SP6, 39SP8, 39SP12, 39SP15, 39SP19, 39SP24, 39SP37, 39SP51, 39ST48, 39ST225, 39UN1, 39UN13, 39YK1, 39YK2, 39YK3

**Great Oasis:** 39LN15, 39MH6, 39ML32/39ML45

**Oneota:** 39LN1?, 39LN2

**Plains Village/Late Prehistoric:** 39CL2, 39DV3, 39DW233, 39HS1, 39HT1, 39LM23/39LM69/39LM70, 39LM221, 39ST45, 39ST219, 39ST225

**Protohistoric or Historic Native American:** 39BF219, 39BF223, 39BF231, 39CH49/39CH59, 39LN1, 39LN2, 39MH5, 39MH6, 39ML36, 39RO6, 39RO10, 39SH305

**Undated Mound Sites:** 39BF77, 39BF208, 39BF209, 39BF213, 39BF216, 39BO34, 39BO35, 39BO36, 39BO37, 39CA210, 39CD6, 39CD9, 39CH79, 39CL2, 39CL4, 39CO54, 39CO81, 39CO86, 39CO149, 39CO150, 39DA1, 39DA2, 39DA3/39DA28, 39DA5, 38DA76, 39DE1, 39DE24, 39DE68, 39DE114, 39DV4, 39DV7, 39DV9, 39DV24, 39DV31, 39DV67, 39FA227, 39FK73, 39GR5, 39HD77, 39HL5, 39HS1, 39HS2/39HS22, 39HS12, 39HS62, 39HS86, 39HT139, 39HT142, 39JE4/39JE5, 39LK16, 39LK51, 39LK71, 39LK72, 39LK100, 39LM23/39LM69/39LM70, 39LM25, 39LM261, 39LM464, 39LM476, 39LN15, 39MD516, 39MH232, 39MH322, 39ML19, 39MO10, 39MO30, 39RO2, 39RO3, 39RO4, 39RO6, 39RO7, 39RO8, 39RO9, 39RO10, 39RO11, 39RO12, 39RO52, 39RO54, 39RO105, 39RO143, 39RO144, 39SB20, 39SH305, 39SH447, 39SP4, 39SP9, 39SP61, 39SP146, 39SP149, 39SP154?, 39ST97, 39ST219, 39ST222, 39TU3, 39UN1, 39UN54, 39YK1, 39YK2, 39YK3

## **Bibliography**

Neuman 1975; Boen and Sieverding 2007; Bruce *et al.* 2010; Buhta *et al.* 2009; Buhta *et al.* 2012; Buhta *et al.* 2013; Kaufmann *et al.* 2017; Maki *et al.* 2015, 2016; Rothaus *et al.* 2011; Tinti 2015a.

## **Sacred Sites and Traditional Cultural Properties**

### **Overview**

Places that retain, or once had, special cultural or spiritual meaning to a community require careful consideration in historic preservation. Such places can evoke strong emotions in people culturally linked to them. At the same time, because their significance is culturally specific, they may be overlooked or misunderstood by those from different cultural traditions. Cultural resource

managers operating under federal regulations are prohibited from showing preference to one religious tradition over another. The US Supreme Court has generally overruled attempts to set aside public lands for traditional religious or ceremonial uses (Kanefield 1996; Nabokov 2006). This makes adequate protection of such places on public lands especially difficult to achieve. In South Dakota, most concerns over sacred or traditional places have arisen from non-Indian access to and use of places of special significance to Native Americans. Although the National Register of Historic Places guidelines regarding “traditional cultural properties” apply to all communities, other regulations and laws, such as the American Indian Religious Freedom Act of 1978 (AIRFA), apply only to Native American communities and typically only to those Native American communities recognized as such by the federal government.

The National Park Service defines a traditional cultural property as a property that is eligible to the National Register of Historic Places because of its association with cultural practices or beliefs of a living community that are rooted in that community’s history and are important in maintaining the continuing cultural identity of the community (National Park Service 1990). This definition extends National Register recognition to places that may lack structures or other physical man-made features, but have historic significance in the traditions of local communities. Because their National Register eligibility depends on the attitude of living communities, effective consultation with members of local communities is imperative to identifying such sites and developing appropriate management policies for them. Regarding Native American communities, such places typically either are special resource gathering areas or sacred sites. The same place often falls under both categories. For example, the interior Black Hills had, and retain, special religious meaning to several Indian tribes, but were also used historically as a place to gather lodge poles. The outer rim of the Black Hills contains several important Cheyenne and Lakota sacred sites, but was also a place for winter camps, bison hunting, and gathering tool-stone (Sundstrom 1997b).

Use of the traditional cultural property category is intended to address places whose historic significance is tied to the practices or beliefs of a living community, when such practices and beliefs are rooted in the community’s history, and that are important to maintaining the cultural identity of the community. Cultural resource managers should also recognize that places that were important to various communities in the past may still be considered traditional cultural properties even if a community’s use of the place was discontinuous. Resource managers need to make a reasonable effort to identify the resource-gathering and spiritually significant places of past cultures, as well as present ones. Nearly every Indian tribe in South Dakota was forcibly moved during the historic period from traditional territories to reservations. Needless to say, this impeded the ability of tribal elders to educate the younger generations in the meaning and locations of places of traditional importance to the group. US government policy requiring school age children to attend boarding schools further impeded this continuity of traditional knowledge, as did the high mortality of elderly members of tribes during the pandemics of the eighteenth century (Sundstrom 1997c). Several tribes formerly resident in South Dakota now have communities or reservations in other states, including the Cheyenne, Kiowa, Kiowa-Apache, Arikara, Mandan, Ponca, and Omaha. Historic and traditional sites of these groups are especially likely to be overlooked in cultural resource management activities.

It is important that cultural resource managers work with their tribal partners to identify significant places even if such places do not meet the formal definition of a traditional cultural

property. Not all sacred sites fit within the traditional cultural property definition. While identifying probable or actual resource-gathering areas is straightforward, recognition of historically spiritual or sacred sites is more difficult. It can be argued that all places are sacred in some sense. Designating all of South Dakota as a sacred site would, however, have about the same practical effect as saying that none of the region is or was sacred. Cultural resource management and land-use studies require specific criteria. Christopher Vecsey writes in *Handbook of American Indian Religious Freedom* (1991:222) that American Indians recognize the following as sacred sites:

- where the ancestors arose from the earth
- where the clan received its identity
- where one's ancestors are buried
- where the people receive revelation
- where the culture hero left ritual objects for the people
- where the people make pilgrimages and vision quests
- where the gods dwell
- where animals, plants, minerals, or waters with special powers are found.

A few other categories belong in this list: places frequented by the spirits of one's ancestors; places where esteemed members of a group died or were buried; places where miraculous or mythical events happened; places where ceremonies were held in the past; and places recognized as sacred by other groups (Sundstrom 2003a).

Sacred sites in South Dakota tend to have definable attributes. Tangible attributes include physical features, such as caves or fossil exposures, and constructed features, such as rock art or stone alignments. Intangible attributes relate to beliefs about past events and to religious experiences, such as visions. Most sacred sites intersect two or more categories. For example, isolated peak is one category, but not all isolated peaks are sacred sites. An isolated peak that also contains a cave or has huge fossil bones scattered around its base, or at which powerful visions were received, is the one likely to be regarded as sacred. It is the intersection of a set of tangible and, sometimes, intangible attributes that defines places likely to have been regarded as sacred.

The best-known Native American sacred sites are what Vine Deloria, Jr., terms sacred centers (Deloria 1994:67). In South Dakota, Bear Butte, Thunder Butte, and Ludlow Cave are examples of sacred centers. The inherent sacredness of such places was typically recognized for very long times and by all groups who encountered them on their travels or learned of them through word of mouth. Because of their high visibility, these places have often been the focus of controversy between native groups and land managers or developers. There are, however, many smaller but nonetheless significant sacred sites in the state. The present document has no list of these places for two reasons. First, such sites are not included in the state archaeological site inventory unless

they also contain archaeological remains. Second, heavy visitation to sacred places damages them physically and compromises them as places of worship.

This discussion is intended to improve archaeologists' ability to recognize likely potential traditional cultural properties and sacred sites of Native American groups. It is extracted from a longer article (Sundstrom 2003a). It employs past tense in referring to Indian beliefs about the landscape. This is not because the beliefs are extinct—in most instances they are alive and thriving—but because these observations are based on historic records. In some cases, I simply do not know whether a belief is current or not. Even the most conservative religions change over time, and Plains Indian religions are no exception. Whether this emphasis on historic beliefs is justified (Deloria 1994:277), it reflects current federal historic preservation policy under which sacred sites are treated essentially as historic sites. Within any given group, beliefs and religious sentiment vary widely from individual to individual. A statement such as “Lakotas believed” means *some* Lakotas believed. I do not mean to imply homogeneity of belief that does not, and probably never did, exist.

Historic Indian sources refer both to general kinds of places regarded as sacred and to specific sacred places. Places generically considered sacred or mysterious—these terms are often synonymous in Plains Indian languages—included springs, places with rock art or stone effigies, places where round stones were found far from water, and fossil outcrops. Natural features considered inherently sacred in Lakota tradition are caves, springs, and places where round rocks or fossils are found (Walker 1991). In Cheyenne theology, landforms that bridge different elevational realms were also considered inherently sacred. For example, unvegetated areas such as bare rocks, sandbars, desert patches, and caves were sacred because they provide direct access to the deep earth realm (Schlesier 1987:6). Springs were similarly viewed as links between the surface and underground realms. Mountain peaks were sacred because they reach from the deep earth realm into the sky realm (Schlesier 1987:6). For the same reason, buttes and mountains that contain deep caves and crevices are especially sacred. Such places represent pathways and linkages between above and below. The Omahas and Iowas also believed that rocks, bluffs, and peaks were places of prayer (Dorsey 1894:373, 425).

Oglala Lakota religious specialists interviewed by James Walker between 1896 and 1914 gave the following statement about landscape features considered *wakan*, meaning holy or mysterious:

Some lakes are *wakan*. Some cliffs and hills are *wakan*. A cliff with round rocks in it is *wakan*. Certain cliffs had hieroglyphics on them; they were *wakan* (Walker 1991:101–2). [I have replaced Walker's translation, mysterious, with the original Lakota term *wakan*.]

Many northern plains groups recognized springs as places of mysterious power. About springs, Walker's teachers said,

Springs are *wakan*. When a man drinks from a spring during the night, this is what he says before he drinks, it is said. If he does not say this and drinks the water, then the spring shoots him, it is said. Therefore, the people are very much afraid of springs and no one drinks from a spring at night (Walker 1991:170).

The Arapahos believed springs, along with lakes and rivers, were the dwelling places of underwater spirits (Dorsey 1903:138). They left bits of flesh and other offerings near springs and steep riverbanks to show respect for these underwater beings and to ensure safe crossings and sweet drinking water (Dorsey 1903:138–39). The Lakotas believed that water from the springs at Bear Butte would give them a long life (Odell 1942:23). Cheyennes, Blackfeet, and Dakotas alike believed that underwater beings inhabited many springs and waterfalls. Offerings were left at springs where these beings were believed to dwell (Grinnell 1923:II98–99; Parks and Wedel 1985:170–71; Dorsey 1894:438). Cheyennes stated that spirits or powers dwelled in the springs, in the rivers, in the hills, and in certain high places. Sacrifices were offered and prayers made at such places (Grinnell 1923:II96).

Butte tops, pits, and cliffs where round stones were found were also considered sacred places. In Lakota tradition, special powers resided in rocks found in pits thought to have been created by lightning strikes and in round rocks found in cliffs or on buttes were also regarded as sacred (Walker 1991:101–2; Densmore 1918:208). Many northern Plains Indians also considered fossil exposures places of power. Some of these places were sources for fossils that symbolized religious powers. The Stone Buffalo Horn was one of the most important religious objects of the Cheyennes. It is a horn coral fossil found in the Black Hills by the culture hero, Listening to the Ground (Grinnell 1962:167–71). This object was used for calling buffalo during times of famine. Other fossil outcrops provided tangible evidence for the existence of creatures mentioned in myths. According to Cheyenne tradition, the large fossil bones found along streams are the remains of an underwater creature dwelling in rivers and springs (Grinnell 1923II:98–99). The Kiowas told of finding the huge ivory claws of the great bear that trapped the children atop the Bear Lodge (Devils Tower) (Boyd 1983:92–3). Lakotas regarded the fossil bones found in the White River Badlands as the remains of a great water monster (Erdoes and Ortiz 1984:237; Walker 1991:108, 1983:243; Smith 1949:310). The Kansas believed that the Black Hills contained the fossil bones of enormous serpents, the sight of which would cause death (Dorsey 1894:393).

Like springs, deep caves were considered sacred because they provide passages to underground worlds otherwise sealed off from the surface of the earth (Schlesier 1987:4–6; Bowers 1963:127, 437; Medicine Crow 1992:84; Grinnell 1923II:368). In virtually all northern Plains belief systems, spirit animals were believed to live under the ground and to emerge periodically to renew the herds (Bowers 1950:171–2; Bowers 1963:127, 437; Lowie 1918:216; Beckwith 1938:22–3, 157–8; Hoebel 1978:89; LaPointe 1976:80; Schultz 1962:59–60). At least four such buffalo caves are located in South Dakota (LaPointe 1976; Albers 2002; Bowers 1950:90, 1963:127, 436; Sundstrom 1996b; Jorgensen 1974:52).

Other places were thought to contain caves or crevices from which babies' spirits or tiny people could emerge from the underground world. Bear Butte was also considered a dwelling for babies' spirits (LaPointe 1976:40–1). Omahas, Dakotas, and Otos held traditions of little people living in Spirit Mound near Vermillion, South Dakota (DeVoto 1953:22–3). Lakota beliefs tie Wind Cave to the emergence of the Lakota people and to their culture hero Taopi Gli (Powers 1986:41–2; LaPointe 1976:80–4; Albers 2002). Ludlow Cave in northwestern South Dakota contained large numbers of offerings, confirming its long use as a sacred site. It contained Mandan-Hidatsa pottery, but was sacred to Cheyennes and Lakotas as well (Sundstrom 1996b).

Cultural features considered inherently sacred include rock art sites, places where ceremonies were held in the past, vision quest stations, eagle catch pits, some stone alignments and cairns, earthworks, and burial sites. There are many references to the sacred nature of rock art sites. The Oglala Lakota Nicholas Black Elk explained how such sites were used to tell the future:

There is a place in the Black Hills, also on the Little Big Horn, a bank of solid rock where there are inscriptions that only a medicine man can read. It is a mystery. There is one in the Black Hills that only a medicine man can read. We don't know who wrote it, but a medicine man can decode it and get the meaning. We would camp and when we would come back there would be more writing (DeMallie 1984:376).

The Medicine Rock, now at Gettysburg, South Dakota, was also used to tell the future (Shield Eagle cited in Stilgebouer and Stilgebouer 1958:30–32). A place called the Mysterious Butte or Holy Butte was another place where Lakotas received signs about the future (McLaughlin 1916:104–7). Success or failure in warfare or hunting was foretold in the images that appeared on cliffs after shamans fasted and prayed near them (Hassrick 1964:195; Lewis 1980:76). A petroglyph-covered glacial erratic at the mouth of the Turtle River near present-day Redfield, South Dakota, was a Hidatsa and Yankton Dakota shrine used to foretell events (Howard 1976:299).

Rock art sites were also considered places where power could be obtained from spirits residing there. Offerings were frequently left at rock art sites. Sites for which this practice is documented historically or archaeologically include Ludlow Cave (Sundstrom 1996b; Bowers 1963:369; Custer 1874; Krause and Olson 1974:110); the Gettysburg Medicine Rock (Custer 1885:85); and another site on the Missouri River in South Dakota (Amiotte 1987; White Buffalo Man cited in Kadlecek and Kadlecek 1981:152). The latter site continues to be visited as part of Sun Dance rituals.

A Northern Lakota tradition calls for visitation to an ancient site where there are petroglyphs, sacred markings on rock. The intercessors leave during one of the breaks in the ceremony and go to the sacred place. There offerings are made to the sacred markings. The designs are memorized, brought back, and replicated on the earth altar [in the Sun Dance enclosure]. Oddly enough, it is not unusual to find that a certain kind of transformation does take place even today. Year after year, the visitation to the sacred site reveals to us that the marks do change, and in each year they are in turn brought back and replicated on the sacred altar. Following the Sun Dance proper, the shamans gather in the purification lodge—the sweat lodge—and interpret those markings in terms of the potential message that they might have for the people during the forthcoming year (Amiotte 1987:86).

Places where ceremonies had been held in the past were regarded as sacred (e.g. Vestal 1932:151). Such places could be recognized by depressions or vegetation scars that remained visible long after the ceremonial grounds had been abandoned. In 1911, Frances Densmore asked a group of men who had danced in the Sun Dance of 1882 to show her the place where the ceremony had been held. Despite the passage of nearly three decades, the men readily found the place.

A majority of the Indians who went to the site of the Sun Dance with the writer were men who took part in the Sun Dance of 1882 and had not visited the place since that time. When nearing the place they scanned the horizon, measuring the distance to the Missouri River and the buttes. At last they gave a signal for the wagons to stop, and, springing to the ground, began to search the prairie. In a short time they found the exact spot where the ceremony was held. The scars were still on the prairie as they were on their own bodies. A depression about 2 inches in depth still square in outline and not fully overgrown with grass showed where the earth had been exposed for *the owanka wakan* [sacred place]. Only 3 or 4 feet away lay a broken buffalo skull. Eagerly the Indians lifted it and saw traces of red paint upon it—could it be other than the skull used in that ceremony? They looked if perchance they might find a trace of the location of the pole. It should be about 15 feet east of the “sacred place.” There it was—a spot of hard, bare ground 18 inches in diameter [Densmore 1918:93].

The men then renewed the buffalo skull and altar and prayed with a Sun Dance pipe (Densmore 1918:93–4). When the Yanktonais revisited an old Sun Dance ground in the 1830s, they heard an inexplicable whistling there at night. This meant they should perform another Sun Dance at the dance ground on Cannonball River (Howard 1976:26).

Hidatsas regularly visited the former sites of villages and ceremonial grounds. Alfred Bowers recorded that “the three ancient villages were remembered by my informants, for it was the custom of many families to return to these sites and to point out to the younger people the depressions of lodges where certain relatives had lived, their graves, or earth rings on the prairies where various ceremonies such as the *NaxpikE* or Wolf ceremonies were held” (Bowers 1963:2). Cheyenne elders were also able to locate former ceremonial sites that had not been used for more than half a century (Stands in Timber and Liberty 1967:84–5; Schwartz 1988:12).

Earthworks include burial mounds, effigy mounds, and sod effigies or intaglios. Most mound sites were considered sacred places, as were sod effigies or intaglios created by removing sod in the shape of circles, rectangles, tracks, or animals. Such sites are difficult to find and are sometimes assumed to be of natural rather than cultural origin. The Omahas made intaglios in the form of turtles and crosses by removing the sod; however, the locations of these are not recorded (Fletcher and LaFlesche 1911:161, 169). These were associated with rites for controlling rain and wind. The Omahas also made small circular intaglios, which were re-cleared periodically, at vision quest sites (Will 1924:295). The Winnebagos cut small, circular depressions about every 50 miles along the bluffs of the Missouri to designate places of prayer (Dorsey 1894:428). The Cheyennes removed a large circle of sod from the floor of their Massaum or Animal Dance lodge (Schlesier 1987:6, 91), but none of these features have been identified archaeologically.

Stone alignments were also considered sacred by groups creating or discovering them. The best known and in some ways most controversial of these are the medicine wheels. The great Medicine Wheel site in the Bighorns is widely known (Grey 1963; Wilson 1981; Simms 1903b; Campbell and Foor 1999), but at least 68 other such sites are found in southern Alberta and Saskatchewan, Montana, North Dakota, central South Dakota, and the eastern Black Hills (Brumley 1988; Quigg 1996; Over 1941; Kuehn 1988). Medicine wheels take a variety of forms, most with spokes radiating from a central point or a central cairn inside a circle (Brumley 1985:6).

Medicine wheels continued to be constructed as late as 1940 in Alberta; archaeological dates range from 3200 BCE to 1760 CE (Quigg 1996:17). Some researchers believe the medicine wheels were used as directional markers (Kuehn 1988) or astronomical observatories (Eddy 1974, 1981; Schlesier 1987; Kehoe and Kehoe 1979). Others were used for burial of chiefs or as commemorative markers (Kehoe 1954; Dempsey 1956:14, 177–182; Brumley 1985). Ponca tribal historians claim that their ancestors made the Bighorn Medicine Wheel to mark their migrations into the area and to represent a Sun Dance circle (Howard 1965:18). Vision seekers fasted at some medicine wheels (Lowie 1922; Fries 1980:20–24). Some may have served as directional markers (Wilson 1981:338–340). Whatever their correct interpretation, there seems no question that these structures had religious significance (Quigg 1996; Hall 1985: 181–193; Grinnell 1922; Wilson 1981; Howard 1965:18).

Turtle effigies are found in several places in the Dakotas. The Hidatsas and Lakotas thought these turtle effigies could control fog and rain to the advantage of hunters, if the proper prayers and gifts were offered to them (Bowers 1963:337, 353; Will 1924:293; Lame Deer and Erdoes 1972:125). The Omahas also made turtle effigies to control the rain and fog, but these were intaglios or incisions rather than stone alignments (Fletcher and LaFlesche 1911:161; Dorsey 1894:410).

Other stone alignments illustrated legends (South Dakota Writers' Project 1941:120–22) or commemorated historic events (Stands in Timber and Liberty 1967:129, 186; Dempsey 1994:66, 209; South Dakota Writers' Project 1941:130–31; Kehoe and Kehoe 1985:4–5). Cairns or large rocks were sometimes placed as boundary markers (Stands in Timber and Liberty 1967:124; Beede ca. 1920b.). These markers probably were considered sacred, because territories were usually described in terms of, and justified by, myths or other religious traditions (e.g., Bowers 1963:12; Schlesier 1987:77–79). Large cairns marked the location of three sacred sites in South Dakota: the White Buffalo Cave near Winner, a rock art site near the Missouri River, and Ludlow Cave in the Cave Hills. In all three instances, the cairns are on high butte tops and are clearly visible from a considerable distance (that at Ludlow Cave has been dismantled).

Clearly, not all cairns had religious significance. Some mark points at which trails lead from butte tops to the canyons below. Others may have resulted from clearing a space of rocks for a fireplace or sleeping places. Nevertheless, because ethnographic and archaeological data, as well as contemporary Indian belief systems, identify many cairns as burial markers, vision quest features, or places at which people left stones to record their pilgrimage to a sacred site, the function of these features should be carefully considered.

Small stone alignments may also have religious significance. In the northwestern Great Plains and Rocky Mountains, ring-like rock enclosures sometimes were constructed at vision quest sites (Dormaar and Reeves 1993; Conner 1982; Fredlund 1969). They usually take the form of ovals, circles, U-shaped enclosures, or excavated rectangles (Dormaar and Reeves 1993). Enclosures that have collapsed may look like cairns (Figure 4). Oval and rectangular enclosures usually are oriented to face sunrise and sunset or a sacred peak (Dormaar and Reeves 1993; Schultz 1962:320–37). A vision quest could take place anywhere that was secluded and thought to be a place of spiritual power. In the Middle Missouri area, small cairns on hills near villages are *minaki* or individual piles of stones placed by young Mandan men at the place of their vision quest (Will 1924:295). There is some evidence that the Cheyennes also followed this practice (Odell

1942:144). After the mid-1800s, some Lakota worshippers fasted in rectangular pits, rather than in stone enclosures (Powers 1982:12–13). The Omaha used shallow circles cleared of sod and vegetation as vision quest stations; these were revisited and renewed yearly (Will 1924:295).

Places traditionally used for vision quests were considered sacred as sources of spiritual power. Vision seekers used these places repeatedly. For example, as Hidatsa hunting parties traveled to their hunting territories, they stopped from time to time “for a distinguished individual to pray at some traditional fasting spot where he had formerly received supernatural experiences” (Bowers 1963:53). Some of the most important vision quest locations in South Dakota are Bear Butte (Bourke ca. 1878:26:44; Grinnell 1923I:201; Stands in Timber and Liberty 1967:88–90; South Dakota Writers’ Project 1941:111–12), the central and eastern Black Hills including Black Elk Peak (formerly known as Harney Peak) and Rapid Creek (Mallery 1893:289; DeMallie 1984:155–59, 294–6; Kadlecek and Kadlecek 1981:90, 118, 146, 157–9), and Medicine Knoll near Blunt, South Dakota (Howard 1972:293). William Powers (1982:11) lists Eagle Nest Butte, Saddle Butte, Snake Butte, and Buzzard Butte as traditional Lakota vision quest sites on the Pine Ridge Reservation in South Dakota. Less well known than the use of vision quest enclosures is a practice of forming a ring of stones at village sites to commemorate the dead. (Beede ca. 1920a).

Eagle-trapping pits are another readily recognized site type. Eagle pits and features associated with them should be considered sacred sites. Eagle trapping was a highly ritualized activity. Prayer vigils, self-torture, and elaborate ceremonies accompanied eagle trapping. Distinctive conical timber lodges were constructed near the eagle pits. These were essentially religious structures in which a variety of ceremonial activities took place. Bowers (1950:232–3) described three kinds of Mandan-Hidatsa eagle-trapping lodges. Allen (1982) detailed the archaeological expressions of these lodges and associated eagle pits in the Little Missouri country. Eagle-trapping complexes are found along the Missouri River as far north as the mouth of the Yellowstone (Bowers 1950:208; Will 1924:298), in the northern Black Hills (Bowers 1950:208; Stands in Timber and Liberty 1967:51), at Eagle Nest Butte in southwestern South Dakota (Powers 1982:11), and in the butte country of northwestern South Dakota (Will 1909:257; Sundstrom 1993b).

Stacks of horns or antlers are found in some areas of the northwestern Plains. It is not clearly recorded whether these features were considered sacred. These horn stacks were made of bison horn sheaths or elk antlers. Some were located near pounds, jumps, or other traditional kill sites. Horn stacks have been found in and west of the Black Hills and north of Fort Union, Montana (Grinnell 1923I:268, 276; Grinnell 1875:83; Culbertson 1952:108–109). Groups known to have made horn stacks include the Cheyennes, Arapahos, and Blackfeet. When Culbertson visited the elk horn pile near Fort Union in 1850, he noted that the antlers appeared to have been shed, rather than removed during butchering, but he found no Indian informants who could tell him when or why the huge stack was made (Culbertson 1952:109). Denig also said the stack was made “previous to the knowledge” of Indian groups inhabiting the area in the first half of the nineteenth century (Denig 1930:398). Father DeSmet also stated that no one could tell him when, why, or by whom this “elk horn steeple” was constructed (Chittenden and Richardson 1905:603–4). Maximillian, by contrast, learned that the horn stack near Fort Union was made by gradual accumulation of antlers left there by Blackfoot hunting and war parties. He suggests this practice was commemorative, but not ceremonial (Maximillian 1904–7II: 34–5). This process of gradual accumulation is reminiscent of the great cairns, such as the Majorville Cairn, also thought to have been made by Blackfoot groups (Calder 1977).

The places where the remains of the dead were laid to rest were also considered sacred. This seems to be practically a human universal and hardly needs reiteration here. Less well known are places maintained as memorials to fallen warriors or ancestors. George Bushotter related this Lakota tradition in 1864:

The Indians used to camp at a flat-topped mountain [Bear Butte] and pray to it. This mountain had many large rocks on it, and a pine forest at the summit. The children prayed to the rocks as if to their guardian spirits, and then placed some of the smaller ones between the branches of the pine trees. I was caused to put a stone up a tree. Some trees had as many as seven stones apiece. No child repeated the ceremony of putting a stone up in a tree; but on subsequent visits to the butte he or she wailed for the dead, of whom the stones were tokens (Odell 1942:21–2).

Both the Cheyennes and the Lakotas believed the spirits of their dead occupied the summit of Bear Butte (Bourke ca. 1878:16:1555–6). A butte in central South Dakota has a large cairn with many offerings; this may also have been a memorial to the dead of the Cheyenne and Lakota groups living there. The Cheyennes sometimes placed stones at battle sites to commemorate the warriors who died there (Stands in Timber and Liberty 1967:129, 186). The Middle Missouri tribes made cairns to commemorate the ancestors. Whenever they passed these cairns, each person would add a stone to the pile in memory of his or her departed ones (Will 1924:295). Some medicine wheels and other stone alignments were made or added to as memorials to dead leaders or to commemorate important events, especially among the Blackfoot nations. These were placed at the home sites or graves of the departed individual (Dempsey 1956, 1994; Kehoe and Kehoe 1957). A Lakota and Arikara tradition holds that a snake effigy near Pierre, South Dakota, was made to commemorate the death of a brave warrior (South Dakota Writers' Project 1941:130–1).

Many prominent peaks and buttes were considered sacred. In some cases, entire mountain ranges were viewed as holy places. Although the historical depth of current Lakota religious beliefs about the Black Hills has occasionally been questioned (Worster 1992), some of the earliest accounts of non-native explorations in the area state that “much superstition” was attached to it (Denig 1961:6; Dodge 1965). This is simply another way of saying the area had considerable religious significance to the Indians these explorers met. Ethnographic data also support the view of a long history for religious connections to the Black Hills (Sundstrom 1997b; Albers 2002).

Bodies of water were also recognized as sacred places. In the Mandan worldview, the Missouri was literally the boundary between two worlds: that created by Lone Man and that created by First Man (Bowers 1950:348). Places at the confluences of streams were sometimes considered sacred. One of the Cheyennes' sacred antelope pounds was at the confluence of Redwater Creek and the Belle Fourche River (Stands in Timber and Liberty 1967:85).

Although not well documented, divides probably were considered sacred in some areas of the northern plains. The north-south continental divide near Lake Traverse and Big Stone Lake at the South Dakota-Minnesota border is strongly associated in Dakota tradition with the Thunders. In this area, rock art boulders mark the locations of such places as Thunderbird's Nest and Thunderbird's Nest's Brother. These were places where the Thunders were thought to have alighted when the rest of the world was covered with water (Lewis 1886; Mooney 1896:968). This is consistent with a widespread association between Thunders and high places (e.g. Smith 1949:311).



*Figure 116. Bear Butte, 39MD33 (L. Sundstrom photo, 2015).*

The gaps or passes that led into or through mountainous areas also were frequently considered sacred places. The best known of these are Buffalo Gap in the Black Hills and Pryor Gap in the Pryor Mountains. Lakotas and Cheyennes associated Buffalo Gap with the origin and renewal of the bison herds and with the story of the Great Race that established order in the world (Bad Heart Bull 1967:289; Grinnell 1962:252). Another Buffalo Gap cuts through White Buffalo Buttes in central South Dakota (Jorgensen 1974:52). Like the Buffalo Gap in the Black Hills, Lakotas believed it was formed by bison emerging from the underground world through a nearby cave. The high ridge of sandstone surrounding the Black Hills is cut by several deep gaps. These contain numerous rock art sites, suggesting that these gaps were also sacred places (Sundstrom 2004a).

Most northern plains groups recognized certain rocks as sacred. A well known Dakota rock shrine was Red Rock near Saint Paul, Minnesota (Densmore 1918:206; Dorsey 1894:448). The Dakotas, Yanktons, and Lakotas apparently had many such sacred boulders (Densmore 1918:206; Riggs 1880:268; Heilbron 1958; Lewis 1886, 1887). The missionary Stephen R. Riggs observed in the late 1870s that “large bowlders were selected and adorned with red and green paint whither the devout Dakota might go to pray and offer his sacrifice” (Riggs 1880:268). Many of these rocks were painted or incised. Others either were unmodified or the traces of paint have disappeared over time. Two recently recorded sites in central South Dakota consist of large, undecorated boulders. One has offerings in the sediments at its base. The other has smaller boulders arranged around it. According to local historians, the latter was a place where young women prayed to be granted children, but the significance of the former has not yet been established (Archaeological Research Center records).

Rocks were an important focus of religious activities among the Arikaras. The Arikaras believed that some rocks were people who had turned to stone (Parks 1996:310–14; Beede ca. 1920c). These include the famous Standing Rock, now at Fort Yates, North Dakota, and the stone known as Where the Old Man Sat on the Hill or Where the Tongue Was on the Hill (Parks 1996:310–14). The Lakotas and Yanktons living at Standing Rock Reservation borrowed this tradition from the Arikaras (Will 1924:299; Parks 1996:313; Beede ca. 1920c; for Lakota version of story see Deloria 1992:108 or McLaughlin 1916:40–41). Like the Arikaras, they venerated the Standing Rock (McLaughlin 1916:41; Beede ca. 1920c). Indians living near Devils Lake visited a stone shrine thought to represent a woman and child (North Dakota Writers' Project 1938:256–7).

Northern plains groups often attached religious meaning to unusual or unique physical features or features whose form could be linked to mythological traditions. In South Dakota, the Red Valley surrounding the interior Black Hills is still commonly called the Racetrack in reference to a Cheyenne and Lakota myth (DeMallie 1984:309–11; Odell 1942:5; Schlesier 1987:58; Powell 1969:472–7; Grinnell 1962:252–4; Lemmon 1987:245–250; Densmore 1918:318; Marquis and Limbaugh 1973:30; Stands in Timber and Liberty 1967:23). The Cheyennes saw Bear Butte as a lodge (Stands in Timber and Liberty 1967:35; Schlesier 1987:59), while their Lakota allies saw the body of a giant bear in the mountain's form (LaPointe 1976:38). A butte on the Grand River is supposed to represent the remains of a man who turned into a giant fishlike creature (Deloria 1992:103–5).



*Figure 117. The Ice Cave, 39PN376, contains red-painted handprints as well as archaeological deposits (L. Sundstrom photo, 2009).*

Another category of sacred sites comprises places whose sacred nature is expressed in stories about the origins of sacred bundles and ceremonies. These were places where specific kinds of beneficial supernatural powers were revealed; hence, they are associated with sacred bundles that encode stories of particular kinds of power and that are necessary in conducting various ceremonies. The origins of particular ceremonies are given in the stories accounting for the sacred bundles associated with them. The ceremonies themselves could be conducted in many places, but their origins were tied to specific places. As a group approached these special places, they were reminded of the importance of conducting the ceremonies correctly. These places also tended to define tribal boundaries, because it was at these places that a particular nation was granted its own distinctive ceremonies.

Bear Butte is associated with several sacred bundles. These include the Sacred Arrow and Sacred Hat bundles of the Cheyennes, the Bear Kidney bundle of the Kiowas, the Horse Medicine bundle of the Naishan Dene, and an incense medicine used by the Arapahos (Stands in Timber and Liberty 1967:89; Odell 1942; Hyde 1968:242). Some Lakotas also associate their Sacred Calf Pipe bundle with Bear Butte (Stands in Timber and Liberty 1967:89). Bear Butte and several other places in the Black Hills appear to be associated with Lakota sacred bundles containing star and landmark maps (Goodman 1992; Sundstrom 1997b). Although specific historical references are lacking, a version of the Fallen Star myth cycle recorded in 1944 supports the connection between the map bundles, the Fallen Star stories, and landscape features in and near the Black Hills (Neihardt 1991; DeMallie 1984; Sundstrom 1997b).

Several lakes are documented as sacred places associated with sacred bundles or rites. Spear Lake in Wyoming is associated with the ten sacred medicine bags of the Kiowas (Boyd 1983:11–12), although an earlier account suggests that the sacred lake may have been Bear Butte Lake in the northern Black Hills (Nye 1962:49). The Naishan Dene stated that their sacred bundles came from the northern Black Hills, again probably referring to Bear Butte Lake (McAllister 1937:162; Sundstrom 1997b). They believed that their Water Medicine or Four Quartz Rock bundle had come from under the waters of Medicine Water “thought to be located in the Black Hills of South Dakota in a region known as Bear Mountain or Black Rock” (McAllister 1965:215). Bear Mountain might refer to either the Bear Lodge (Devils Tower) or to Bear Butte, but only the latter is in the South Dakota portion of the Hills. The Omahas' Sacred Pole originated at a sacred lake. Its location appears to have been forgotten, but some have speculated that it was Lake Andes in eastern South Dakota (Fletcher and LaFlesche 1911:73).

The list of archaeological features that may indicate a sacred site includes: rock art (especially rock art that does not depict warriors' exploits); cairns; stone alignments or effigies; mounds and intaglios; eagle catch pits and associated timber lodges; vision quest enclosures or pits; human remains or burial goods; and the remains of ceremonial structures. Sites containing items typically used for offerings or as components of sacred bundles should also be considered potential sacred sites. The most common items given as offerings—tobacco, robes, and cloth—quickly disintegrate. Offerings that have been found in archaeological contexts include: feathers; coins; arrows and arrow points (usually unused); stone or ceramic pipes; knives (stone or metal); beads, bracelets, earrings, rings, and other ornaments; bone or metal sewing awls; stone or metal hide scrapers; perforated elk teeth; shells; bird claw pendants, painted bone objects; ocher or other paints or paint containers; unusual stone formations and fossils (including *iniskim*); an engraved brass disc; brass fasteners; brass bells; an owl- or eagle-quill whistle, and ceramic vessels or sherds

(Sundstrom 1996b; Kehoe and Kehoe 1979; Grey 1963; Buckles 1964; Buchner 1995; Park 1990; Calder 1977; Wormington and Forbis 1965:122–125; Nelson 1943:166; Gebhard *et al.* 1964). This list does not include grave goods, which can be practically anything.

In most cases, there is no easy way to tell whether an object was an offering. That has to be established by either the archaeological context in which it is found or by ethnographic references to the place where it was found. Similarly, it is difficult or impossible, in most cases, to recognize a place as sacred based on archaeological material alone. While the combination of landscape feature and archaeological material may lead to the recognition of potentially significant places, other kinds of information are usually needed to demonstrate whether such places were actually part of the sacred landscape of the various groups inhabiting a given area.



*Figure 118. Site 39HN1520 includes four large cairns, two large stone circles, and a long stone alignment on and leading to a ridgetop overlooking a river valley. Its complexity and features suggest ceremonial activities happened there (L. Sundstrom photo, 2018).*

Some sacred sites are clearly associated with natural resources. To put it another way, some kinds of natural resources are more likely than others to contain sacred sites. These include rivers, springs, closed-basin lakes, prominent mountains and buttes, caves, outcrops of ocher and other pigments or colored earths, fossil outcrops, and pipestone sources.

Most water sources were not considered sacred places, but many were. Springs in general, and thermal springs in particular, are often sacred places in northern Plains Indian tradition. Thermal

springs, including those near the town of Hot Springs, South Dakota, were believed to be places of healing and power. Closed-basin lakes, such as Lake Andes and Spirit Lake in South Dakota, tend to contain high concentrations of salts and other minerals that may be therapeutic for particular ailments. Such lakes have other unique characteristics, such greater buoyancy due to their denser mineral composition. Both mineral lakes and thermal springs can produce patination on objects placed in their waters, and this too may have contributed to their significance (Benedict 1992).

Game resource areas are closely related to the distribution of sacred sites. Perhaps the clearest expression of the connection between game resource areas and sacred sites are in statements made about the Black Hills. Reporters accompanying the 1874 Black Hills Expedition noted that the Lakotas regarded the area as a “combined deer park and Mecca,” meaning that taboos about the Black Hills as a sacred area served to protect it from being overhunted. In this way, the area was maintained as a combination religious retreat and hunting ground—a place where both spiritual and bodily sustenance could always be found (Krause and Olson 1974:149–150). This attitude toward the area is reflected in Black Elk's recollections of a trip to the Black Hills in 1874. Fasting, hunting, fishing, and vision seeking were all a part of Black Elk's boyhood experience in the Black Hills (DeMallie 1984:309–311). During negotiations with the federal government for surrender of the Black Hills, Red Cloud and Sitting Bull emphasized its economic value, referring to the area as their “meat pack”; however, Red Cloud refused to cede the area from the Racetrack outward (Worster 1992; Sundstrom 1997b). This zone comprises the foothills of the Black Hills and includes the major sacred sites of the Lakotas: Bear Butte, Devils Tower, Sun Dance Hills, Inyan Kara, Hot Springs, Buffalo Gap, and Rapid Valley (Sundstrom 1997b). The federal negotiators, of course, neither grasped nor honored Red Cloud's request. In this case, and probably in many others, the availability of game and plant foods was part of the special nature of the sacredness of the area. For example, the Buffalo Gap and the Racetrack were both important landmarks in Lakota and Cheyenne origin myths explaining the origins of hunting. Other origin myths referring to sacred buttes (Bear Butte and Old Woman's Butte) relate how the Black Hills country was given to the Cheyenne and Lakota people, respectively, as their hunting ground (Schlesier 1987:77–78; Sage 1846:127–130).

Eagle-trapping grounds are sacred places in most northern Plains Indian traditions. For example, the Mandan mythology identifies a specific set of places as the eagle-trapping camps of the black bears (Bowers 1950:214–236). Such places often lay far from the main camps or villages in broken country. Like the major hunting grounds, eagle-trapping grounds were considered special gifts from the spirits and thus are simultaneously resource procurement sites and religious sites. Obviously, such quasi-religious features as eagle-trapping pits, eagle trappers' lodges, rock art related to eagle trapping (cf. Sundstrom 2004a), or antler stacks indicate resource procurement within a larger religious context.

Pipestone sources were generally considered sacred places. Virtually all northern Plains tribes used and revered the great pipestone quarries in southwestern Minnesota (Catlin 1844I:31, 234, 1844II:163–173; Bray and Bray 1976:72–77; Howard 1965:17). Rock art and stone effigies serve to reinforce the sacredness of the Pipestone area (Lewis 1889, 1890; Bray and Bray 1976:69, note 52; Howard 1965:17; Catlin 1844II:163–173). Another resource area imbued with sacred meaning was Lake Kampeska (Howard 1972:301; South Dakota Writers' Project 1941:123–124).

Outcrops of ocher and other pigments and colored earth are rarely mentioned in archaeological studies as significant to prehistoric land-use patterns. Ethnographic data, however, suggest that such “paint mines” were important resources that determined in part seasonal movements of northern Plains people. The Hidatsa typically associated such places with origin myths and considered them sacred ground. Other tribes' traditions are not as clear, but it is reasonable to assume that the sources of materials used in ceremonies, such as pigments and special earth would themselves be considered sacred. At least 25 such paint mines in the northern plains are recorded in the ethnographic literature. These occur at buttes, stream banks, badlands areas, and springs.

Ceremonial grounds tend to occur in well-watered, grassy areas near prominent landmarks. These landmarks, in turn, often served to define a groups' home or hunting territory. Thus, the ceremonial grounds are only indirectly related to resource availability. For large ceremonies such as the Sun Dance, a good supply of wood, water, and grass were necessary to support the large number of participants and spectators. Smaller ceremonies, however, took place where religious tradition, rather than practical constraints, dictated (cf. Bowers 1950, 1963).

In northern Plains Indian tradition, a single place may have different names in different contexts. A place may have one or more sacred names referring to its religious significance, as well as names descriptive of the resources it contains or some distinctive physical feature. Sacred sites may have different names at different times of the year, to coincide with the stories or constellations appropriate to the season. This complex view of landscape makes it difficult to draw exact correlations between sacred sites and resource areas. Nevertheless, a few patterns emerge. First, many different kinds of places were sacred according to the definition used here. Such sites are widely distributed across the northern Plains and encompass all kinds of landforms, from single glacial boulders to entire mountain ranges. Second, resource islands and clusters of sacred sites are closely correlated. This is probably because resource-rich areas tended to serve either as core habitation areas for particular tribes or as seasonal hunting grounds. In either case, a body of oral tradition confirms and reinforces the tribe's connection to their territory, as well as serving to regulate the extraction of resources from the area. The single exceptions to this pattern are plant food resources and flint quarries. Few religious traditions are connected to these resources, perhaps because they are widespread and relatively easily obtained. Third, to understand landscape use, archaeologists must consider not just physical necessities such as food and shelter, but also the distribution of items needed for ceremonies, such as pipestone, mineral pigments, fossils, and colored earth.

Although this discussion has focused on Native American sites, cultural resource managers should be aware that other communities and groups may recognize places as sacred or traditional sites. Some of these places may fit with the definition of traditional cultural properties. Cultural resources managers should work with local groups and organizations to determine the location of such properties.

## **Temporal Boundaries**

Probably entire span of human history in South Dakota.

## **Spatial Boundaries**

Entire state.

## **Research Topics**

1. How reflective of past beliefs and ceremonies are modern spiritual beliefs and practices?
2. Is the sacred/profane dichotomy appropriate for pre-contact Native American sites?
3. What artifact assemblages and settings are typical of likely sacred sites in South Dakota?
4. What is the time-depth of use of various sacred sites and traditional cultural properties?

## **Condition and Archaeological Potential**

Condition varies by site type. Some sacred places have been largely destroyed by construction and other development activities. Others are undisturbed. Their potential to yield information on aspects of prehistoric culture that are poorly understood at present is high; however, many Indian tribes have expressed a desire that such places not be excavated or otherwise subjected to archaeological study.

Because such sites are likely to be part of ongoing Native American religious traditions, their management presents special challenges. While tribal consultations can identify ceremonial sites still in use, those places that were part of religious traditions historically, but subsequently abandoned, are less likely to be identified through interviews. Most archaeological survey projects do not include the detailed ethnohistorical research needed to identify such places. Another complex issue concerns the surrounding environment. Development or resource-extraction activity near a sacred site or traditional-use property may damage or ruin the attributes that make it significant. For example, Lakota and Cheyenne people have objected to the placement of “biker” bars, campgrounds, and a shooting range near the base of Bear Butte, because the resulting noise and traffic impedes traditional use of the sacred mountain. Some Native American people may object to site management activities such as photographing features, stabilizing rock art panels or other structures, and prohibiting the repainting of rock art panels or reconstruction of historic features. Finally, site managers may simply miss significant natural features of a traditional site, such as distinctive vegetation, solar or star alignments, or the color and shape of rocks that may lend a unique character to the place. Learning to identify potential sacred sites and other traditional properties is only the first step in protecting these places from damage and destruction.

In using the list below of sites listed as potential traditional cultural properties in the official site record, readers should bear in mind that other site types, such as burials, mounds, some cairns, some stone alignments, and some stone circles, may also be considered sacred sites or traditional cultural properties. Further, many sites were entered into the state data base before *traditional cultural property* was added to the options for property type.

## **Sites Described as Traditional Cultural Properties**

39BN160, 39BN161, 39BN162, 39BN163, 39BN164, 39BN165, 39BN166, 39BN167, 39BU142, 39CA303, 39CH309, 39CH311, 39CO430, 39CO431, 39CO432, 39CO433, 39CO434, 39CO435, 39CO436, 39CO437, 39CO438, 39CO439, 39CO441, 39CO442, 39DA123, 39DA124, 39DA125, 39DA126, 39DA127, 39DA128, 39DA129, 39DA130, 39DA131, 39DA132, 39DA133, 39DA134, 39DA135, 39DA136, 39DA137, 39DA138, 39DA139, 39DA140, 39DA141, 39DA142, 39DA144, 39DA145, 39DA146, 39DA147, 39DA148, 39DA149, 39DA150, 39DA151, 39DA152, 39DA153, 39DA154, 39DA155, 39DA156, 39DA157, 39DA158, 39DA159, 39DA160, 39DA161, 39DA162, 39DA163, 39DA164, 39DA165, 39DA169, 39DA178, 39GT80, 39GT81, 39GT82, 39GT83, 39GT84, 39GT85, 39GT87, 39GT88, 39GT89, 39GT90, 39GT91, 39GT92, 39GT93, 39GT94, 39GT95, 39GT96, 39GT97, 39GT98, 39GT99, 39GT100, 39GT101, 39GT102, 39GT103, 39GT104, 39GT105, 39GT106, 39GT107, 39GT108, 39GT109, 39GT110, 39GT111, 39GT112, 39GT113, 39GT114, 39GT115, 39GT116, 39GT117, 39GT118, 39GT119, 39GT120, 39GT121, 39GT122, 39GT123, 39GT124, 39GT125, 39GT126, 39GT127, 39GT128, 39GT129, 39GT130, 39GT131, 39GT132, 39GT133, 39GT134, 39GT135, 39GT136, 39GT137, 39GT138, 39GT139, 39GT140, 39GT141, 39GT142, 39GT143, 39GT144, 39GT145, 39GT146, 39GT147, 39GT148, 39GT149, 39GT150, 39GT151, 39GT152, 39GT153, 39GT154, 39GT155, 39GT156, 39GT157, 39GT158, 39GT159, 39GT160, 39GT161, 39GT162, 39GT163, 39GT164, 39GT165, 39GT166, 39GT167, 39GT168, 39GT169, 39GT170, 39GT171, 39GT172, 39GT173, 39GT174, 39GT175, 39GT176, 39GT177, 39GT178, 39GT179, 39GT180, 39GT181, 39GT182, 39LN2, 39LN99, 39LN104, 39OL1, 39PN2844, 39TD35, 39TD44

## **Bibliography**

Sundstrom 1997b, 2003a, 2004b; Nabokov 2005; Albers 2003; LaPointe 1976; Will 1924

## **Burials/Human Remains**

### **Overview**

Following the common terminology, “burial” here refers to any feature resulting from the formal or accidental placement of human remains. Although burials make up only one percent of recorded archaeological sites in the state, many forms of human burial are found in South Dakota, including mound burial, interment, rock or cairn burial, rock ledge burial, and tree burial.

All recorded historic, Euro-, Asian-, and African-American burials are interments. As a rule, such historic-era burials are marked with gravestones, wooden markers, a fence or rock border, or a pavement of concrete or rock that covers the entire grave, but some are simply unmarked depressions. Such graves are generally dug quite deep, but just wide and long enough to accommodate a coffin for a supine body. Children’s graves thus are smaller than those of adults. Graves are usually grouped by family, and a fence or other border may delineate each family plot within a larger cemetery. Bodies were placed one to a grave, except occasionally women and infants were buried together in one grave. Formal cemeteries, informal rural family burying grounds, and individual graves are known from this period. Such graves usually contain few items other than those in which the deceased was dressed, but other items, including framed photographs,

flowers, and vases often were placed on top of the grave when people came to visit it. Cemeteries associated with particular ethnic groups reflect their individual traditions: for example, vessels to hold food and incense were placed on or near Chinese graves in Deadwood.

Euro-American burials are much more likely to occur in isolation from other graves than are Native American burials of the same era. Of confirmed or probable burial sites in South Dakota, 38% of Euro-American graves are single interments, with no other graves occurring nearby. By contrast, only 11% of historic Native American interments in the state occur outside family, church, or community cemeteries. More than 40% of historic Native American graves are in formal cemeteries, as opposed to only 23% of Euro-American graves. This likely reflects the strong emphasis placed on relatedness in Lakota culture, which is also seen in patterns of settlement. While Euro-Americans tended to establish homesteads in isolation from one another, members of the Indian community placed their homes in clusters.

Historic and protohistoric Native American burials took several forms. On the reservations and among Christianized families, interment in church or community cemeteries was the rule. Bodies were placed in coffins for burial following the Euro-American practice. Sometimes rather than interment, bodies were placed inside large wooden boxes, coffins, trunks, or wagon boxes, and rocks and earth were heaped up over them. Some extended family groups, or *tiyospaye*, maintained small cemeteries on their rural allotments. Tree and scaffold burials continued in some families through the early reservation period. This involved cleaning and dressing the body, wrapping it tightly in a hide or blanket shroud, and placing it high in the forks of a tree or on top of a high platform constructed for the purpose. Sometimes the bones were collected later, bundled together, and interred. Other times, those in charge placed a body under a rock ledge and either sealed it in by placing rocks in front of it or collapsed the rock ledge down over it. Alternatively, rocks could be piled up over a body placed either in a shroud or coffin. This prevented scavengers from disturbing the remains. Lakota people sometimes constructed cairns over graves when a lack of trees prevented scaffold or tree burial (Carleton 1983:278).

Tree, scaffold, and rock ledge burials are presumed to have been practiced in pre-contact times; however, so little survives of these that the antiquity of the practices cannot be determined. Another type of burial practiced both before and after Euro-American settlement was interring bodies within existing (usually Woodland-age) mounds. Graves were dug into the mounds and the human remains deposited there.

In village sites along the Missouri River and in eastern South Dakota, bodies were sometimes buried in cemeteries near the village or inside large, deep, corn-storage pits within the villages. The cache pit burials include both primary (time of death) and secondary (bone bundle) burials.

Because earth lodge villages were subject to violent attack, some of them contain the remains of people slain during raids. At the Crow Creek site, for example, several hundred individuals were killed and their bodies mutilated and thrown into a defensive ditch at the village edge (Zimmerman and Bradley 1993). No deliberate cremations have been discovered in the state; however, some of the bodies found in raided villages were burned when the earth lodges were set aflame.

During the Woodland period, large mounds were constructed over single and multiple burials. From this period on, both primary (time of death) and secondary (bone-bundle) burials occur in

the archaeological record. In the case of secondary burials, bodies were apparently left on scaffolds until partially decomposed, then any remaining skin and tendons were removed and the bones neatly bundled together for burial in mounds.

Interments are more likely to be preserved over long periods than are scaffold and tree burials. A few possible scaffold burials have been identified where glass beads and pole fragments are scattered on the ground surface. Glass beads tend to show up in anthills. The ants gather them from the surrounding terrain and add them to the tiny rocks used to build up the hill. One possible rock ledge burial was identified from a few beads eroding out from a deep horizontal crevice. No human bone was observed at these sites. A woman's skeleton was excavated from a crevice in the Badlands where it had been placed about 1000 years ago and subsequently eroded out (Michael 1987). Another burial from the same period was found in northwestern South Dakota, similarly exposed by erosion. This was that of a man who had an ornament made of several conch shell cores (Floden 1984).

Archaeological site records maintained by the South Dakota Historic Society list all possible burial sites as burials. Most of these sites have not been confirmed as containing human remains. They are cairns, depressions, stone outlines, and the like. This means that many sites listed as burials probably contain no human remains. The burial designation assures that they will receive appropriate care if ground-moving activities are proposed for their locations. Nearly all the excavated burials in South Dakota were encountered accidentally during construction activities, excavated prior to construction of the hydroelectric dams, or found by farmers when plowing or building catchment dams. Others, such as the large group at the Crow Creek site, were unearthed by looters. Because many of these are already disturbed when reported to archaeologists, it is often impossible to reconstruct the form of the burial. For this reason, and because very few sites have been excavated, very little is known about pre-contact funerary and burial practices in South Dakota. Today, if a burial is encountered in an archaeological excavation, it is immediately covered up again and left in place if at all possible; otherwise, arrangements are made for reburial under the provisions of NAGPRA (if the remains are Native American) or the local community most closely affiliated with the remains. Human remains found in other contexts are considered potential crime scenes and must be first reported to the county sheriff or coroner, who will determine whether to call in archaeologists for consultation. Detailed reports are prepared for all excavated burials, whether intentionally or accidentally uncovered and whether or not they are turned over to tribes or communities for reburial.

Two ongoing management concerns are looting and damage by lake-shore erosion along the Missouri River.

## **Temporal Boundaries**

All periods. Two sets of human remains from the Medicine Crow site, (39BF2/39BF218) may be Archaic in age. These were a male aged 20–30 found in place and a female aged 30–40 and an infant exposed when a block of sediment slumped off (Bass 1976; Rose *et al.* 1984). Because the site contains Post-Contact Coalescent, Middle Archaic, and Late Archaic levels, as well as several intrusive Dakota or Lakota burials, the age of the three sets of humans remains cannot be established with confidence. No other Archaic burials have been found in South Dakota; however, their presence elsewhere in the northern Great Plains indicates that some may eventually be

discovered. With the Woodland period, burial sites are more abundant. Relatively few Plains Village burial sites are known; however, recorded sites tend to be cemeteries with large numbers of interments. The great majority of burial sites listed in the state site inventory are from the historic period (after 1861 CE).

## **Spatial Boundaries**

All areas.

## **Property Types**

Any human remains, whether deliberately placed or not, or places of deliberate placement of human remains, including graves, cemeteries, burial mounds, rock ledge burials, and scaffold or tree burials, and interments within earth lodges, tipis, other structures, caves, and cache pits. Property types also include human remains that received no formal placement, such as the bodies of individuals found at the site of accidental or deliberate death.

## **Burial Sites**

**Paleoindian:** 39BF2/39BF218

**Woodland Sites:** 39BE46, 39BE64, 39BF205, 39BF206, 39BF219, 39BF224, 39BK101, 39BK103, 39BN1, 39BN2, 39BN11, 39BN14, 39BN124, 39BO103, 39BO206, 39BR39, 39CH9, 39CH59?, 39CH207, 39CH210, 39DE13, 39DW252, 39DW255, 39FK15, 39GT35, 39HD2, 39HL26, 39HS68, 39HT1, 39HT2, 39HU203, 39LK2, 39LK15, 39LM59/39LM256, 39LM221, 39MH5, 39MH6, 39MH34, 39MH77, 39MH203, 39MH222, 39MH233, 39MK1, 39ML23, 39ML31, 39ML41, 39ML46, 39ML92, 39RO2, 39RO10, 39RO26, 39RO68, 39RO124, 39SP3, 39SP12, 39SP15, 39UN1, 39YK1, 39YK202, 39YK209

**Woodland or Plains Village:** 39CH227, 39RO4, 39UN10

**Late Prehistoric:** 39FA30?, 39FA392, 39SH117

**Undifferentiated Plains Village:** 39BK20, 39CA102, 39CA117, 39CA205, 39CA208, 39CH7, 39CO6, 39CO19, 39CO213, 39DV54 (Middle Missouri), 39HU10, 39HU97, 39HU205 (Coalescent), 39LM26, 39LM301, 39MP1, 39RO86, 39SL2, 39SL3, 39SL29, 39SL49, 39ST1, 39ST45, 39ST223, 39ST224, 39ST228, 39UN11, 39WW89, 39WW91

**Great Oasis:** 39LN70, 39MH10

**Initial Middle Missouri:** 39BF11, 39BF221, 39BR39, 39HU213, 39LM57, 39LM59, 39LM225?, 39ST11

**Extended Middle Missouri:** 39CO3, 39CO145

**Initial Coalescent:** 39BF11, 39HU6, 39ST203, 39WW301

**Extended Coalescent:** 39BF205, 39BR36, 39CO1, 39HU7, 39HU208, 39LM222, 39ST215, 39WW2, 39WW302

**Post-Contact Coalescent:** 39BF2, 39BF205, 39CO9, 39HU10, 39HU220, 39LM34, 39PO1, 39PO3?, 39SL4, 39ST17, 39ST215, 39ST216, 39WW2, 39WW7

**Protohistoric Lakota/Dakota and other Native American:** 39BF3, 39BF10, 39BU435, 39CH25, 39CH49, 39HN529, 39KB11, 39LA48, 39LM27, 39MH5, 39MH6, 39ML11, 39SH305, 39SH334, 39SH519, 39SP11, 39TD44, 39TD97, 39ZB3

**Historic Lakota/Dakota and other Native American:** 39BF2 (Lakota or Dakota), 39BF3 (Lakota or Dakota), 39BF8/39BF207 (Lakota, Santee, Winnebago), 39BF50, 39BF219, 39BF221, 39BF225, 39BF231, 39BF243, 39CH13, 39CH18, 39CH21, 39CH49?, 39CH56, 39CH224, 39CH302, 39CH308, 39CL1, 39CL6, 39CO131, 39CO145, 39DE53?, 39DW100, 39DW361, 39HN26, 39HU2, 39HU41, 39HU43, 39HU229, 39JK58, 39LM29, 39LM39, 39LM45, 39LM85, 39LM87, 39LM251 (unspecified), 39LM288, 39LM304, 39LM462, 39LN1, 39MD22 (Ute), 39LM7, 39ML11, 39ML36 (Sisseton), 39ML95, 39MT13, 39RO6, 39RO10, 39RO37 (unspecified), 39SH305, 39SH487, 39SH522, 39SL108, 39ST127, 398ST227, 39TD3, 39TD9, 39TD33, 39TD44, 39TD83, 39ZB3, 39ZB4, 39ZB89?

**Historic Euro-American:** 39BN133, 39BN135, 39BO74, 39CA122, 39CA133, 39CA183, 39CA302, 39CH234, 39CU146, 39CU440, 39CU505, 39CU602, 39CU707, 39CU839, 39CU1825, 39CU1831, 39CU2779, 39CU3050, 39CU4130, 39DW108, 39DW343, 39FA212, 39FA459, 39FA461, 39FA904, 39FA1468, 39JE86, 39FK5 (African-American and Euro-American), 39FK71, 39FK118, 39GR83, 39GR112, 39GT48, 39HK87, 39HN448, 39HN1173, 39HS72, 39HS84, 39HT9, 39HT134, 39HT138, 39HU209, 39JE6, 39JK51, 39LA39, 39LA45, 39LA83, 39LA86, 39LA230, 39LA289C, 39LA294, 39LA333, 39LA343, 39LA379, 39LA406, 39LA476, 39LA657, 39LA658, 39LA668, 39LA687, 39LA1141, 39LA1329, 39LA1383, 39LA1557, 39LN40, 39MD253, 39MD349, 39MD640, 39MH262, 39MH329, 39ML2, 39ML51, 39MN7, 39MO18, 39MP64, 39MP69, 39MP72, 39MP98, 39MT40, 39PN396, 39PN421, 39PN465, 39PN734, 39PN886, 39PN981, 39PN1231, 39PN1613, 39PN1997, 39PN2815, 39PN3403, 39PN3497, 39PN3681, 39PN3714, 39RO27, 39SB82, 39SL74, 39SL126, 39SP156, 39ST49, 39ST158, 39ST182, 39ST281, 39ST298, 39ST354, 39TD53, 39UN4, 39UN5, 39UN6, 39UN21, 39YK52, 39YK84

**Historic, affiliation unknown:** 39BF55, 39BF63, 39DW92, 39ST54, 39ST60, 39ST269, 39ST439, 39WW84

**Other burial sites:** 39BE60, 39BF5, 39BF63, 39BF209, 39BF213, 39BF218, 39BN19, 39BU3, 39BU27, 39BU225, 39CA127, 39CA132, 39CA179, 39CA181, 39CA187, 39CD7, 39CD63, 39CH25, 39CH42, 39CH45, 39CH54, 39CH55, 39CH87, 39CH265, 39CK3, 39CL2, 39C086, 39C0209, 39CU3, 39CU360, 39CU584, 39CU909, 39CU2514, 39DA1, 39DA2, 39DA3, 39DA76, 39DE1, 39DE68, 39DV4, 39DV66, 39DW35, 39DW252, 39ED1, 39ED5, 39FA3, 39FA71, 39GR24, 39GR32, 39HD1, 39HD10, 39HD26, 39HD73, 39HL3, 39HL4, 39HL5, 39HN34, 39HN129, 39HN358, 39HN986, 39HN1256, 39HS1, 39HU31, 39HU48, 39HU100, 39HU232, 39JE5, 39JK209, 39KB23, 39KB24, 39LA48, 39LA821, 39LK12, 39LK50, 39LK100, 39LM25, 39LM43, 39LM176, 39LM194, 39LM205, 39LM388, 39LM464?, 39LN86, 39MD26,

39MD898, 39MH84, 39MH239, 39ML27, 39MP29, 39MP30, 39MP31, 39MP55, 39PN420, 39PN465, 39PN894, 39PN1680, 39P010, 39PO87, 39P0207, 39RO3, 39RO6, 39RO7, 39R018, 39R023, 39RO66, 39RO68, 39SB33, 39SL6, 39SL10, 39SL38/39SL39, 39SL46, 39SL106, 39SL107, 39SL113, 39SL247, 39SL259, 39LS373, 39SL376, 39SL377, 39SL274, 39SP13, 39ST22, 39ST32, 39ST53, 39ST75/39ST235, 39ST126, 39ST181, 39ST183, 39ST207, 39ST213, 39ST255, 39ST291, 39TD16, 39TD52, 39TD60, 39UN3, 39UN58, 39WB3, 39WW91, 39WW98, 39WW301, 39YK203, 39ZB2

### **Burial Sites Listed in the National Register of Historic Places**

39BE46, 39BE64, 39BF3, 39BF10, 39BF11, 39BF8, 39BF207, 39BF213, 39BF218, 39BF219, 39BF224, 39BF225, 39HS1, 39HU6, 39HU7, 39HU203, 39HU205, 39HU209, 39HU220, 39HU226, 39LM222, 39LM225, 39SP12, 39ST17, 39ST223, 39ST224, 39ST227, 39ST228

### **Condition and Archaeological Potential**

Many people oppose disturbing graves and other features containing human remains for research purposes alone. Because of the sensitivity of descendent communities and individuals toward human remains, archaeologists try to locate all possible burial sites well in advance of any federally- or state-supported construction, public lands development, agricultural use, or mining that will involve changes to the surface or subsurface of a project area. Nevertheless, human bone occasionally erodes out of cut banks or is unearthed by construction equipment. In such cases, a defined procedure is followed to ensure accurate records of potential crime scenes and to follow NAGPRA regulations where applicable. Given the generally accidental discovery of human remains, and various restrictions regarding their treatment, such material cannot be considered part of a research base. With so little control over the conditions of discovery and subsequent removal and disposition of human remains and items buried with them, such sites have little or no research potential.

Burial sites in South Dakota are, like all archaeological resources, threatened by various forms of development, agricultural use, and mining. They are also subject to looting, especially when bone is exposed in the banks of the Missouri River or its tributaries within public recreation areas. Another factor that contributes to accidental disturbance of burial sites is incomplete disinterment of old graves when cemeteries are relocated. Several burials have been found in cemeteries whose graves were supposed to have been moved to other locations. In an ideal world, human burials would rest in peace; however, in reality they are sometimes encountered accidentally. In such cases, the South Dakota State Historical Society offices follow a long-established practice of treating the remains in the manner most acceptable to recognized descendant communities.

## VI. ARCHAEOLOGICAL REGIONS

The boundaries of the archaeological regions used for site management in South Dakota largely correspond with drainage basins (Figure 3). Some boundaries were adjusted to accommodate previously-defined areas or management regions. In some places, boundaries were moved to the nearest road, rail line, or county line to simplify mapping and site management.

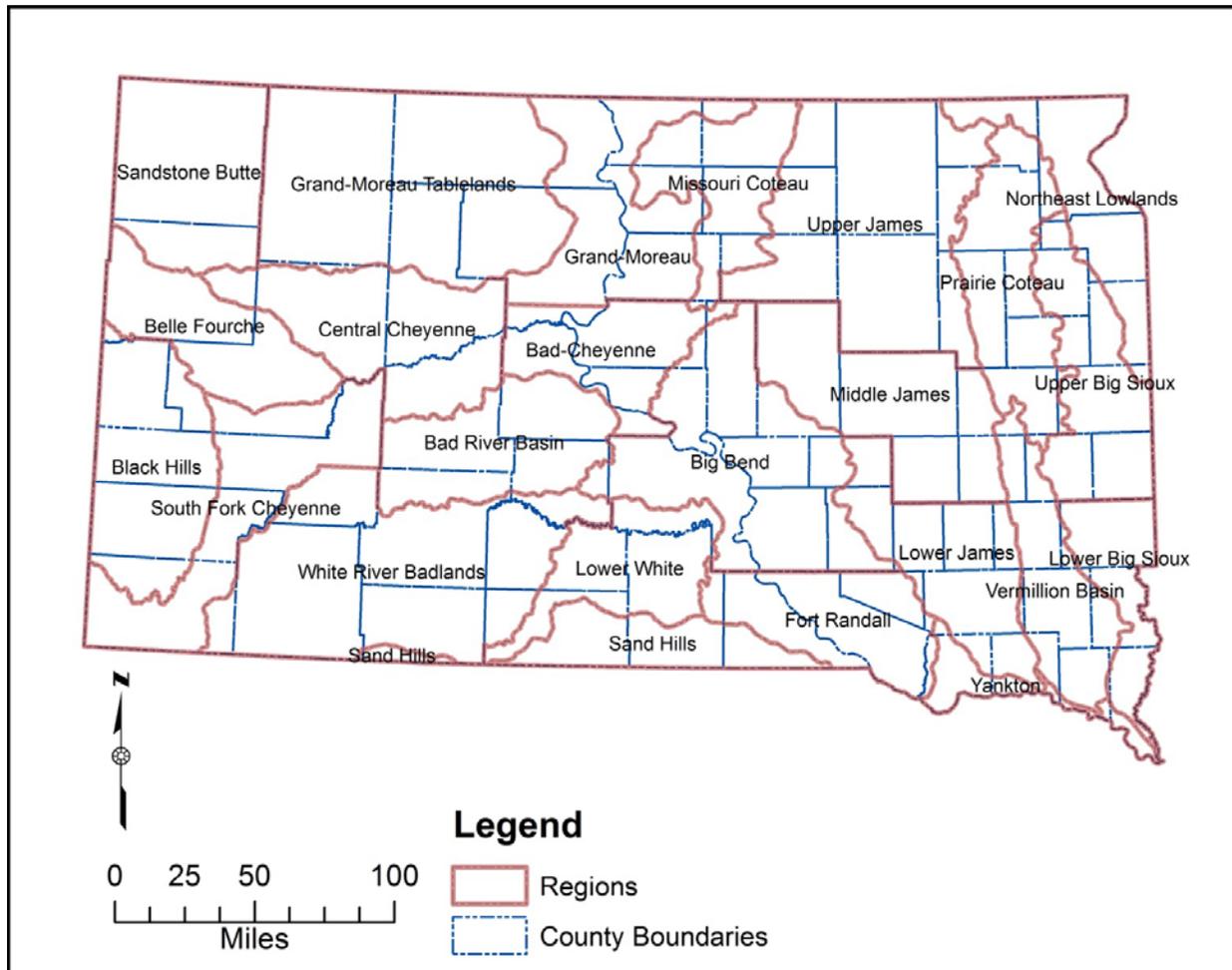


Figure 119. Map of the archaeological regions of South Dakota (ARC).

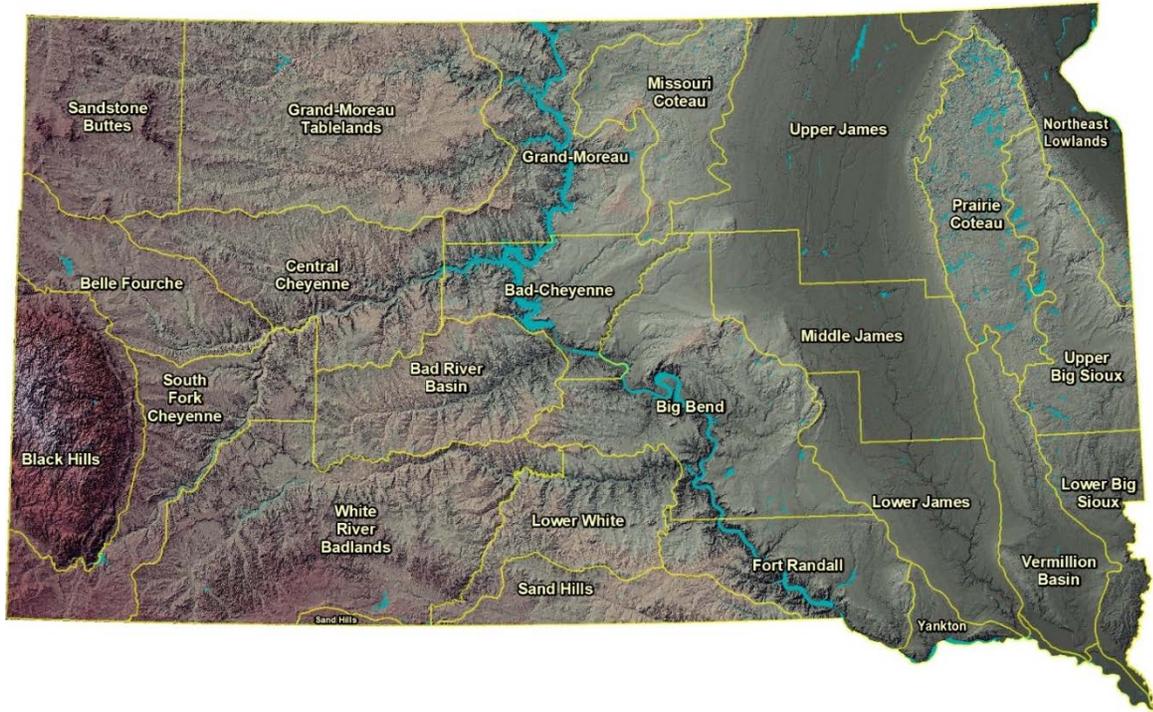


Figure 120. Satellite image showing boundaries of archaeological regions (ARC).

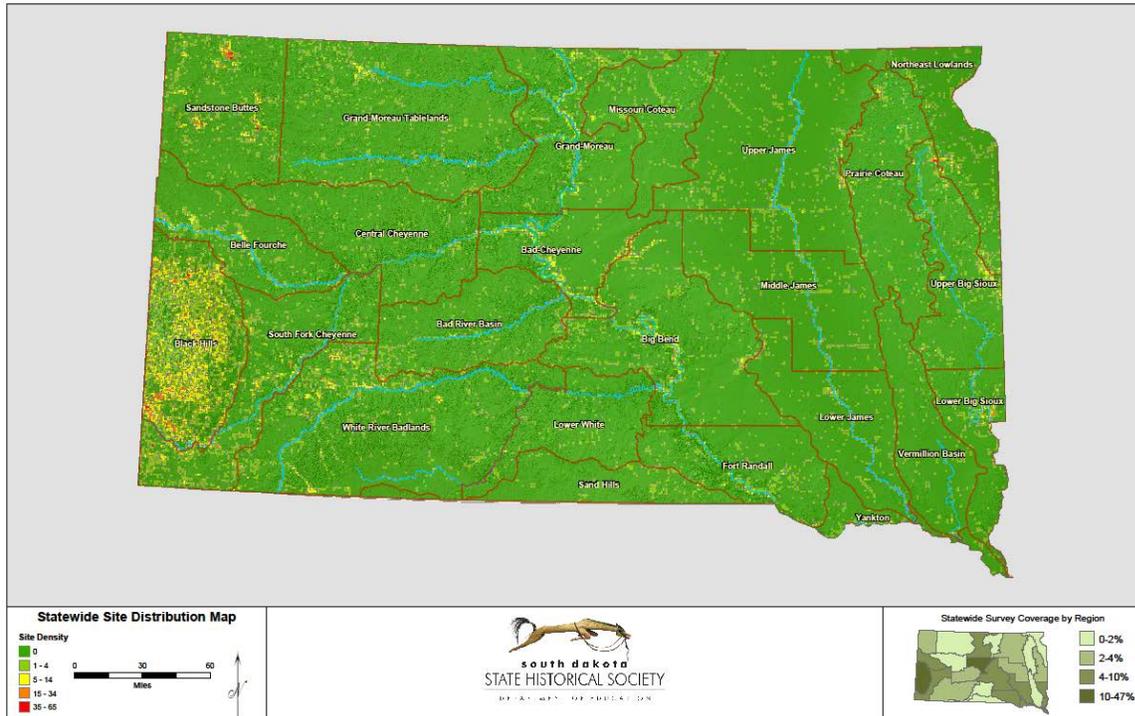


Figure 121. Density of known archaeological sites in South Dakota and relative completeness of archaeological survey coverage by archaeological region.

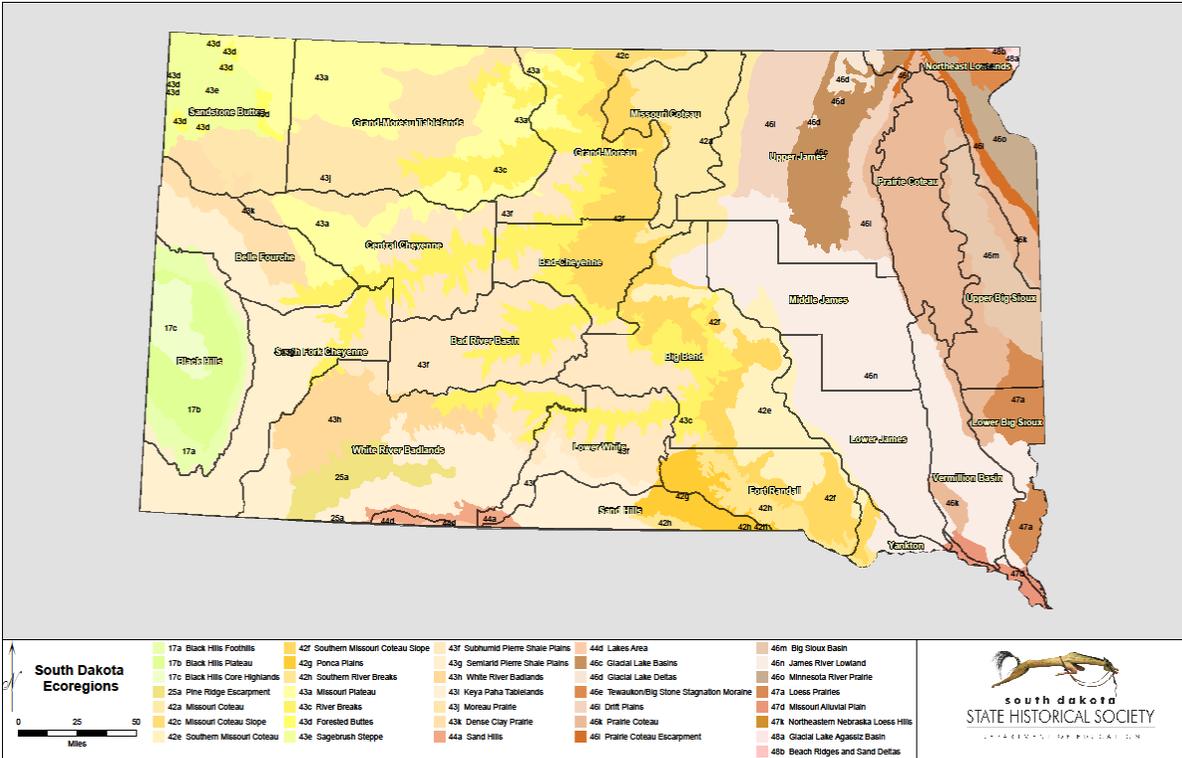


Figure 122. US Environmental Protection Agency ecoregions for South Dakota from web site <https://www.epa.gov/eco-research/ecoregion-download-files-state-region-8>. (Right click to open web page. See web site or descriptions of individual regions, below, for details.)

## Region 1: Sandstone Buttes

### Setting

The Sandstone Buttes Region encompasses the extreme northwestern corner of South Dakota. The region includes all of Harding County and that portion of Butte County north of the Moreau River drainage basin. This area is part of the Cretaceous Tablelands section of the Missouri Plateau division of the Great Plains (Rothrock 1943). The topography consists of rolling mixed-grass and short-grass prairie surrounding oasis-like pine parklands characterized by deep, narrow canyons, massive shale, limestone, and sandstone cliffs, and isolated flat-topped mesas capped with ponderosa pine forests (Beckes and Keyser 1983:211). Draws and canyons fringing the mesas contain dense stands of green ash and other deciduous trees intermixed with ponderosa pine. Primary drainages of the area include the Little Missouri, Grand, and Moreau Rivers. Major physical features are the Cave Hills, East Short Pine Hills, West Short Pine Hills, Slim Buttes, and a low escarpment referred to as the Jump-Off.



*Figure 123. Sandstone Buttes region landscape (L. Sundstrom photo).*

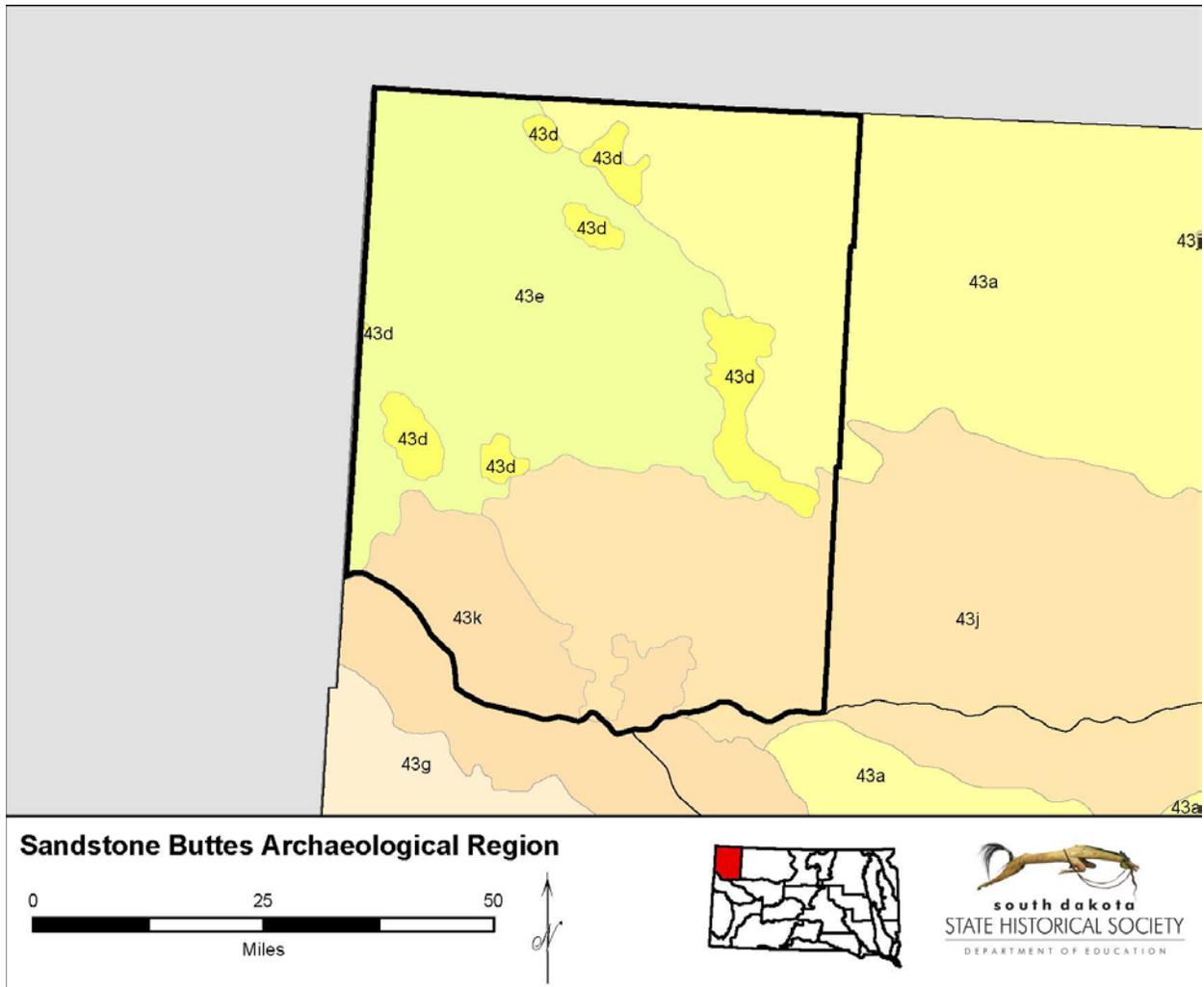


Figure 124. Ecoregions of the Sandstone Buttes archaeological region.

43: Northwestern Great Plains

43a: Missouri Plateau, unglaciated, moderately level to rolling plains with isolated sandstone buttes.

43d: Forested Buttes, unglaciated, prominent buttes with steep vertical sides; source of springs and drainage headwaters.

43e: Sagebrush Steppe, unglaciated, level to rolling plains with occasional buttes, badland formations, scoria (burnt coal) mounds, and salt pans.

43k: Dense Clay Prairie, unglaciated, rolling prairie; intermittent streams in shallow valleys.

## Previous Archaeological Investigations

Archaeological research in this area was conducted intermittently from the early 1900s through the early 1970s. Since the mid-1970s, small-scale contract surveys have focused on energy development, road construction, gravel quarrying, and transmission line and tower placement projects. Early references to archaeological sites in the area are made by Will (1909), Over (1936, 1941), and Gant (1961, 1962a). Later publications discussing the resources of the area include

Wood (1971a), L. Alex (1979a, 1979b), Floden (1984), and Sundstrom (1993a, 2004a). Small-scale surveys have been done for spring improvements, oil well pads, bridge replacements, gravel pits, transmission towers, small roads, and seismic lines. Major research projects include an inventory and synthesis of resources within the Custer Gallatin National Forest (Beckes and Keyser 1983; Keyser 1984), a sample survey of state-owned property adjacent to Forest Service lands (Chevance and Chevance 1983), a sample survey of the Little Missouri River valley (Chevance and Chevance 1984), a survey of portions of the Slim Buttes (Sundstrom 1996a), rock art surveys (Keyser 1984; Sundstrom 1993a, 2004), surveys of state lands (Sundstrom and Fosha 2016; Archaeological Research Center site records), and excavations at two sites (Fosha 2001; Fosha and Albanese 1998).

Ludlow Cave has provided important information since its excavation in 1920 (Over 1936). It yielded one of the most extensive collections of perishable artifacts and Avonlea projectile points in the northern Great Plains. It contained the only basketry fragments known from the western South Dakota and eastern Wyoming and Montana region. Although the archaeological material was badly mixed, the presence of diagnostic artifacts such as pottery, projectile points, and a wooden pipe fragment allow much of the material to be assigned to particular cultures and ages. The site's importance to Plains archaeology is reflected by its inclusion in books such as William Duncan Strong's (1940) *From History to Prehistory in the Northern Great Plains*, Waldo Wedel's (1961) *Prehistoric Man on the Great Plains*, and George Frison's (1978, 1991) *Prehistoric Hunters of the High Plains*. Artifacts and rock art from Ludlow Cave have been the subject of numerous archaeological studies (Mulloy 1958; Over 1941; Elston 1968; Frison 1976; L. Alex 1979a, 1979b; Buckles 1960; Keyser 1984, 1987; Beckes and Keyser 1983; Hannus and Nowak 1988; A. Johnson 1993; Wood 1971a; Wood and Downer 1977).

The first recorded non-Indian exploration of Ludlow Cave occurred during the Black Hills Expedition of 1874. A large party of 7th Cavalry, Indian scouts, scientists, engineers, and miners under the command of Lieutenant Colonel George A. Custer set out from Fort Abraham Lincoln, Dakota Territory, to explore the Black Hills. Their more specific goal was to investigate rumors of abundant gold in the region. The Black Hills were the heart of the Great Sioux Reservation and were recognized as the homeland and holy land of the Lakota nation (Krause and Olson 1974). Custer included exploration of Ludlow Cave in his plans for the expedition. Upon reaching Ludlow Cave, the members of the expedition noted abundant rock art on the walls of the cave and picked up many objects that Indians had left there as personal offerings. The soldiers used a pick and shovel to dig through the deposits (Libby 1920:164). It is not known what became of any of the items the soldiers removed from the cave.

In 1908, George Will, an ethnographer associated with the Peabody Museum at Harvard University, visited the Cave Hills area. He collected two petroglyphs and one pottery sherd for the Peabody Museum. He published a brief account of this field trip in *American Anthropologist* in 1909. Will's article provides an important description of a turtle effigy, a large stone cairn, and several kinds of rock art at the site.

In 1920, W.H. Over, director of the South Dakota State Museum, conducted excavations at Ludlow Cave. Most of the extant Ludlow Cave material was collected during Over's excavation. Over noted the presence of three distinct cultural levels in the cave deposits, but made little effort to separate the artifacts according to these levels. Over took the artifacts found during his

excavations and a few fragments of incised rock art found in or near the cave to the state museum in Vermillion. He also recovered an intact bas-relief head petroglyph from the piles of fallen rock. Over cataloged some of the material, but curated some without recording any information about it. Over's investigations were the basis for two articles (Over 1936, 1946), and his field notes about the rock art of the north Cave Hills formed an important part of a limited-circulation monograph on South Dakota rock art (Over 1941).

In 1968, Michael Kelley of the University of South Dakota Museum (now known as the W.H. Over Museum), returned to Ludlow Cave to determine whether any cultural deposits remained intact in the cave (M. Kelley 1970). This project entailed digging a single excavation unit along the west wall of the cave. The researchers found no artifacts or intact deposits. The collection from this project consists of a few pieces of butchered bison bone and chunks of unmodified Tongue River silicified siltstone. This material outcrops in the immediate vicinity of the cave. In 1970, most of the Ludlow Cave collection was transferred to the newly established Archaeological Research Center in Fort Meade. The collection was moved again when the Archaeological Research Center offices were relocated to Rapid City in 1987. Through the years, portions of the Ludlow Cave collection have been displayed or used in public education programs, but the entire collection is now in storage. Separate studies were made of the stone tools, projectile points, and ceramics from the collection (Wood 1971a; L. Alex 1979a, 1979b; Buckles 1960; Elston 1968; Hannus and Nowak 1988). In 1995, Custer National Forest and the Archaeological Research Center sponsored an assessment of Ludlow Cave materials (Sundstrom 1996b). This involved inventorying the artifacts and identifying their probable functions and cultural affiliations. Most were found to be offerings dating to the last several centuries. Few artifacts could be assigned to particular tribes; however, the presence of a probable Mandan pipe fragment radiocarbon dated to 1265 CE suggests Mandan use of the cave as a shrine for several centuries prior to the contact era.

Other archaeological research in the region has focused on rock art (Keyser 1984, 1987; Sundstrom 1993a, 1993b, 1996b, 1997a, 1998, 1999a, 2001a, 2001b, 2003b, 2004a, 2004b) and on limited site excavations. Excavations intended to stabilize the rapidly eroding Lightning Spring site (39HN204) revealed 14 separate layers dating to the Middle and Late Archaic periods (Keyser 1985; Keyser and Davis 1984, 1985; Wettstaed *et al.* 1991). The site was listed in the National Register of Historic Places in 1983. Test excavation for an access road examined three sites (39HN152, 39HN157/158, and 39HN163). These excavations revealed the presence of deeply stratified sites in sediments near the rim of the mesa forming the main portion of the Cave Hills, as well as in the lower valleys, as at Lightning Spring. The sites included components dating from the Early Archaic through Late Prehistoric periods (Metcalf and Black 1985), with possible Late Paleoindian material at one site. In 2005, trained volunteers excavated part of a rapidly eroding Late Prehistoric hearth and bison butchering complex; a large artifact scatter containing Early Archaic projectile points and Plains Village ceramics; and a bison bone bed exposed in an arroyo (Sundstrom 2005a).

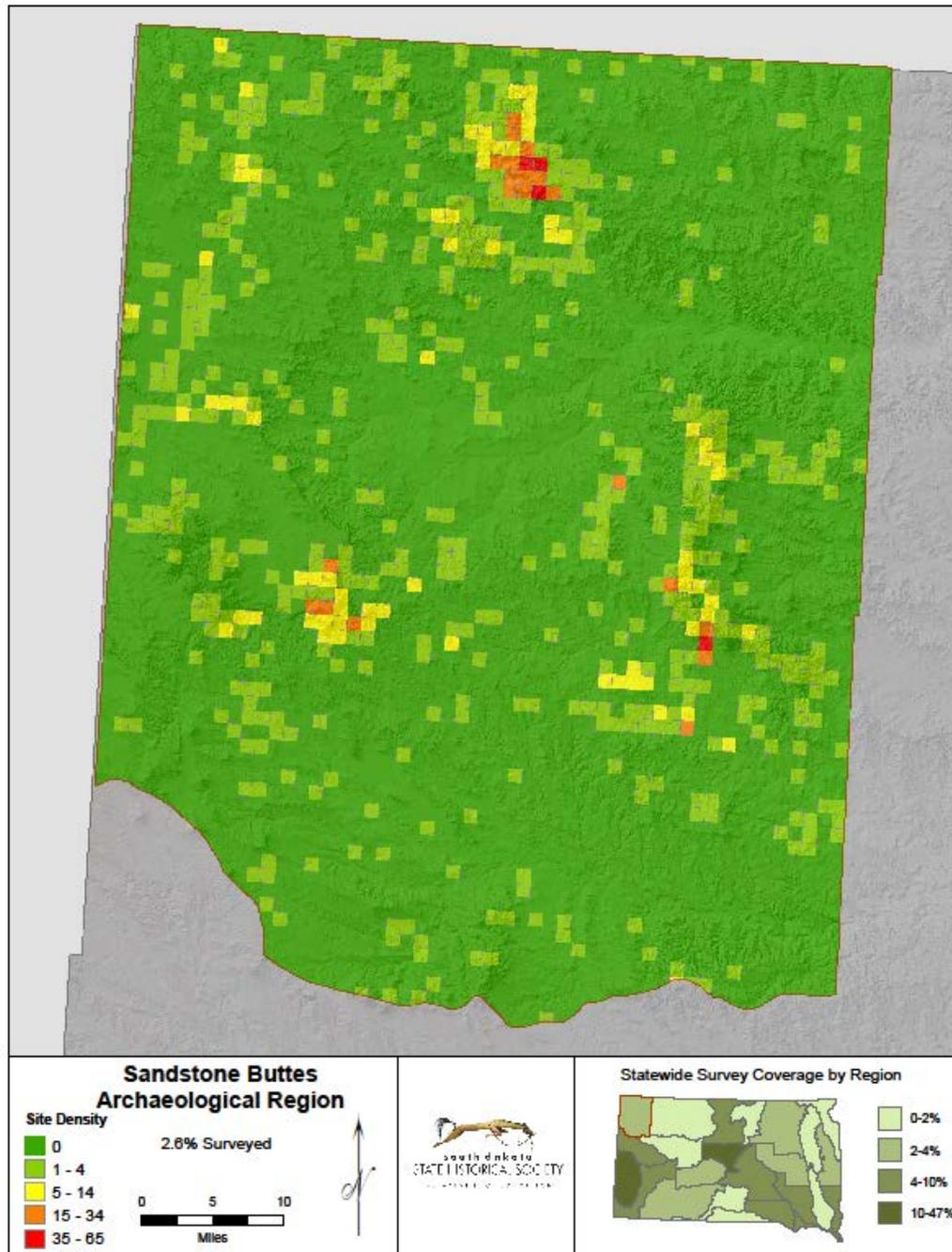


Figure 125. Density of known archaeological sites, Sandstone Butte Region.

Archaeological surveys of state lands in the region have taken place in recent years (Sundstrom and Fosha 2016; Archaeological Research Center site records). These have included test-excavation at a few sites. Other recent projects were related to a bridge replacements (Donohue 2006), an oil pipeline (Berg *et al.* 2009), a toxic waste cleanup at Riley Pass in the North Cave Hills (Fariello and Tyberg 2009; Larson *et al.* 2001; Tyberg 2008), wildlife habitat improvement (Littlefield 2012), and installation of electric utility lines (Buechler 2014, 2015).

## Historic Contexts

**Paleoindian.** The Sandstone Buttes region contains nine Paleoindian sites or isolated artifacts. Site 39HN163 in the North Cave Hills included a buried Paleoindian cultural layer with an associated Agate Basin projectile point fragment (Metcalf and Black 1985:176). A charcoal layer below the point was radiocarbon dated to 9160±280 BP (Metcalf and Black 1985:105). Another site with an Agate Basin point was discovered west of the Slim Buttes (Donohue 2006). Three sites, 39HN976, 39HN971, and 39HN1299, contained Cody Complex artifacts, and three other sites had unspecified Paleoindian projectile points (39HN373, 39HN928, and 39HN998). Artifacts from a site in Harding County included several Folsom and Goshen projectile points (Sellet 1999). A landowner reported finding a Folsom point at a site exposed in a cutbank on his land (39HN1357).

**Early Archaic.** The Sandstone Buttes region contains several buried Early Archaic sites. Site 39HN163 contained two Early Archaic cultural layers dating 6000 to 4500 BP. These levels included two large side-notched and two large stemmed or corner-notched points. Researchers tentatively identified the side-notched points as Bitterroot-Pahaska points (Metcalf and Black 1985). A cultural layer at the Summit Springs site (39HN571) dated to 5360±160 BP, near the end of the expected temporal range of Early Archaic (Fosha and Albanese 1998). Site 39HN221 had surface material that included two possible Early Archaic points, but these may have been redeposited from a nearby location. Early Archaic projectile points were found on the surface of 39HN591; however, test excavations failed to identify an Early Archaic component there (Sundstrom 2005a). Similar points were found at the Thomas Creek Village (39HN2). Ludlow Cave (39HN1) contained several large, side-notched dart points, but it is not clear whether these represent an early component or relics brought to the cave by later visitors. The excavator's notes on stratigraphy suggest that these early points were either mistakenly attached to the collection later or were relics brought in by later people (Sundstrom 1996b). An isolated Early Archaic projectile point base was recorded as 39HN955. The Reva site (39HN3) contained deep cultural layers with side-notched and stemmed projectile points well below Middle Archaic levels; however, little information is available for this site (Gant 1961). A bison kill site, the Licking Bison site (39HN570), dated at 6600 BP, contained Early Archaic Hawken points (Fosha 2001). A cache of one complete Hawken projectile point and nine bifaces, five modified flakes, and 43 flakes was found in the region (39HN1243). The bifaces conform to early to late stage biface production, with little to no cortex present. The elongated shape suggests they were produced and cached for future projectile point manufacture (Sundstrom and Fosha 2016).

**Middle Archaic.** Middle Archaic projectile points have been found at 16 different properties in the Sandstone Buttes region. Most are surface finds. Stratified Middle Archaic sites are few. The Lightning Spring (39HN204) site had several Middle Archaic components (Keyser and Davis 1984, 1985; Wettstaed *et al.* 1991). Another buried Middle Archaic occupation occurred at 39HN163 (Metcalf and Black 1985:132). At 39HN108 an extensive deposit of bison bone was identified as a kill site. Besides extensive bone deposits, the site contained flakes, scrapers, knives, and a Hanna or Pelican Lake projectile point. Other than surface inspection, no work has been done at this site.

**Late Archaic.** Late Archaic assemblages are known from about 30 sites in the Sandstone Buttes region, representing both the Pelican Lake and Besant complexes. They include tipi rings and a

bison bone bed, as well as small campsites similar to those of the Middle Archaic. Buried Late Archaic components have been reported at Lightning Spring (39HN204), 39HN152, 39HN157/158, 39HN163, 39HN483 (Keyser and Davis 1984, 1985; Wettstaed *et al.* 1991; Metcalf and Black 1985; Fosha 1994c). Ludlow Cave (39HN1) and the Reva Site (39HN3) contained possible Late Archaic projectile points (Sundstrom 1996b; Beckes and Keyser 1983:224). A large bison kill and processing site, 39HN176, contained a Late Archaic projectile point. Various levels of the bison bone bed were radiocarbon-dated to 1940, 1860, 1850, and 1670 BP. Except for a small test-excavation indicating the presence of three cultural levels, the site has received no formal study (Albanese 1999). Site 39HN931 contained a deeply buried cultural level, including a hearth. Bone from the hearth was dated at 3040 BP, the Middle Archaic-Late Archaic transition (Sundstrom and Fosha 2016).

***Late Prehistoric and Plains Village.*** The Late Prehistoric period is well represented in the project area, accounting for most of the known archaeological sites. More than 100 rock art sites in Harding County likely date to the Late Prehistoric (Sundstrom 2004a); another 26 sites contained artifacts typical of the period. Ludlow Cave (39HN1) and two nearby rock shelters, Pelham's Cave (39HN5) and 39HN24, contained evidence of Late Prehistoric and Plains Village use of the area. These sites contained ceramics from three different Middle Missouri complexes: Initial Middle Missouri and two Post-Contact Coalescent phases (L. Alex 1979a, 1979b; Wood 1971a; Wood and Downer 1977). These suggest proto-Mandan, proto-Hidatsa, and proto-Crow use of the area, respectively. A single steatite vessel from 39HN4A may indicate a Shoshone presence in the area during the Late Prehistoric. Small amounts of Middle Missouri Tradition pottery were also found at 39HN591 (North Divide), 39HN204 (Lightning Spring), and 39MD257 (Beckes and Keyser 1983:230; Keyser and Davis 1984, 1985; Wettstaed *et al.* 1991; Sundstrom 1996a). The Chokecherry Spring Site (39HN661) contained a hearth with layers dating to 1200±60 BP and 1280±50 BP. This feature contained three small, corner-notched projectile points and large pieces of bison bone (Sundstrom 2005a).

Other sites include campsites, eagle-trapping pits, tipi rings, and smaller stone circles and cairns that may be vision quest monuments. Rock art is also abundant, particularly in the North Cave Hills. High rates of erosion of the weak local sandstones and stylistic connections to larger regional rock art traditions place the Cave Hills rock art within the last 2000 years, and most within the last 500 years (Sundstrom 2004a; Keyser 1984, 1987). Offerings left at the Ludlow Cave site, beginning during the early Plains Village period, show that it has been a place of spiritual importance for many centuries (Sundstrom 1996b).

***Protohistoric.*** During the Late Prehistoric and Protohistoric periods, the ethnic makeup of the area underwent a series of changes. Between the early fifteenth and late eighteenth centuries, the area was used sequentially or concurrently by the Mandan, Hidatsa, Crow, Naishan Dene (Kiowa Apache), Eastern Shoshone, Arapaho, Cheyenne, Arikara, and Lakota. By the mid-nineteenth century, the Lakota dominated the area, but many other groups continued to use it. The Hidatsa and Mandan, in particular, visited the area seasonally from their Missouri River villages for hunting and eagle trapping. By this time, non-Indians had also begun moving through the Great Plains along the emigrant trails and were starting to encroach on lands claimed by the American Indian nations. Wars resulted from these episodes of ethnic expansion, some between American Indian nations, and others between alliances of tribes and US government forces.

Archaeological manifestations of the Protohistoric and early Historic periods in the area include four sites containing trade items along with American Indian-made artifacts and several rock art sites depicting horses and guns. The remains of an eagle-trapping lodge located in the Slim Buttes (39HN201) attests to Mandan/Hidatsa use of that area. Other Protohistoric sites in the region are scaffold, tree, and cliff burials.

**Historic.** The Sandstone Buttes region, like most of western South Dakota, shifted from Indian reservation to corporate cattle range to homesteads to family ranches. And like much of the West, it contains vast tracts of federal and state land with associated buildings and archaeological remains. The Battle of Slim Buttes was fought here (Greene 1990). After the Great Sioux Reservation was broken up, Indian families continued to visit the Slim Buttes area to hunt, gather plants and berries, visit grave sites, and conduct memorial ceremonies. Few archaeological sites can be linked to these reservation-era visits, but it is possible that some of the numerous stone circle camp sites date to this period. A few line camps remain from the period of corporate cattle ranching. The homestead era left behind numerous ruined houses, house depressions, and the like. Federal relief efforts during the interwar period led to the establishment of Civilian Conservation Corps camps in the region. The Civilian Conservation Corps left its mark not just at the camps, but in many public works, such as reservoirs, spring improvements, campgrounds, and road projects. The livestock industry is evident in the stone johnnies that dot the high buttes throughout this region, as well as in the remains of sheep camps, corrals, and ranch buildings.

**Summary.** The abundance of natural resources at these mesas, including wood, water, tool-making materials, game, and shelter, provided an ideal environment, drawing many people to these forested islands in the plains. Archaeological sites are abundant. At this writing, there are approximately 1125 known archaeological sites in the Sandstone Buttes region. These sites generally represent hunting and animal processing, temporary residence, tool-stone gathering and tool production, homesteading, stock raising, eagle trapping, and religious activities. Sites are categorized as rock art panels, artifact scatters, burials, bison or antelope bone beds, eagle-trapping pits, tool-stone procurement and tool manufacture, rock cairns, rock shelters, stone alignments, stone circles, vision quest locales, timber lodges, and various kinds of historic sites, including homesteads, shepherd camps, line camps, Civilian Conservation Corps camps, wells, and historic inscriptions.

The distribution of archaeological sites of the Prehistoric and Protohistoric periods is patterned according to local environment and topography. Stone circles (also known as tipi rings) and artifact scatters that represent campsites and food processing areas occur in valleys, on toe slopes, and on mesa tops. Bone beds from game drives occur in deep soils of draws, alluvial fans, and toe slopes. Vision quest markers, cairns, and eagle-trapping pits occur on the rimrocks, while rock art is common in the overhangs below the rim and on other more resistant sandstone outcroppings. These four site types are culturally sensitive sites (Deaver and Kooistra-Manning 1995). Localities with deeper soils, including alluvial fans, valley floodplains, mesa tops, and rock overhangs often contain buried, deeply stratified sites that have the greatest scientific potential for both archaeological studies and research on past environmental conditions. The entire post-glacial period is represented, but sites dating to the Late Archaic through to the Proto-Historic and Historic periods are by far the most common. This probably is because earlier sites have been lost to erosion.

## Sites by Period

*Paleoindian:* 39BU167, 39HN163, 39HN373, 39HN928 (Agate Basin?), 39HN931, 39HN971 (Cody), 39HN976 (Cody), 39HN998 (Angostura or Agate Basin), 39HN1357 (Folsom)

*Early Archaic:* 39HN1?, 39HN2?, 39HN3?, 39HN163, 39HN221, 39HN569, 39HN570 (Hawken), 39HN571, 39HN591, 39HN955, 39HN1419

*Middle Archaic:* 39HN3, 39HN40, 39HN101 (Hanna), 39HN108 (Hanna), 39HN149 (McKean), 39HN163 (McKean, Duncan), 39HN204 (McKean), 39HN430, 39HN500, 39HN593, 39HN684, 39HN841 (McKean), 39HN894, 39HN937, 39HN1137 (Oxbow), 39HN1207, 39HN1386 (Oxbow), 39HN1431

*Late Archaic:* 39HN3, 39HN132 (Pelican Lake?), 39HN149 (Pelican Lake), 39HN152, 39HN157/158, 39HN163, 39HN176, 39HN204, 39HN370, 39HN372, 39HN374 (Pelican Lake), 39HN394, 39HN442, 39HN470 (Besant), 39HN476 (Pelican Lake), 39HN477 (Pelican Lake), 39HN482, 39HN483, 39HN579, 39HN582, 39HN626, 39HN649 (Besant), 39HN688, 39HN699 (Pelican Lake), 39HN727 (Besant), 39HN770 (Pelican Lake), 39HN811, 39HN894, 39HN931, 39HN937, 39HN984 (Pelican Lake), 39HN1129 (Besant), 39HN1357, 39HN1382 (Besant)

*Late Prehistoric* (not including rock art): 39HN1 (Avonlea), 39HN163, 39HN381, 39HN452, 39HN474 (Avonlea), 39HN482, 39HN483, 39HN531, 39HN556, 39HN582, 39HN595 (Avonlea), 39HN661, 39HN670, 39HN676, 39HN677, 39HN474 (Avonlea), 39HN482, 39HN845, 39HN846, 39HN1202, 39HN1431 (Avonlea), 39HN1453

*Plains Village:* 39HN1, 39HN5, 39HN24, 39HN204, 39HN257, 39HN531, 39HN591, 39HN974

*Protohistoric* (not including rock art): 39HN1, 39HN454, 39HN556

*Historic:* 39BU519, 39HN483, 39HN506, 39HN505, 39HN510, 39HN513, 39HN527, 39HN534, 39HN535, 39HN536, 39HN538, 39HN539, 39HN540, 39HN541, 39HN542, 39HN543, 39HN544, 39HN545, 39HN557, 39HN565, 39HN566, 39HN567, 39HN572, 39HN584, 39HN597, 39HN697, 39HN710, 39HN723, 39HN724, 39HN725, 39HN726, 39HN757, 39HN782, 39HN810, 39HN813, 39HN818, 39HN821, 39HN822, 39HN839, 39HN848, 39HN849, 39HN855, 39HN857, 39HN860, 39HN882, 39HN892, 39HN900, 39HN903, 39HN911, 39HN924, 39HN932, 39HN934, 39HN935, 39HN936, 39HN938, 39HN939, 39HN940, 39HN941, 39HN942, 39HN943, 39HN944, 39HN945, 39HN946, 39HN947, 39HN948, 39HN949, 39HN952, 39HN953, 39HN954, 39HN960, 39HN963, 39HN982, 39HN985, 39HN1147, 39HN1150, 39HN1157, 39HN1158, 39HN1160, 39HN1131, 39HN1134, 39HN1146, 39HN1167, 39HN1175, 39HN1192, 39HN1193, 39HN1194, 39HN1203, 39HN1222, 39HN1375, 39HN1376, 39HN1396, 39HN1397, 39HN1391, 39HN1394, 39HN1396, 339HN1407, 39HN1412, 39HN1415, 39HN1416, 39HN1417, 39HN1418, 39HN2067, 39HN2295, 39HN2063, 39HN2155, 39HN2168, 39HN2293, 39HN2294

## Prehistoric and Historic Themes

**Rock Art.** The Sandstone Buttes region contains more than 100 rock art sites. The greatest concentration is in the North Cave Hills, but sites are scattered throughout the region on sandstone cliffs and in rock shelters. Most are incised or abraded. Typical motifs include shield-bearing warriors, biographic scenes of horse-raiding and warfare, ungulate tracks, vulvas, shields, animals, and geometric designs. A few petroglyphs had been painted or covered with ocher; however, only faint traces of this now remain. Petroglyphs in this region are assumed to date within the last 2000 years and to be associated with the Indian nations using the region in historic times and their immediate ancestors. Places containing petroglyphs in this region are sacred to some American Indians and should be treated accordingly. For more information about petroglyphs in the Sandstone Buttes regions see Keyser (1984, 1987) and Sundstrom (1993, 2004a).

*Rock Art Sites:* 39HN1, 39HN4, 39HN5, 39HN7, 39HN9, 39HN17, 39HN18, 39HN21, 39HN22, 39HN26, 39HN30, 39HN49, 39HN155, 39HN159, 39HN160, 39HN162, 39N165, 39HN167, 39HN168, 39HN171, 39HN174, 39HN177, 39HN198, 39HN199, 39HN205, 39HN206, 39HN207, 39HN208, 39HN209, 39HN210, 39HN213, 39HN217, 39HN218, 39HN219, 39HN227, 39HN228, 39HN232, 39HN234, 39HN484, 39HN485, 39HN486, 39HN487, 39HN513, 39HN515, 39HN516, 39HN663, 39HN664, 39HN682, 39HN685, 39HN698, 39HN705, 39HN711, 39HN744, 39HN745, 39HN746, 39HN747, 39HN748, 39HN755, 39HN756, 39HN776, 39HN777, 39HN778, 39HN779, 39HN790, 39HN791, 39HN792, 39HN793, 39HN794, 39HN796, 39HN797, 39HN798, 39HN799, 39HN800, 39HN802, 39HN815, 39HN816, 39HN826, 39HN827, 39HN828, 39HN829, 39HN832, 39HN833, 39HN838, 39HN840, 39HN842, 39HN843, 39HN844, 39HN846, 39HN893, 39HN896, 39HN897, 39HN898, 39HN901, 39HN902, 39HN904, 39HN905, 39HN906, 39HN907, 39HN908, 39HN912, 39HN913, 39HN914, 39HN915, 39HN916, 39HN957, 39HN961, 39HN1375?

**Stone circles.** Stone circle sites are abundant in the Sandstone Buttes region. These range in size from one circle to 16. Stone circle sites that contain time-diagnostic artifacts date to the Protohistoric, Late Prehistoric, and Late Archaic periods. Site 39HN62 contained a stone circle on the surface and Archaic projectile points that appeared to be eroding from a cutbank. These included a Middle Archaic Hanna point and a corner-notched point identified as Late Archaic. Until stone circle sites undergo excavation, their age range will remain uncertain. While most stone circle sites appear to represent tipi camps, based on their size, location, features, and artifacts, ethnographic evidence suggests that some were sacred places (Sundstrom 2003a).

*Stone circle sites:* 39BU11, 39BU25, 39BU28, 39BU29, 39BU35, 39BU39, 39BU159, 39BU160, 39BU164, 39BU172, 39BU173, 39BU174, 39BU175, 39BU176, 39BU177, 39BU178, 39BU179, 39BU180, 39BU374, 39HN4, 39HN12, 39HN13, 39HN16, 39HN40, 39HN41, 39HN48, 39HN63, 39HN68, 39HN69, 39HN74, 39HN84, 39HN102, 39HN111, 39HN122, 39HN123, 39HN124, 39HN130, 39HN151, 39HN152, 39HN183, 39HN186, 39HN187, 39HN188, 39HN189, 39HN192, 39HN193, 39HN195, 39HN196, 39HN197, 39HN203, 39HN211, 39HN216, 39HN223, 39HN224, 39HN225, 39HN230, 39HN231, 39HN248, 39HN256, 39HN258, 39HN259, 39HN261, 39HN262, 39HN263, 39HN288, 39HN291, 39HN346, 39HN353, 39HN357, 39HN438, 39HN450, 39HN351, 39HN462, 39HN448, 39HN488, 39HN519, 39HN521, 39HN528, 39HN531, 39HN532, 39HN554, 39HN556,

39HN560, 39HN578, 39HN581, 39HN630, 39HN642, 39HN652, 39HN655, 39HN656, 39HN657, 39HN667, 39HN671, 39HN684, 39HN701, 39HN709, 39HN721, 39HN722, 39HN743, 39HN786, 39HN788, 39HN789, 39HN795, 39HN804, 39HN836, 39HN837, 39HN850, 39HN851, 39HN870, 39HN871, 39HN895, 39HN899, 39HN917, 39HN919, 39HN920, 39HN925, 39HN959, 39HN962, 39HN968, 39HN970, 39HN975, 39HN989, 39HN993, 39HN1000, 39HN1147, 39HN1450

***Ranching.*** The Sandstone Buttes region is of special interest to archaeological studies of ranching, including the transition from the open range days of large, multinational cattle companies to smaller, locally based outfits, and from open range to the homestead era. The region included vast, unfenced ranges on which Texas cattle were fattened for the eastern markets (Lee and Williams 1964; Lee 2005). Such corporate ranching soon gave way to family owned ranches with more restricted ranges. These smaller ranches raised cattle, sheep, or both. Homesteading became important in the early years of the twentieth century. The area was especially important in the state's sheep industry (Lee 2005:282–285; Gilfillan 1929). The arid landscape and severe climate were hostile to farming, however, and family ranchers gradually expanded their holdings and prosperity by buying homesteads outright or from the county for back taxes. At the same time, large tracts of land were designated federal or state game and forest preserves. This rapid progression through three distinct economic systems is well illustrated by archaeological sites in the region, but these have not yet been tapped for the historic information they contain. A unique site type in this region is the “stone johnny,” a high, cylindrical cairn that sheep-herders created by carefully stacking sandstone slabs (South Dakota Writers Project 1938:219). Recorded stone johnny sites are: 39HN6, 39HN535, and 39HN757; these and many others occur on high buttes and mesas throughout the region.

Sites related to ranching and other post-contact agriculture: 39BU216 (farmstead), 39PE311 (farmstead), 39HN45 (farmstead), 39HN103 (cowboys' line camp), 39HN45 (farmstead), 39HN106 (sheep-herder camp), 39HN156 (sheep-herder camp), 39HN264 (school), 39HN274 (cowboys' line camp), 39HN284 (farmstead and corral), 39HN320 (farmstead), 39HN447 (farmstead), 39HN448 (grave associated with line camp for the JB Horse Ranch), 39HN475 (sheep-herder camp), 39HN506 (Ellis homestead), 39HN725 (homestead), 39HN725 (homestead), 39HN813 (homestead), 39HN848 and 39HN849 (stock tanks), 39HN860 (trough), 39HN892 (farmstead), 39HN954 (farmstead), 39HN1147 (farmstead).

***Civilian Conservation Corps.*** The Civilian Conservation Corps was active in constructing picnic grounds, campgrounds, erosion-control structures, dams, and culverts in the Sandstone Buttes region. Many Civilian Conservation Corps structures are preserved in this region. Civilian Conservation Corps Camp DF-19, Company 2747, was established at Camp Crook on July 29, 1934, beginning as a tent city. The company was charged with construction of 16 reservoirs, development of 125 springs, fencing 75 miles of rangeland, completing 42 miles of telephone lines, paving 16 miles of roads, marking 260 miles of Forest Service boundaries, exterminating prairie dog towns, building six recreational areas, and thinning tracts of timber on Forest Service land. Company members came from throughout South Dakota (Alleger ca. 1934).

*Civilian Conservation Corps-related sites:* 39HN782, 39HN839, 39HN882

***Sacred Sites, Traditional-Use Sites, and, Burials.*** Ludlow Cave was historically an important shrine; its use extends back at least a millennium (Beckwith 1938:304; Bowers 1950:171–172, 1963:127; G. Custer 1874; H. Harrington 1874; Krause and Olson 1974: 155–162; Libby 1998:163–164; Ludlow 1875:10; Will 1924:300; Sundstrom 1996b). Among Indian nations visiting this site were Mandan, Hidatsa, Arikara, Cheyenne, and Lakota. Crow and Arapaho groups probably visited the cave, as well, although direct archaeological and ethnographic evidence for this is lacking. The many rock art sites in the region were and are considered sacred places by the same groups. Sites related to eagle trapping are abundant in this region and include eagle-trapping pits, lodges built by eagle-trapping parties, and rock art panels that appear to have been made as part of eagle-trapping rituals (Sundstrom 2004a; Will 1909:257). All of these can be considered sacred places, as eagle-trapping was a highly ritualized activity. Ludlow Cave was associated with Spirit Buffalo living deep below the ground (cf. Beckwith 1939:204; Bowers 1963:127), but also with a spirit being representing the north and winter (Carroll and Frost 1976:17–20) and another associated with the women’s arts (Libby 1998:163–194; Sundstrom 2004a).

Vision quest features are also found in the region in the form of round or oval rock enclosures just large enough for one person to stand or sit in. These are most frequently found on high mesa- or butte-tops. Examples include 39HN212 and 39HN215. Some rock art sites also were used for vision quests, as indicated by the images they include (Sundstrom 2004a). Ethnographic evidence indicates that supplicants sometimes constructed cairns at the location of a successful vision quest; however, archaeologists cannot readily identify these today.

Although interments are rarely, if ever, discovered in the Sandstone Buttes region, several are known from historic accounts or indirect evidence. The South Cave Hills contain a possible rock ledge burial, consisting only of beads found below a collapsed rock outcrop. In the early 1900s, human skulls were found at McKenzie Butte and the south end of the Slim Buttes; their ages and cultural affiliations are not known. Early road construction reportedly unearthed some skeletons near Camp Crook. Historic accounts refer to tree burials in the northern and southern portions of the Slim Buttes. Other historic American Indian burials, including interments and box burials covered with rocks, are reported from private ranches in the area. The site type most commonly identified as a possible burial site in this region is a scatter of beads. These are all that remain of contact-era scaffold or rock burials. Historic accounts confirm that the wooded draws of the Slim Buttes, Cave Hills, and other mesas were frequently used for tree burials; however, nothing remains today to indicate where these burials were located.

The Slim Buttes Battle area is also considered a sacred place by some Lakota people because so many of their relatives died there. According to local residents, Lakota women visiting the area used to conduct a memorial ceremony at the site of the battle.

Lakota families from the Standing Rock and Cheyenne River Indian Reservations continued to visit the Sandstone Buttes region frequently during the early reservation period through at least the 1930s. They gathered berries, hunted deer, visited places with historic or religious significance, and participated in rodeos. Lakota groups also used to spend the winter at the Doc Hodge Ranch in the Slim Buttes, where they built a log building for a meeting place, arranging their tents or tipis in the meadow around it (*Nation’s Center News* undated clipping in files of Buffalo, SD, Museum).

A feature west of the Cave Hills appears on early maps as Pomme Blanche Hills, suggesting that this was an important place for gathering prairie turnip. The Slim Buttes country was an important bison hunting ground (Boller 1972:266; Vestal 1934:234; Bordeaux 1929:86; McGinnis 1990:73). Other places for which native names are recorded include Big Rough Butte (perhaps modern Bleak Butte), Butte with a Chimney on Top (perhaps modern Chimney Butte), Crow Buttes, Dense Pine Butte (perhaps the Short Pine Hills), Battle Creek, and Captive Butte (Beckwith 1938:304; Ehrensperger 1941; Vestal 1934:9). Crow Buttes and Battle Creek were the sites of decisive battles between Lakota and Crow forces. Captive Butte was so named because a woman captive escaped and the people later saw her sitting conspicuously on top of the butte.

For more information on places of importance to Native Americans, the reader is referred to the Tribal Historic Preservation Offices or cultural offices of the Lakota tribes, especially the Standing Rock and Cheyenne River Sioux Tribes, the Three Affiliated Tribes, and the Northern Cheyenne Tribe.

Properties of traditional significance for descendants of historic-era settlers in the area include the grave of Mrs. Otis Tye in the northern Slim Buttes. She was the young wife of an employee of the JB Horse Ranch. She froze to death in 1888. Her husband was working at the main ranch, and she became lost in a blizzard while trying to attend to some horses pastured near the line camp where she and her husband lived. The draw containing her grave and the remains of the line-camp was used as a picnic area from around 1910–1940. It took the name Red Cross Draw from picnics and dances held during World War I to raise funds for that organization. A nearby ranch was built and owned by Doctor James E. Hodge, locally known as Doc Hodge. Hodge was locally renowned for his skill at herbal medicine, much of which he learned from Lakotas from Cheyenne River and Standing Rock reservations. Hodge welcomed his Lakota friends to visit his Slim Buttes ranch. They built a log meeting house upstream from the ranch house and camped around it in tents or tipis. Another place prominent in local legend is JB Rock, a sandstone boulder on top of JB Hill near the Slim Buttes. US Cavalry units camped below the hill during the Ghost Dance scare of 1890. They used the hilltop as a lookout point, and some of the soldiers carved their names into the rock.

## **Archaeological Potential**

Research in the region has focused on areas in or near the Sioux Ranger District of the Custer Gallatin National Forest. This bias is a result of research objectives of the Forest Service as well as the concentration of energy development projects near the forest units, especially near the North Cave Hills unit in north central Harding County. Biases also exist because of the difference in federal and state laws concerning energy development. Basic inventory to expand the resource base is needed, including a focus on examining deeply stratified sites, to develop local cultural sequences. Stratified sites such as Nahani (39HN176), Lightning Spring (39HN204), Licking Bison (39HN570), Marty-Nelson (39HN598), and Ludlow Cave (39HN1) can provide data on cultural change through time.

The region has a high potential for containing significant archaeological and historic resources. A draft National Register nomination includes most of the North Cave Hills as a historically significant district (Sundstrom 2001). A preliminary assessment of the Slim Buttes notes that erosion appears to have removed much of the Paleoindian and Early Archaic record; however,

some early sites are well preserved in stream terrace or alluvial fan deposits (Sundstrom 1996a). Some heavily eroded areas in the Slim Buttes reveal buried soils containing archaeological deposits; the ages of these are currently unknown.

***Prehistoric Archaeology.*** The Sandstone Buttes region contains well stratified sites from the Early and Middle Archaic periods. These are important to studies of subsistence, settlement, and social organization. For example, sites in this region were central to James Keyser's Middle Archaic local populations studies (Keyser 1985). The area contains many stone circle sites, including many large sites representing summer encampments and smaller sites that may have been winter camps. The Cave Hills contains a stone circle with a double- or triple-course of stones, suggesting a different type of structure, perhaps a pole and woven brush shelter (39HN528). Smaller circular or oval stone enclosures probably were vision quest stations. The region has many Late Archaic and Late Prehistoric sites, as well as few Plains Village components. It will be important to defining Avonlea versus Plains Village projectile point styles, as these are very similar and both occur in the area. Plains Village components at a few sites are important in tracing the extent and duration of use of this area by people from the Missouri River villages. A large, stratified Late Archaic site (39HN176) in the Cave Hills contains a bison bone bed, a meat and hide processing area, and a campsite. This site has potential for reconstructing the entire process of bison procurement and use. A test excavation there yielded four radiocarbon dates ranging from 1940 to 1670 BP.

***Raw Material for Stone Tools.*** The sandstone buttes region contains large outcrops of Tongue River silicified siltstone, an important source of rock for chipped stone tool production. An unusual glassy green chert outcrops in the region, as well. A recently recorded outcrop of porcellanite was used as a quarry for tool-stone (39HN1043). This rock is otherwise limited to the Powder River Basin and eastern Montana; thus, its occurrence in the Slim Buttes has important implications for studies of trade and migration.

***Rock Art.*** The North Cave Hills District has one of the largest concentrations of rock art in the northern Great Plains. This has been important in developing chronologies and understanding the symbolism of Plains rock art (Sundstrom 2004a; Keyser and Klassen 2001). Because sites with ancient markings are considered sacred places, tribal consultations are necessary prior to any activities that affect them.

***Trails.*** A trail probably has run from the Missouri River to the Cave Hills area for centuries, if not millennia. The Bismarck-Deadwood stage route followed an old trail that brought Missouri River villages west to hunt bison and catch eagles and western Indian nations, such as the Crow and Cheyenne, to the Missouri River villages for trade. For an 1878 map of this trail drawn by the Cheyenne scout John Crazy Mule, see Fredlund and Sundstrom (1999). The archaeological remains, if any, associated with the South Dakota portion of this trail remain to be explored.

***Historic Archaeology.*** The Slim Buttes Battle is a noted event in the western Indian Wars (Greene 1990). The battlefield has yielded numerous artifacts, but professional archaeologists have not yet studied it. The Sandstone Buttes region is also important to studies of big cattle, homesteading, and the growth of family-based ranching. The ruins of line camps, corrals, homestead shacks, and related structures such as rural schools, cemeteries, and churches dot the landscape throughout the Sandstone Buttes region. A sandstone boulder in the South Cave Hills is

inscribed with the names of early surveyors and settlers (39HN527). Old irrigation ditches are present near some of the rivers. Various Civilian Conservation Corps-era structures, such as cattle and sheep barriers, culverts, and campgrounds, in the region are important links to that era of American history.

**Geomorphology.** The geomorphology of the Sandstone Buttes region has received little study, although it lends itself well to such research. In the Slim Buttes, the relatively unconsolidated White River Group bedrock has been extensively reworked into alluvial fans, terraces, and slump blocks. The Slim Buttes area contains some very deep paleosols of fairly recent origin (Sundstrom 1996a). Older sediments occur as remnant alluvial and colluvial fans, both high and low in the landscape. Without more study and mapping of these remnant surfaces, it is very difficult to predict the locations of older (Paleoindian through Middle Archaic) archaeological sites. In the Noirth and South Cave Hills, bedrock is sandstone and shale, but the area still undergoes rapid and continual landscape change. The sandstone caprock is undercut as underlying shales erode. This forms overhangs and rock shelters that eventually collapse. The loose, sandy sediments that accumulate below the sandstone cliffs are susceptible to gullying and large-scale slumping. Terraces are present along the rivers, but it is not known at present if any of these are older than a few centuries. Some deeply stratified sites occur in valleys and on slopes. It is certainly possible that ancient archaeological deposits lie under rubble piles from rock shelter collapse. Old sites also occur on the mesa tops, including some buried under wind-borne deposits that accumulate on the mesas. At least one old dune field is present between Reva and Buffalo, but this has not been studied. The Sandstone Butte region is ripe for geomorphological exploration. For now, it is recommended that any cultural resource management projects and policies acknowledge that very little is known about site formation, preservation, and loss in this area. It is not reasonable at this time to make assumptions concerning likely site locations or distributions of sites of any particular age.

## **Management Considerations**

The Sandstone Buttes region, although sparsely populated today, contains many important sites. Cattle ranching is the mainstay of the local economy. Its impact on archaeological sites and traditional cultural properties is moderate. Of more concern are mineral extraction activities. The area contains uranium, oil, natural gas, and coal. Mining, especially on non-federal lands, is a significant threat to the integrity of sites in this region. Federal lands in the Sandstone Buttes region have not been completely surveyed as of this writing, and very few sites have been formally evaluated for their historic significance. The State of South Dakota owns large tracts of land in this region; however, only about 10 per cent of this land has been surveyed or otherwise examined for the presence of archaeological sites.

## **Sites Listed in the National Register of Historic Places**

39HN1, 39HN5, 39HN17, 39HN18, 39HN21, 39HN22, 39HN26, 39HN30, 39HN50, 39HN53, 39HN54, 39HN121, 39HN150, 39HN155, 39HN159, 39HN160, 39HN162, 39HN165, 39HN167, 39HN168, 39HN171, 39HN174, 39HN177, 39HN198, 39HN199, 39HN204, 39HN205, 39HN207, 39HN208, 39HN209, 39HN210, 39HN213, 39HN217, 39HN218, 39HN219, 39HN227, 39HN228, 39HN232, 39HN234, 39HN484, 39HN485, 39HN486, 39HN487.

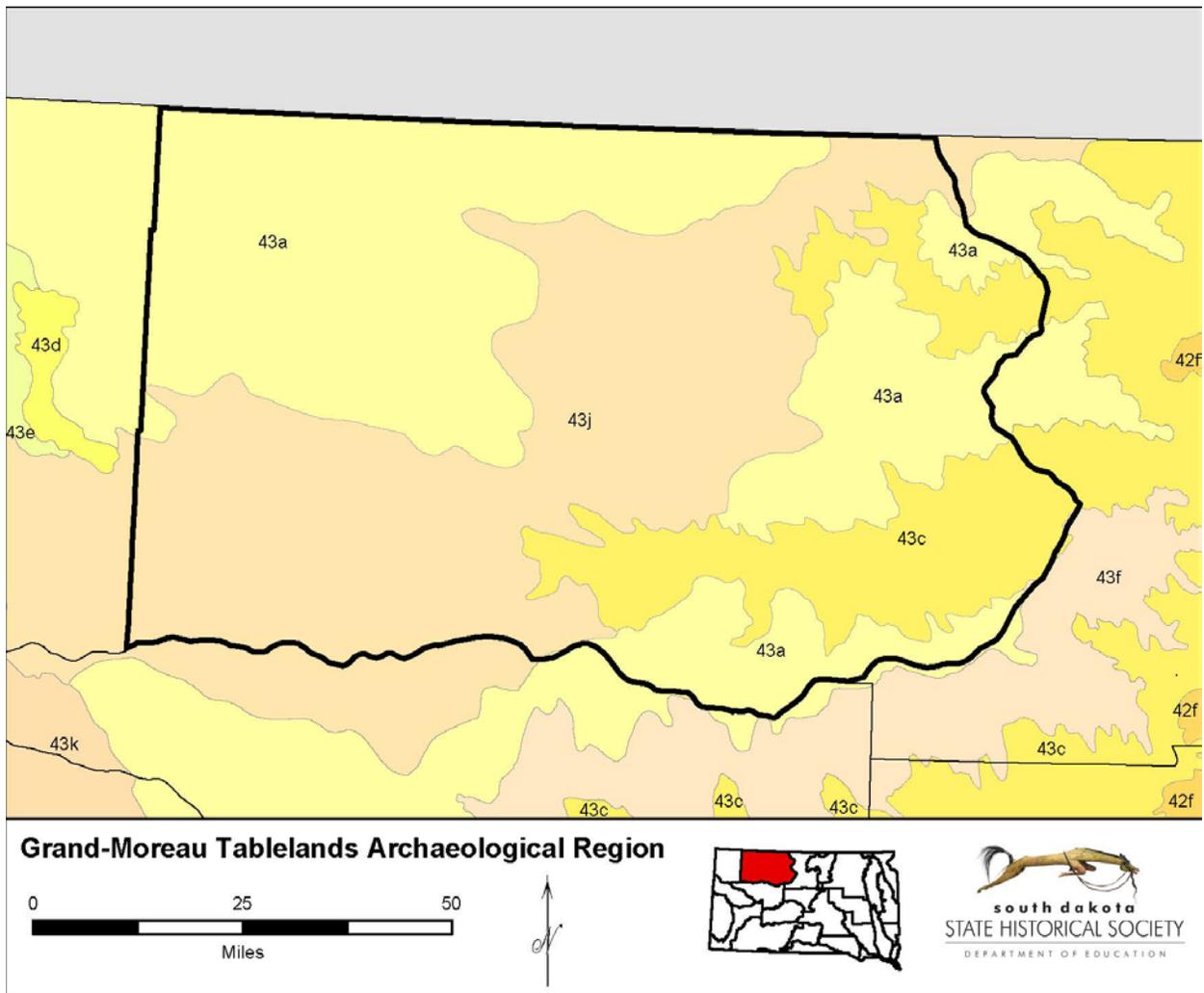
## Region 2: Grand-Moreau Tablelands

### Setting

The Grand-Moreau Tablelands Region consists of the central Grand and Moreau River drainage basins encompassing all of Perkins County, the western two-thirds of Corson and Dewey Counties, and northern Ziebach County. This area is part of the Cretaceous Tablelands Section of the Missouri Plateau of the Great Plains (Rothrock 1943). The area includes rolling grasslands broken by occasional high isolated buttes and by the broad, shallow valleys of the Grand and Moreau rivers. Streams drain to the east or southeast joining the Missouri River just east of the region. Mixed grasses dominate the area, with stands of deciduous trees along some stream courses.



*Figure 126. Grand-Moreau Tablelands landscape (USDA Forest Service photo).*



*Figure 127. Ecoregions of the Grand-Moreau Tablelands archaeological region.*

*43: Northwestern Great Plains*

*43a: Missouri Plateau, unglaciated moderately dissected level to rolling plains with isolated sandstone buttes.*

*43c: River Breaks, unglaciated, highly dissected hills and uplands bordering major rivers and associated alluvial plains.*

*43j: Moreau Prairie, unglaciated, level to rolling plains with occasional buttes, badland formations, and salt pans.*

## Previous Archaeological Investigations

Little archaeological research has been undertaken in the Grand-Moreau Tablelands Region relative to its large size. The first professional fieldwork in the area was conducted by the Smithsonian Institution-River Basin Surveys in areas of anticipated reservoir construction. In 1946, a field party under Waldo Wedel conducted a brief survey of the Shadehill Reservoir in Perkins County (Cooper 1947b). Wedel's crew recorded six sites: two chipped stone artifact scatters, two rock cairns, and two depressions resembling earth lodge remains. Local residents had already discovered a large deposit of bison bone suggesting a possible bison jump or kill site. The bison bone bed was described in a newspaper account as "a huge mass of bones, hides, horns, and even stomach contents of bison" (*Custer County Chronicle*, undated clipping ca. 1940). According to this account, the bone bed was 100 feet in length and 6–12 feet thick, with another bone bed appearing about four feet below that. This bone bed was mined during the 1930s, and what remained of it was destroyed by the construction of Shadehill Reservoir. The 1946 crew also recorded two paleontological localities. None of the sites were tested. More survey in the Shadehill Reservoir area followed the next year (Cooper 1947b). In 1949, Richard P. Wheeler led a similar Smithsonian Institution-River Basin Surveys investigation at the proposed Bixby Reservoir in Perkins County. He reported two artifact scatters (Wheeler 1949a).

Later work in the region was similarly limited mostly to surveys tied to construction projects, such as bridge replacements, gravel pits, utility work, range improvements, and reservation housing developments. Among the larger projects have been surveys for telephone cable and water lines (Buechler 1997a, 1998a, 2002a, 2003a, 2003b; Gillespie and Holen 2000; Haakenson 2003a, 2003b; Hackbarth 1977; Kulvesky 1995; Stine 1995; Lazio 1979a, 1979b; Pyzarsky 2002), highway realignments (Sundstrom 1982b; Rood 1983a, 1983b; Kurtz 1988a, 1988b; Estep-Cumins and Fosha 1990; Fosha and Estep-Cumins 1990; Estep 1993a; Fosha 1994b; Vega *et al.* 1995; Williams 1996; Byrne 1997b), land exchanges (Beckes 1981; Kurtz 1994, 1997a; Morrison 2002), range management (Kurtz 1997b; Pool 1991), and mineral exploration projects (Haug 1978a).

Few excavation projects have taken place in the Grand-Moreau Tablelands. A survey of Bureau of Reclamation lands around Shadehill Reservoir led to test excavation of several prehistoric sites (Kordecki *et al.* 1994; Jackson *et al.* 2006). A Custer Gallatin National Forest crew test excavated several sites in Perkins County. One of these sites, 39PE184, contained a Late Prehistoric projectile point, a shallow basin hearth, and abundant flaking debris and animal bone fragments (Floodman *et al.* 1994). Shovel probes revealed stratified buried deposits at 39PE266; four other sites were limited to the surface (Haakenson 2003b). Test excavations along a highway right-of-way in northern Meade County revealed the 19 sites there to be shallow or deflated and of limited historic value (Vega *et al.* 1995). Large-scale excavation projects in the region gathered information from three sites (39DW165, 39DW347, 39ZB31) in advance of highway projects (Hanenberger 2000, 2005).

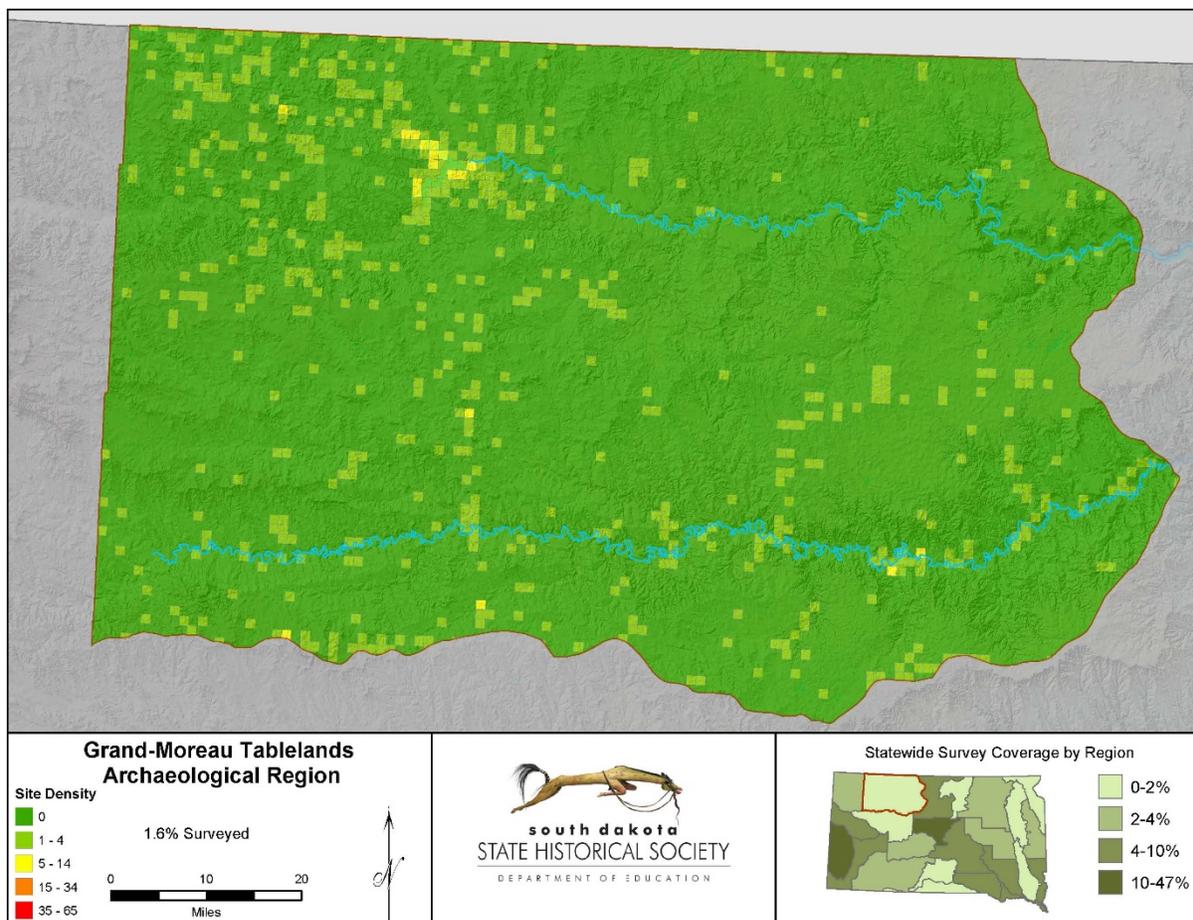


Figure 128. Density of known archaeological sites, Grand-Moreau Tablelands.

## Historic Contexts

**Paleoindian.** The Brams site (39ZB31) had an early component represented by a single, buried metate (Hanenberger 2005). The artifact was recovered in context with a soil dating to the Paleoindian period; however, it could date slightly later, that is, to the Early Archaic period. Surface finds from three other sites include Agate Basin, Alberta, and Scottsbluff-Cody projectile points. The middle portion of a Paleoindian projectile point was found on the surface of the Meland Site, 39DW165, but the site lacked a definable Paleoindian cultural layer (Hanenberger 2005).

**Early Archaic.** Six sites in the Grand-Moreau Tablelands region are reported to contain Early Archaic artifacts. Three of these were isolated finds of side-notched projectile points (Hawken or Bitterroot type). Two other Early Archaic sites in the region had buried deposits, as well as extensive surface artifact scatters; however, these lacked good vertical deposition. Site 39PE1 contained two stone circles and a large scatter of chipped stone artifacts along the edge of a terrace overlooking the Grand River (Jackson *et al.* 2006). Site 39PE161 similarly had two stone circles and many chipped stone artifacts on its surface. Limited test excavations revealed that the site deposits had been disturbed by plowing and erosion (Jackson *et al.* 2006). The excavations extended only to 20 cm below surface; therefore, if deep deposits exist there, they were not

discovered. The final Early Archaic site, 39PE145, is a large scatter of artifacts and a prehistoric cairn. It has not been test excavated. For now, archaeologists have too little information to outline Early Archaic use of the region.

***Middle Archaic.*** Four sites in the region contain Middle Archaic components. A McKean projectile point was found on the surface of 39CO158, an artifact scatter with a buried component. At 39PE212, a scatter of artifacts on the surface included a McKean point, a drill, a core, and about 20 flakes. Neither of these was test excavated. Site 39MD405 had a Hanna projectile point on the surface with some chipping debris and a Late Archaic projectile point. Two test excavation units failed to yield significant buried deposits. The Brams site (39ZB31) contained a Duncan-Hanna projectile point in a mixed deposit.

***Late Archaic/Woodland.*** A Yonkee projectile point from a deeply buried component at 39PE69 indicates use of the area during the Middle to Late Archaic transition. The Eagle Point site (39DW189) is recorded as an occupation and bison kill site with Pelican Lake and Avonlea complex artifacts. It contained fire-cracked rock, hearths, bison bone, and complete bison skeletons. This suggests that bison were killed, perhaps in a game drive, and their meat processed here. Several other Pelican Lake sites in the region were recorded as artifact scatters. Of these 39DW257 was tested and found to lack subsurface deposits or surface artifacts other than one projectile point; 39PE119 and 39PE199 also contained only surface material. Site 39MD400 was heavily eroded, and test excavations there confirmed a lack of buried deposits. Although 39MD405 contained both Middle and Late Archaic projectile points, it also was limited to the surface. At 39PE85, archaeologists observed 75 chipped stone artifacts, including a Pelican Lake projectile point fragment and some cores. This site was not test excavated. Two possible cairns and approximately 150 chipped stone artifacts were found on the surface of 39PE171; however, a portion of the site was test excavated and did not contain significant buried deposits.

Woodland Besant/Sonota complex sites are fairly common in the region. Six sites in the region had Besant projectile points on the surface. Sites, 39MD391, 39MD393 and 39PE20 were test excavated and found to lack buried deposits. A small artifact scatter, 39PE277, is deflated and lacks potential for intact deposits. The remaining two sites, 39PE159 and 39PE112 are large surface artifact scatters. Neither has been test excavated. Test excavations at 39PE147 revealed a significant buried deposit of Middle Woodland age and affiliation. It was identified as a Sonota complex site based on its age and presence of distinctive ceramics. It contains the remains of a large hearth feature, possibly an earth oven, radiocarbon dated at 1700–1520 BP, and a dense scatter of ceramics and chipped stone artifacts (Jackson *et al.* 2006). The site lies on a series of terraces overlooking the northern fork of the Grand River.

The Brams site (39ZB31) had a considerable Late Archaic component with Pelican Lake projectile points; however, the Late Archaic cultural deposit is shallow and mixed with Late Prehistoric materials. This is a periodically reused campsite used by small groups engaged in hunting and plant food gathering and processing. The Meland site (39DW165) has a similar cultural layer with a mix of Late Archaic and Late Prehistoric materials. Its primary function was reducing local tool-stone cobbles to cores and rough bifaces for finishing elsewhere (Hananberger 2005).

**Late Prehistoric.** Of ten sites with Late Prehistoric components, four are isolated projectile points and another contained only a projectile point and one piece of fire-cracked rock. At 39PE88, an Archaic and a Late Prehistoric projectile point base were found with a few flakes at the site of a historic homestead. The site has not been excavated, so it is not clear whether an intact prehistoric site lies below the historic component. Another site with both historic and Late Prehistoric artifacts is 39PE160. It contained chipping debris, bone fragments, and a Late Prehistoric arrow point, along with a few fragments of glass and ceramics. The site has not been test excavated. Site 39PE89 had a Late Prehistoric projectile point in a scatter of about 80 artifacts, but lacked potential for buried deposits.

Three sparse scatters of chipping debris occur at 39PE69 with at least two buried cultural strata visible in a cutbank there. The site lies on a terrace overlooking the North Fork of the Grand River. Despite these promising initial observations, the archaeologists who evaluated the site's significance deemed it of little historic value because the artifact density was low (Jackson *et al.* 2006). Test units at 39PE184 encountered buried deposits including a probable hearth with burned soil, bone fragments, and chipping debris. Another unit yielded a Late Prehistoric arrow point. This site has not been studied further, but as the only site thus far found with an apparently unmixed Late Prehistoric component, it will be pivotal in outlining human use of the region during that period. Late Prehistoric diagnostics were found at the Brams and Meland sites, but no features or cultural levels could be assigned to these components (Hananberger 2005).

**Plains Village.** Eleven sites in the Grand-Moreau Tablelands region contain Plains Village ceramics. These sites are otherwise similar to other Late Prehistoric sites. With the exception of 39DW347, White Horse Village, they lack earth lodge depressions, cache pits, and other village site features visible on the surface.

The White Horse site (39DW347) was initially recorded as a large, dense scatter of historic artifacts and prehistoric stone tools, chipping debris, bone, and fire-cracked rock. It is situated on a levee of a meander scar of the Moreau River, 40 miles from its confluence with the Missouri River (Hananberger 2000). Archaeologists from Archaeological Research Center excavated the site in 2000; the analysis and report are pending. Excavations uncovered more than 100 features and additional artifacts, including pottery. The site contained historic and Extended Middle Missouri variant occupations. The Extended Middle Missouri occupation consists of a single rectangular house structure with both interior and exterior features, including hearths, burned areas, shallow pits, cache pits, post molds and posts. The ceramics and house type are consistent with an Extended Middle Missouri affiliation.

A large artifact scatter on Firesteel Creek was designated Red Dog Village, 39DW353. Six hearth features and 12 possible house features indicated an occupation site. Several hundred chipped stone artifacts were found on the surface of the site. Limited subsurface probes indicate intact buried deposits, but no additional excavation has taken place there. Swan Creek Village, 39DW181, is a large, multiple component site with flakes, chipped stone tools, pottery, fire-cracked rock, charcoal, and bone fragments on the surface. Chipped stone tools observed on the surface included stone knives, a chopper, a biface, end scrapers, and projectile points. Surface observations suggest shallow, but intact, buried deposits; however, no test excavations have been done (Pysarsky 2001).

Site 39ZB31 originally included an area now considered a separate site, 39ZB35. In 1990, 39ZB31 was test excavated in advance of a highway realignment project (Donohue 1991). This large site was found to contain a Plains Village component at or near surface, with older cultural layers from 7 to 22 cm below surface. The Plains Village component contained probable Extended Coalescent materials in the form of 22 sherds that probably all came from the same vessel (Hananberger 2005).

**Protohistoric.** Site 39PE33 is a stone circle site that contained some metal artifacts, indicating a post-contact date for the site. Site 39PE148 is a scatter of chipping debris and one blue glass bead. A marker with the word “Dutch” at this site perhaps marks a dog burial. An extensive artifact scatter at 39PE215 included chipping debris, pottery, and a spent Henry repeating rifle cartridge dated 1860–1866. Although the site was not test excavated, a hearth eroding from a bank suggests the presence of intact buried deposits.

**Historic.** Non-Indian settlement of northwestern South Dakota began with a few itinerant fur and hide traders. These men married into prominent Lakota families. Their Lakota wives and children usually stayed behind when the men returned to their other homes and families in the East (cf. Van Kirk 1980). The fur trade period was a time of rapid change precipitated by the availability of items from throughout the world and by new economic structures. Archaeology is uniquely suited to studies of such changes, because it focuses on material culture and such expression of economic and social structure as settlement size, trade routes, and housing types.

The fur trade period was followed by corporate cattle operations using the unclaimed ranges and reservation lands of the northern Great Plains to raise meat for the rapidly expanding cities of the East and Midwest. The near extinction of bison made such enterprise both possible and necessary, but for native people as a whole it spelled a long economic and social decline.

The Bismarck to Deadwood Trail passes through a portion of the Grand-Moreau region. This was one of three routes into the Black Hills during the gold rush of 1875–1876.

Like other areas of western South Dakota, most historic sites in the region date to the homesteading era. Promoters tagged western South Dakota “the last great frontier,” where immigrants, city dwellers, and adventurers would find a new and prosperous existence on thriving farms. Because establishment of the Great Sioux Reservation in 1868 had placed the West River region off limits to white settlement and railroads, the region was among the last the government opened for homesteading. The Black Hills were nominally relinquished in 1877—in an agreement later found to violate the US Constitution and federal law—but it was not until 1904 that the large reservations were reduced to approximately their present size. The Dawes Severalty Act of 1887 instituted reforms in Indian country that amounted to little more than another land grab. Each Indian family was to be allotted a farmstead; the remaining “surplus” lands were then opened for white settlement. The number of would-be homesteaders far surpassed the amount of land. In October 1909, more than 80,000 people registered for a lottery for 10,000 homestead claims on the Cheyenne River and Standing Rock reservations. These claims were similar to those under the Homestead Act, except that the government charged a per-acre fee, with the proceeds intended for use in “civilizing” the Indians (P. Nelson 1986:19). Severe drought in 1911 brought the land rush to a halt. Few of those who held on through the 1910s and 1920s would remain after the 1930s turned much of the region to dust.

The Grand-Moreau Tablelands region is rich in archaeological sites that can shed light on these historic trends. Because the region encompasses a mix of land that was always Indian country, land that was reservation and then opened to homesteading, and land that went from public to private to public again as the great experiment in dry-land farming failed, the history of these changes is stitched into its landscape. For millennia people have literally walked away from their homes leaving behind the material footprints of their stay. Because the region is still largely unplowed and much less urbanized, these tracks have not been erased.

## Sites by Period

*Paleoindian:* 39DW385 (possible Agate Basin), 39PE285 (Alberta), 39ZB31, 39ZB87 (Scottsbluff-Cody)

*Early Archaic:* 39DW360 (Hawken), 39PE1?, 39PE88?, 39PE145, 39PE161, 39PE200 (Hawken), 39PE298 (Bitterroot)

*Middle Archaic:* 39CO158, 39CO166 (Duncan), 39DW165, 39MD405 (Hanna), 39PE67 (Hanna), 39PE191, 39PE212 (McKean), 39ZB31

*Late Archaic:* 39DW165, 39DW189 (Pelican Lake), 39DW257 (Pelican Lake), 39MD391 (Besant), 39MD393 (Besant), 39MD397, 39MD400, 39MD405 (Pelican Lake), 39PE20 (Besant or Avonlea), 39PE69, 39PE85 (Pelican Lake), 39PE112 (Besant), 39PE119 (Pelican Lake), 39PE159 (Besant), 39PE171 (Pelican Lake), 39PE199 (Pelican Lake), 39PE208 (Pelican Lake), 39PE220 (Besant), 39PE277 (Besant), 39PE299 (Besant), 39PE348, 39ZB35, 39ZB86 (Besant)

Unspecified Archaic: 39PE88, 39PE110

*Plains Woodland:* 39DW165, 39DW189?, 39MD391, 39MD393, 39PE20, 39PE112, 39PE147 (Sonota), 39PE159, 39ZB31, 39ZB72, 39ZB73

*Late Prehistoric:* 39DW165, 39DW189 (Avonlea), 39MD397, 39PE63, 39PE69?, 39PE88, 39PE89, 39PE114 (Avonlea), 39PE122, 39PE123, 39PE160, 39PE165 (Avonlea), 39PE184, 39PE243, 39PE361, 39ZB133

*Plains Village:* 39DW181 (Swan Creek Village), 39DW347 (White Horses Village), 39DW353 (Red Dog Village), 39PE1?, 39PE69, 39PE88, 39PE89, 39PE118, 39PE142?, 39PE150?, 39ZB31 (Extended Coalescent), 39ZB35

*Protohistoric:* 39PE33, 39PE148, 39PE215, 39ZB82

*Historic artifact scatter:* 39CO60, 39CO225, 39DW42, 39DW158, 39DW159, 39DW162, 39DW164, 39DW177, 39DW259, 39DW342, 39DW347, 39DW359, 39DW377, 39DW379, 39DW384, 39PE54, 39PE109, 39PE157, 39PE160, 39PE211, 39ZB10, 39ZB73, 39ZB128, 39ZB129

*Farmstead:* 39CO58, 39CO147, 39CO164, 39CO170, 39CO172, 39DW32, 39DW33, 39DW49, 39DW157, 39DW161, 39DW180 (sheep ranch), 39DW195, 39DW340, 39DW345, 39DW351, 39DW362, 39DW370, 39DW371, 39DW375, 39MD392, 39PE18, 39PE57, 39PE78,

39PE88, 39PE96, 39PE106, 39PE125, 39PE127, 39PE139, 39PE155, 39PE186, 39PE189, 39PE195, 39PE225, 39PE226, 39PE227, 39PE228, 39PE229, 39PE230, 39PE231, 39PE236, 39PE237, 39PE254, 39PE255, 39PE256, 39PE257, 39PE270, 39PE271, 39PE274, 39PE275, 39PE276, 39PE278, 39PE279, 39PE295, 39PE308, 39PE318, 39PE323, 39PE326, 39PE327, 39PE328, 39PE329, 39PE333, 39PE347, 39PE350, 39PE351, 39PE355, 39PE359, 39PE501, 39ZB32, 39ZB46, 39ZB50, 39ZB51, 39ZB52

*Depression or depression with historic artifact scatter:* 39DW368, 39PE6, 39PE114, 39PE116, 39PE117, 39PE169, 39PE174, 39PE178, 39PE234, 39PE303, 39PE304, 39PE307, 39PE310, 39PE316, 39PE321, 39PE332, 39PE343, 39ZB33, 39ZB36, 39ZB54, 39ZB109

*Foundation:* 39CO77, CO225, 39DW39, 39DW166, 39DW198, 39DW361, 39DW368, 39PE16, 39PE76, 39PE173, 39PE179, 39PE198, 39PE294, 39PE320, 39ZB54, 39ZB63

*Dump:* 39CO163, 39CO171, 39PE92, 39PE315, 39PE332, 39ZB26, 39ZB98, 39ZB99

*Stage station:* 39CO72/39CO155, 39CO154, 39PE28, 39PE262

*Other historic:* 39CO60 (can), 39CO240 (inscription), 39CO2007 (railroad), 39DW163 (town of Firesteel), 39DW197 (cairn), 39DW384 (axles), 39DW2007 (railroad), 39MD402 (school), 39PE12 (cabin), 39PE112 (monument), 39PE113 (monument), 39PE148 (marker), 39PE197 (coal mine), 39PE217 (cairns), 39PE218 (ferry landing), 39PE222 (school?), 39PE223 (school), 39PE263 (sheep camp), 39PE228 (school), 39PE289–293 (mileposts), 39PE296 (granary), 39PE297 (school), 39PE334 (school), 39PE349 (school), 39PE353 (bridge), 39PE500 (stone johnny), 39PE2027 (road), 39PE2028 (road), 39PE2054 (Bismarck-Deadwood trail), 39PE2140 (highway dike), 39ZB45 (road), 39ZB108 (automobile), 39ZB2007 (railroad)

## **Prehistoric and Historic Themes**

***Sacred Sites, Traditional-Use Sites, and, Burials.*** No burials are recorded in this region. Four cairns at 39PE171 might contain human burials; for this reason archaeologists evaluating the site for its historic potential did not excavate them. It should be noted that no artifacts or human remains were found in association with these features to support their interpretation as graves. Some Ute refugees were buried near the town of Thunder Butte (Ziebach County Historical Society 1982). In addition to the usual procedures and etiquette for grave sites, preservation personnel who encounter these burials should consult the descendants of the Utes who traveled to South Dakota in 1908–09, some of whom married into the Cheyenne River Lakota Tribe, and include their wishes in any decisions regarding the graves.

Two places in the region, Dog Butte and Thunder Butte, are associated with sacred stories of the Lakota (Ziebach County Historical Society 1982:47). Thunder Butte is a traditional locale for vision quests. Many place names in this region come from Lakota words, including Black Horse Butte, Dirt Lodge Creek, Hump Butte and Creek, Buffalo Skin Creek, Goose Creek, Green Grass Creek, Leaves on the Hill Butte, Many Caches, Red Earth Creek, Lodge Pole Creek, Bear Creek, Beaver Trap Creek, Butcher Creek, Virgin Creek, and Snake Creek (Ehrensperger 1941). Dirt Lodge Creek was named for a stage station or trading post. Butcher Creek takes its name from a battle between Lakota and Métis or Cree in which many were killed. Skull Butte similarly was

named for a battle in which many Crow Indians died at the hands of Lakota forces. A place called Indian Crossing was where a north-south trail crossed the Moreau River. Many Caches on the south side of the Grand River a few miles down from Bullhead was named for the ruins of cache pits visible there. This was the birthplace of the Lakota chief Sitting Bull (Vestal 1932:3).

Because much of this region is part of the Cheyenne River and Standing Rock Indian reservations, it contains many traditional Lakota religious and resource-gathering sites, as well as places important to Lakota history. Archaeologists working in the region are referred to the Cheyenne River Sioux Tribe and Standing Rock Sioux Tribe for more information about places considered important to tribal history and traditional activities. This area also played an important role in Cheyenne history, being the probable location of semi-permanent Cheyenne villages (Odell 1942:151; Grinnell 1918, 1923I:377, Wood 1971b). For current Cheyenne views, the reader is referred to the Northern Cheyenne Tribe.

**Stone Circles.** Stone circle sites occur throughout the Grand-Moreau Tablelands region. These range in size from one circle to 20. Sites 39PE1/39PE21 and 39PE161 were reported to contain Early Archaic projectile points, but provides clear evidence for an Early Archaic age for the stone circles. The stone circle features at 39PE1/39PE21 appear to be part of a Plains Village component containing ceramics typical of that period. Site 39PE191 is a large stone circle site with surface artifacts from the Archaic period. The stone circle at 39PE33 is Protohistoric, based on metal items at the site. The age range of stone circle features remains uncertain. While most stone circle sites appear to represent tipi camps, based on their size, location, features, and artifacts, ethnographic evidence suggests that some were sacred places (Sundstrom 2003).

*Stone Circle Sites:* 39CO25, 39CO226, 39MD403, 39PE1, 39PE3, 39PE12, 39PE21 (same as 39PE1?), 39PE24, 39PE25, 39PE33, 39PE45, 39PE62, 39PE64, 39PE76?, 39PE77, 39PE83, 39PE86, 39PE130?, 39PE131, 39PE134, 39PE135, 39PE161, 39PE176, 39PE177, 39PE190, 39PE191, 39PE192, 39PE204, 39PE302, 39PE310

**Cairns.** The Grand-Moreau Tablelands contain many cairn sites. One of these, 39PE171, had Pelican Lake projectile points in an adjacent artifact scatter, raising the possibility of a Late Archaic age for some of these features. For more recent cairns, the continuous use of this area by Lakota people may allow interpretations of cairn use and significance based on ongoing Native American traditions.

*Cairn Sites:* 39CO24, 39DW352, 39PE468, 39PE81, 39PE82, 39PE121, 39PE128, 39PE145, 39PE151, 39PE171, 39PE203, 39PE206, 39PE207, 39PE235, 39PE274, 39PE310

**Eagle Trapping.** Three sites in the region are identified as possible eagle trapping pits. Given the relatively unaltered environment of the area, it eventually may be possible to correlate the locations of such sites with the locations of known eagle nesting areas. This would require both a better understanding of how to identify eagle pits and a more complete survey of the region.

*Possible Eagle Trapping Pits:* 39DW46, 39PE193, 39PE194

**Cheyenne History.** W.R. Wood's (1971b) research suggests the eastern portion of the region may contribute to an evaluation of Cheyenne occupation during the Protohistoric period. No sites have yet been identified as Cheyenne or proto-Cheyenne.

***Reservation-Era Lakota History.*** This region includes portions of the Standing Rock and Cheyenne River Indian reservations. Such sites as early allotment farmsteads, churches, Sun Dance grounds, traditional plant-gathering places, sacred sites, vision quest sites, schools, and the like will prove important in exploring the history of the early reservation period, which is otherwise known primarily through government records. Development of this theme will require survey of reservation lands and a more detailed study of the sites there.

***Historic Trail.*** The historic Bismarck to Deadwood trail passes through the Grand Moreau region (Holst 1983). This trail was significant in attempts to establish a US military presence in the Lakota country and in the Indian v. US war for the Powder River country and the Black Hills. The Bismarck trail also figured prominently in the Black Hills gold rush. The trail is recorded as 39PE2054. Three stage stops are also recorded: 39CO72, 39CO154, and 39CO155.

***The Cattle Industry.*** The Grand-Moreau Tablelands was an important open range for cattle. Cattle capitalists leased vast tracts of reservation land on which to fatten Texas longhorns before shipping them to eastern markets via Bismarck or Pierre. One of the early cattle drovers who became prominent in western South Dakota history was Ed Lemmon. Lemmon's life is a microcosm of the cattle industry in South Dakota. He began work as a cowboy at the age of 13, eventually devoting nearly 75 years to the industry. He started the L-7 ranch near the present town of Lemmon in 1902, leasing 865,000 acres on the Standing Rock Reservation. He fenced that tract, creating the largest pasture in the world. Later he sold out to homesteaders and founded the town of Lemmon. At present, the very limited amount of archaeological survey of the area has not identified sites related to corporate ranching; however, such sites are expected as archaeologists examine more private lands and lands that reverted back to the federal government after the homestead era.

## **Archaeological Potential**

The Grand-Moreau Tablelands area has great archaeological potential but lacks a data base sufficient to suggest specific research questions. Any intact archaeological sites will contribute to an understanding of the cultural dynamics of the area. Limited research in the Grand River National Grasslands suggests the presence of deeply buried multiple-component sites of unknown age (Beckes and Keyser 1983). Tool-stone procurement studies in the vicinity of White Butte (Ahler 1977) and Arrowhead Hill (Sneve 1973) call for additional research.

## **Management Considerations**

The Grand-Moreau Tablelands region comprises Indian reservations, other federally administered lands, and private cattle ranches. Its archaeological sites thus are not in much danger of damage or destruction. It is important at this point to build a more complete data base, especially through the survey of lands under federal administration. It is also imperative to work with the Tribal Historic Preservation Offices of the Standing Rock Sioux Tribe and Cheyenne River Sioux Tribe, as well as tribal historians, to assure the recognition and protection of Native American traditional-use sites in this region.

## Sites Listed in the National Register of Historic Places

The only archaeological sites listed are the remains of two stagecoach stations: 39CO72/39CO155 and 39CO154.

### Region 3: Central Cheyenne

#### Setting

The Central Cheyenne Region covers east-central Butte County, northern Meade County (north of the Belle Fourche River drainage and the Cheyenne River), and southern Ziebach County, and extends north of the Bad River drainage in Haakon County. The area comprises the Cheyenne River valley, terraces, breaks, and adjacent plains. It consists of rolling grasslands broken by occasional high isolated buttes or ridges. The Cheyenne River rises in the western Black Hills with its two branches, the Cheyenne proper and the Belle Fourche, nearly encircling the mountainous uplift on the south and north, respectively. The Central Cheyenne region includes the Cheyenne from the mouth of the Belle Fourche east to the edge of Stanley and Dewey Counties. Bedrock in this region is the easily-eroded Pierre shale. Streams cut through the shales in an intricate and ever-changing pattern. Terraces and fans of reworked sediments line the streams in some places. The higher, Pleistocene, terraces are capped by gravel beds.



*Figure 129. North Rhind Butte in the Central Cheyenne archaeological region (ARC photo).*

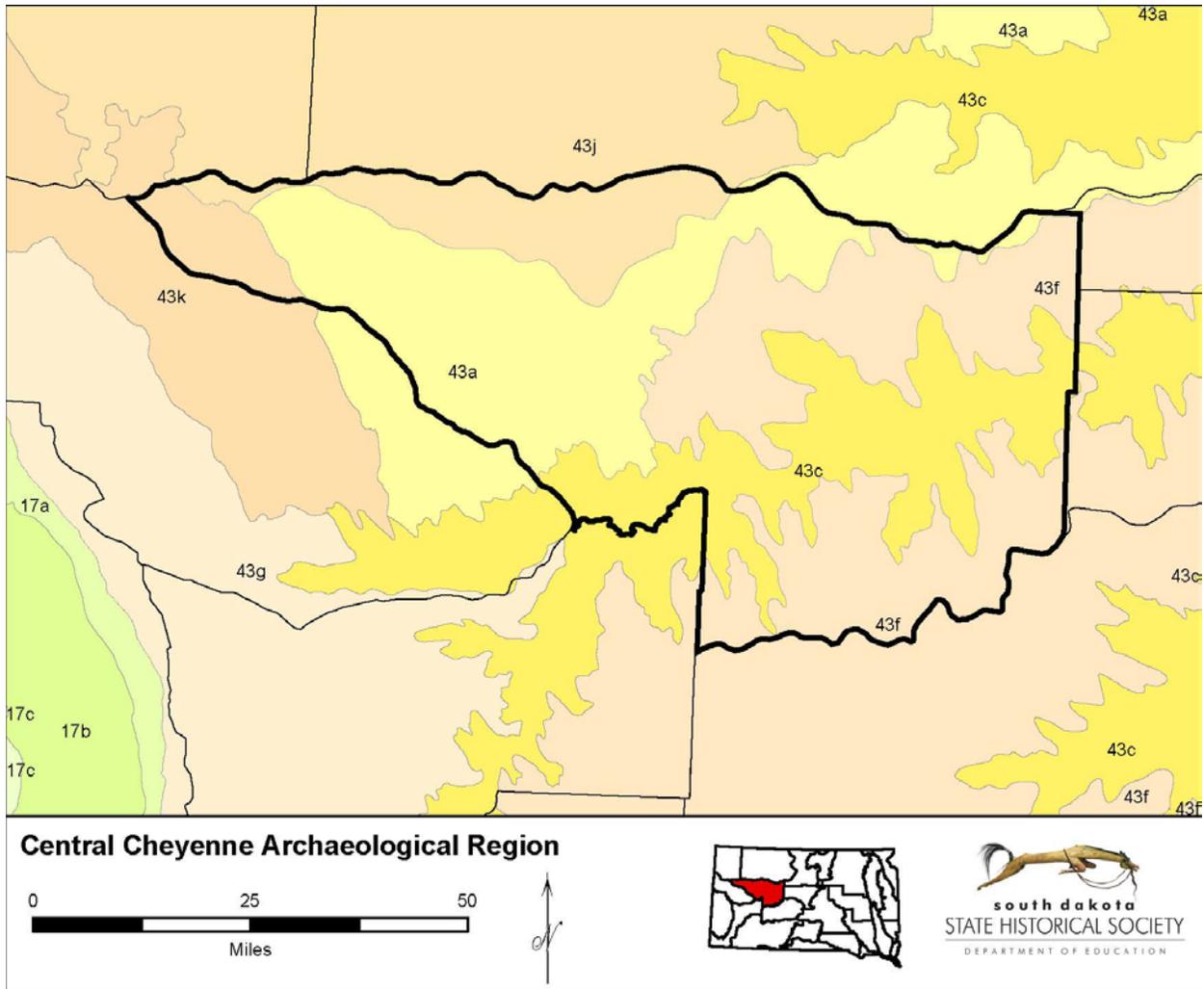


Figure 130. Ecoregions of the Central Cheyenne archaeological region.

43: Northwestern Great Plains

43a: Missouri Plateau, unglaciated moderately dissected level to rolling plains with isolated sandstone buttes.

43c: River Breaks, unglaciated, highly dissected hills and uplands bordering major rivers and associated alluvial plains.

43f: Subhumid Pierre Shale Plains, unglaciated, undulating plain; steep-sided, incised stream channels.

## Previous Archaeological Investigations

Previous research in this region has largely been limited to small-scale surveys for uranium exploration, water delivery systems, gravel quarries, electric transmission line projects, cable lines, bridge replacements, range management, and water projects (e.g., Artz 1980; Lazio 1979a, 1979b, 1980; Nowak 1981; Messerli and Williams 1986; Buechler 1995b; Lueck 2001). A grant-funded survey recorded 41 sites along the Cheyenne River and examined the geomorphology of

portions of the Central Cheyenne and Bad-Cheyenne archaeological regions (Fosha 1992a). Another project examined selected Bureau of Land Management parcels (Thompson and Greiser 1999). Few excavation projects have been done in the region: one recovered information from a multiple-component campsite (39HK10) in the right-of-way of a highway realignment project (Haberman and Lippincott 1997). Another evaluated the historic significance of 39ZB14, a site with historic and prehistoric components (T. Chevance 1987). Two other sites were damaged by road construction activities before they could be evaluated (39ZB47 and 39ZB48). The few artifacts and fire-cracked rock remaining at these sites included a Middle Archaic point at one and a Late Prehistoric point at the other (Hanenberger 1995).

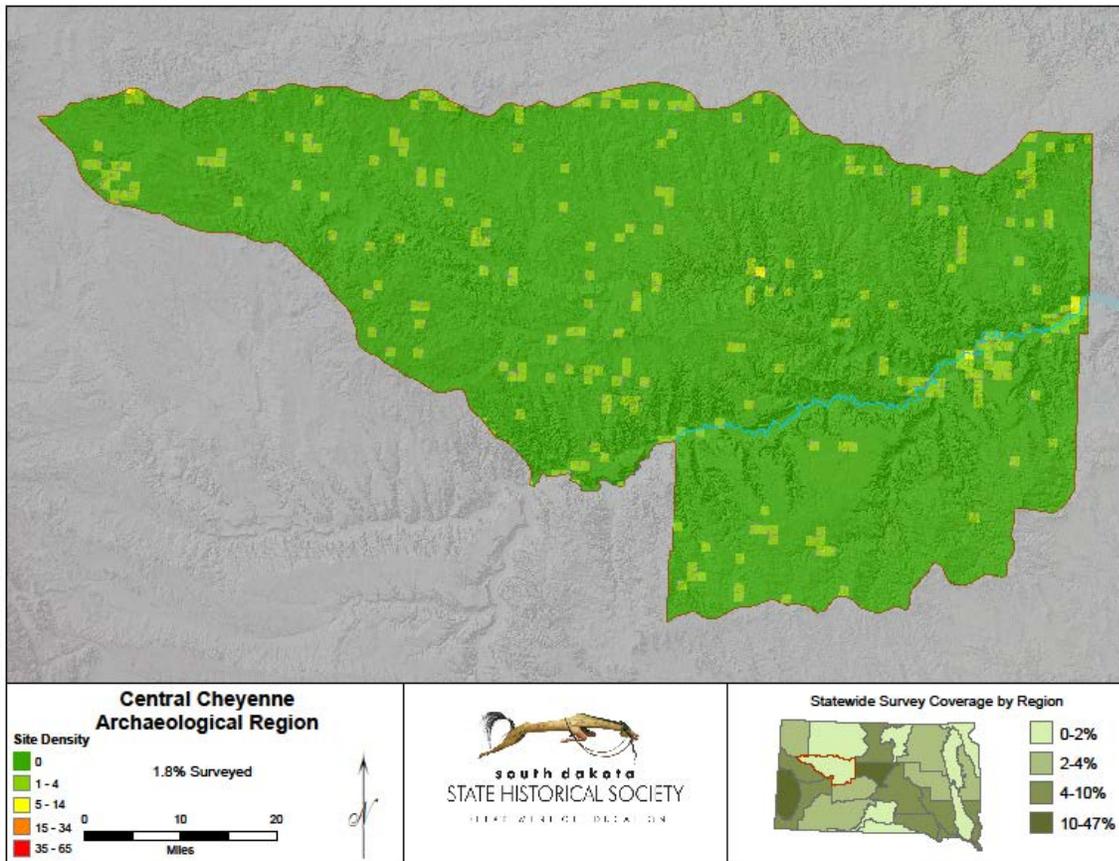


Figure 131. Density of known archaeological sites, Central Cheyenne region.

## Historic Contexts

***Paleoindian.*** The Central Cheyenne region has no recorded Paleoindian sites or find spots. It is unclear whether this means that people did not use the area then or that sites from the period have been eroded away or deeply buried. More studies of past environments and land surfaces in the region are needed to explore this problem.

***Early Archaic.*** The region so far has only one find dated to the Early Archaic period: a Hawken point found on the surface of 39ZB69. Again, it may be that sediments dating to this period were removed or deeply buried as the landscape changed.

***Middle Archaic.*** Only four sites represent this period in the Central Cheyenne region. Site 39HK10 had a feature radiocarbon dated to the Middle Archaic period, as well as Late Archaic, and Late Prehistoric components. The various components were mixed, however, and provide little information other than the site was as a short-term campsite for several thousand years. Archaeologists excavated the site in advance of a highway construction project. They uncovered 31 features, mostly shallow, lightly fired hearths, rock-filled hearths, and scatters of fire-cracked rock. The site contained debris from chipped-stone tool-making, as well as a wide variety of chipped-stone tools and a small amount of pottery. Most of the stone tools were of local materials, but some may have been imported from the Black Hills. A small amount of bone came from deer or pronghorn. Arrow points and Coalescent Tradition pottery indicated a Late Prehistoric age for the site; however, radiocarbon samples from hearths yielded ages of 3640, 1830, 2240, 460, and 260 BP. Because materials of different ages were not separated into distinct layers, researchers could not detect differences in how the site was used over time (Haberman and Lippincott 1997).

Another multiple-component site, 39HK85, has not been excavated, but it contained Middle Archaic and Late Archaic artifacts on the surface. Site 39HK40 was a single artifact: a Duncan-Hanna projectile point. Such a small sample does not permit any conclusions regarding Middle Archaic use of the region.

***Late Archaic.*** Site 39HK10, discussed above, had Middle and Late Archaic radiocarbon dates, as well as Late Prehistoric radiocarbon dates and artifacts. The site was a short-term campsite. Site 39HK85 had Middle and Late Archaic artifacts on its surface, but it has not been excavated. An isolated Pelican Lake projectile point was found at 39MD236. Another was associated with elk bone at 39ZB85.

***Late Prehistoric.*** Several artifact scatters in the region contain Late Prehistoric arrow points. These include 39BU226, 39HK27, 39HK30, 39HK42, 39ZB40, and 39ZB47. An occupation site, 39HK10, contained Late Prehistoric artifacts, including arrow points and Coalescent Tradition pottery. The site contained a wide variety of tool types, chipping debris, and numerous hearths. It was interpreted as a short-term camp that was used at least several times during the Archaic and Late Prehistoric. Other sites in the region have Plains Village tradition pottery. Sites 39HK20 and 39HK35 are occupation sites at which hearths, animal bone, and Extended Coalescent pottery were found. At 39HK20 at least two earlier buried components were present (Fosha 1992a). These finds show that people lived in the region during this period, and that some Middle Missouri populations were expanding along tributary rivers during the Extended Coalescent period. A more detailed view of Late Prehistoric life in the region awaits further research.

**Protohistoric.** The Central Cheyenne region was home to Cheyenne and Lakota buffalo hunters, and probably was within the hunting territory of the Arikara during their expansion along the Missouri River in South Dakota. The first Europeans to enter the Central Cheyenne region were French explorers and fur traders. The Verendrye party was in the area in 1743. For the next century, few non-Indians would enter the area, other than the occasional fur trade agent.

The possible site of a Plains Village settlement and historic trading post is designated 39ZB202; however, the existence of a site at this location has not been confirmed (Lazio 1982). Similarly reported, but not located, are the site of a burial scaffold from which the town of Red Scaffold takes its name (39ZB2) and a Lakota wagon burial (39ZB4). Early sources refer to a village and trade rendezvous at the forks of the Cheyenne River (Odell 1942:12, 14; Kapler 1987). More definite evidence for protohistoric use of the region comes from 39HK17, a multiple-component site with historic, protohistoric, and prehistoric materials, and from 39ZB84, a site with chipped stone artifacts and bison and deer bone. An occupation site, 39ZB59, contained Middle Archaic, Woodland, and Plains Village materials assigned to the Post-Contact Coalescent tradition. These sites have not been excavated.

**Historic.** The Central Cheyenne region contains many historic sites from the homestead era and the early reservation period, including farmsteads, cabins, schools, and town sites. Most historic sites are the remains of houses and outbuildings from homesteads. Other historic sites are related to the Bismarck-Deadwood Trail (Holst 1983). The eastern portion of this region lies within the Cheyenne River Indian Reservation. Early reservation sites include the camps of various Lakota bands, including those of Big Foot, Bear Eagle, Red Shirt, Touch the Clouds, and Hump. The camps of the Corn, White Swan, and Little Bear bands were farther downstream and outside the Central Cheyenne region (Brooke 1890). These camps have not been recorded as archaeological sites. Early reservation sites in the archaeological sites inventory include cabins and farmsteads, as well as a mortar stone used for pulverizing chokecherries for use in *wasna* (pemmican). The ruins of a commercial campground, a store, and a church round out the list of historic sites in the region. A historic Lakota home site overlying a prehistoric artifact scatter was test excavated. This site (39ZB14) contained the remains of outbuildings and corrals and a mix of historic items such as glass beads and nails and prehistoric chipping debris (T. Chevance 1986).

**Summary.** At present, very little is known of the archaeology of the Central Cheyenne region. It appears that nearly all Paleoindian and Early Archaic deposits have been either removed by erosion or deeply buried. In this region, virtually no research has been done on geomorphology; thus, the archaeological potential of the stream terraces and other landforms is not known. A few buried sites with Middle Archaic, Late Archaic, and Late Prehistoric components have been recorded, but not excavated. The only extensively excavated site in the region, 39HK10, contained 31 features, including shallow basin hearths, stone-filled hearths, and scatters of fire-cracked rock. This site had Late Prehistoric arrow points and Coalescent Tradition pottery. No earlier artifacts were found, but five radiocarbon samples from hearths included dates from the Middle and Late Archaic periods, as well as the Late Prehistoric period (Haberman and Lippincott 1997). The presence of ceramics suggests that this may have been a temporary camp used by Middle Missouri villagers hunting deer or pronghorn.

## Sites by Period

*Paleoindian:* None

*Early Archaic:* 39ZB69

*Middle Archaic:* 39HK10, 39HK40, 39HK85, 39ZB48, 39ZB59

*Late Archaic:* 39HK10, 39HK85, 39MD236 (Pelican Lake), 39ZB85 (Pelican Lake)

*Woodland:* 39ZB59, 39ZB71

*Late Prehistoric:* 39BU226, 39HK10, 39HK27, 39HK30, 39HK35, 39HK42, 39ZB40, 39ZB47

*Plains Village:* 39HK20 (Extended Coalescent), 39HK35 (possible Extended Coalescent), 39ZB59 (Post-Contact Coalescent)

*Protohistoric:* 39HK17, 39ZB2, 39ZB59 (Post-Contact Coalescent), 39ZB84

*Historic:* 39BU15, 39HK6, 39HK9, 39HK11, 39HK12, 39HK16, 39HK17, 39HK18, 39HK26, 39HK28, 39HK36, 39HK37, 39HK39, 39HK43, 39HK51, 39HK52, 39HK53, 39HK55, 39HK56, 39HK57, 39HK58, 39HK62, 39HK68, 39HK81, 39HK84, 39HK90, 39HK91, 39MD171, 39MD302, 39MD302, 39MD304, 39MD306, 39MD307, 39MD308, 39MD309, 39MD342, 39MD360, 39MD361, 39MD368, 39MD467, 39MD509, 39MD512, 39MD525, 39MD526, 39MD528, 39MD566, 39MD582, 39MD584, 39MD585, 39MD596, 39MD597, 39MD598, 39MD599, 39MD600, 39MD601, 39MD602, 39MD603, 39MD604, 39MD606, 39MD659, 39MD707, 39MD710, 39ZB4, 39ZB12, 39ZB14, 39ZB30, 39ZB37, 39ZB38, 39ZB39, 39ZB60, 39ZB71, 39ZB90, 39ZB92, 39ZB94, 39ZB96, 39ZB97, 39ZB103, 39ZB105, 39ZB106, 39ZB110, 39ZB202, 39ZB203

## Prehistoric and Historic Themes

*Sacred Sites, Traditional-Use Sites, and, Burials.* Three burial sites are reported for this archaeological region. One is known only from a photograph at the Archaeological Research Center showing an excavation labeled “Snake Creek.” No other information is available for this site. The second is the reported location of the burial scaffold from which Red Scaffold Creek and the town of Red Scaffold take their names. Some poles were observed in that area; these appeared to be from a reconstruction of the legendary burial scaffold. The third was reported as a “historic Sioux wagon burial.” The site record notes that looters had disturbed this burial. No other information is on file for this burial site. A rectangular depression, 1 meter wide by 1.5 meters long and about 40 cm deep, was noted as a possible grave (Lueck 2001). No artifacts or markers were found and the site was not further investigated.

Historic accounts are more definite in identifying the Central Cheyenne region as a place for burials. Red Scaffold Butte and the nearby creek were said to be named for a red burial scaffold placed on the butte. This was said to hold the bodies of two girls who killed each other in a fight (Ehrensperger 1941:10; Ziebach County Historical Society 1982:46). Old accounts say that

following a battle with Crow (Absoroka) enemies, the Lakota buried their dead in trees at the forks of the Cheyenne (Bordeaux 1929:47).

The Cheyenne River was an important corridor between the Missouri River and the western bison grounds (Bordeaux 1929:47). The Lakota name for it translates to Good or Beautiful River, a term preserved in the name of its northern fork, the Belle Fourche (Warren 1922:68; Robinson 1912:273; Bordeaux 1929:47; Hyde 1968:16). One Cheyenne term for the river also translates to Good River (Odell 1942:173). Another Cheyenne term for the river is Red Paint River (Petter 1915:921; Grinnell 1906:20; Odell 1942:173). The Cheyenne River plays an important part in Cheyenne history. The Tsistsistas Cheyenne once had earth lodge villages near its mouth and planted corn along its course and that of its tributary Cherry Creek (Hyde 1968:16; Hayden 1862:377; Odell 1942:12; Moore 1987:72). The Cheyenne had a trade rendezvous at the forks of the Cheyenne (Odell 1942:14; Moore 1987). Cherry Creek is a translation of the Lakota name referring to the abundant stands of chokecherry along its banks (Hayden 1862:377). That the Cheyenne used the same name is evident in an 1878 Cheyenne map with a pictograph of chokecherries at this location (Fredlund and Sundstrom 1999).

A place important in Lakota oral tradition is a small cave in Meade or Ziebach County where a woman was said to have lived with wolves for a winter (Sneve 1995:9; South Dakota Writers' Project 1941:103–104). A similar story takes place at Squaw Butte in Meade County (Ehrensperger 1941:12). In this version, a woman falls ill and is left behind when the people move on. She lives throughout the winter in a cave occupied by wolves and coyotes. When her people return the next spring and she approaches them, they at first throw rocks at her because they think she is a ghost.

Eagle Butte, near the town of the same name, was a place where Lakota men trapped eagles by concealing themselves in pits dug into the hillside and seizing the birds by the legs when they alighted (Blasingame 1958:25; Ehrensperger 1941:5). Because eagle trapping was a highly ritualized activity, such places are considered sacred.

Other places in the region bear names from Lakota tradition. Butcher Creek was named for a fight there between Lakota and Métis warriors in which the Métis were soundly defeated (Ehrensperger 1941:18). Cherry Creek, Bear Creek, and Rattlesnake Butte and its creek are translations of Lakota terms (Ehrensperger 1941:11, 10; Ziebach County Historical Society 1982), as is the feature formerly known as Tit Butte or Squaw Teat Butte (Ehrensperger 1941:13). The streams known today as Red Owl Creek and White Owl Creek are called “the owl feathers” in Lakota, because they run parallel like an owl’s wing feathers (Ehrensperger 1941:53); non-Indians added the “red” and “white” terms to distinguish the two streams.

A traditional cultural property near High Elk Hill was noted during an archaeological survey in advance of a highway realignment project (Rhodd 1992). This locality had prayer flags, tobacco ties, and tobacco offerings in valleys and on ridge crests overlooking Rudy Creek. Interviews with local residents identified the locality as a vision quest area. After the center line for the highway realignment was staked out near High Elk Hill, such indicators of traditional use as prayer flags appeared at another place near the highway right-of-way, and an elderly resident of the area stated that burials were present there. The features she identified as burials appear to be geological features and not constructed cairns; however, they were treated as burials and avoided by the

highway project (Rhodd and Donohue 1995). No attempt was made to ascertain whether these features contained human burials.

The reader is referred to the Tribal Historic Preservation Office or cultural office of the Lakota tribes, particularly that of the Cheyenne River Sioux Tribe, for information on places of special historic or cultural significance to Native Americans.

***Stone Circle Sites.*** The Elmer Briggs site, 39HK36, contained a series of 14 shallow circular depressions hypothesized to be the remains of some kind of houses, perhaps tipi rings (Fosha 1992a). Another feature at the site is a partially buried stone circle about four meters in diameter. A cairn and some historic features also occurred at the site. Shovel tests indicate a layer of burned earth, bone, charcoal, and chipped stone artifacts at 13–15 cm below surface. Several metates were found in and near the circular depressions. Whether these features represent tipis or some other kind of house, this site has a high probability of containing information about pre-contact house types. The arrangement of the features is typical of protohistoric and historic era winter camps, where tipis were spaced along wooded stream banks for shelter from winter winds and access to firewood. A better understanding of this unique site awaits further research.

Other sites have the more typical stone circles on the surface and lack depressions. They vary in size from one to 57 stone circle features. One site contained cairns as well as stone circles. Similar to 39HK39, 39BU147 in Butte County had a mano-metate set cached nearby (Keller and Keller 1984). The largest stone circle site in the region, 39BU158, has artifacts exposed on the surface. These sites are found on hilltops and along stream courses.

*Stone circle sites:* 39BU147, 39BU148, 39BU158, 39HK24, 39HK36

***Cairns.*** Cairns are common in this region. None have historic artifacts nearby or otherwise appears to be historic in age. Most of these sites had a single cairn, but some had up to four. Two cairn sites contain chipped stone artifacts and one contains stone circles as well as cairns. One site (39MD516) is an earthen mound about two meters in diameter capped by local rocks in a single layer covering the top and upper slope of the mound. The mound was about 50 cm high. One cairn was in a valley bottom and one on a slope. The remaining were on hill tops or ridge crests.

*Sites with Cairns:* 39BU145, 39BU148, 39HK22, 39HK23, 39HK25, 39HK31, 39HK32, 39HK33, 39HK44, 39MD516, 39ZB16, 39ZB17, 39ZB18, 39ZB19, 39ZB20, 39ZB21, 39ZB22, 39ZB23, 39ZB25

***Middle Missouri Outposts and Early Cheyenne Sites.*** Researchers have proposed varying interpretations for finds of typical Middle Missouri artifacts, features, and villages away from the Missouri River (R. Alex 1981a, 1981b; A. Johnson 1993). The Central Cheyenne archaeological region has a few such sites from the Extended Coalescent and Post-Contact Coalescent traditions. These may prove important in understanding Arikara expansion into what is now South Dakota. This area may also be important to tracing the migration of the Cheyenne westward from the Missouri River to the Black Hills. At present, no definite proto-Cheyenne sites have been identified by the limited amount of archaeological study in the region.

***Plains Village Sites.*** 39HK20 (Extended Coalescent), 39HK35 (possible Extended Coalescent), 39ZB59 (Post-Contact Coalescent)

***Deadwood-Bismarck Trail.*** Site 39MD368 is a stage station associated with the Bismarck-Deadwood trail that was one of the main routes into the Black Hills during the 1870s. This site is listed in the National Register of Historic Places. Wagon ruts in northern Meade County associated with the trail are also listed, but not as an archaeological site.

***Early Reservation Sites.*** The Central Cheyenne region contains both current and past reservation lands. Historic sites from this era can shed light on the transition from pre- to post-reservation life, the impacts of the allotment program, and how traditional beliefs and values were maintained in the face of pressure to assimilate to mainstream culture. Early reservation sites include the remains of cabins, frame houses, farmsteads, and a stone mortar for processing chokecherries.

*Reservation-Era Sites.* 39HK17, 39HK37, 39ZB4, 39ZB90, 39ZB94, 39ZB203

## **Archaeological Potential**

The archaeological potential of the Central Cheyenne region is unknown, because most of the region has not been surveyed and only two sites have been test excavated. A geomorphology study completed in 1992 indicates the presence of deeply buried, stratified sites along the Cheyenne River and its tributaries (Fosha 1992a). Because most of the region is remote and sparsely populated, many archaeological sites are well preserved. The general lack of Early Archaic and Paleoindian sites so far suggests that such deposits are deeply buried or were removed by erosion. Without better information, it is impossible to evaluate the likelihood of Archaic and Paleoindian sites for the region. For the Late Archaic through Historic periods, however, sites appear to be fairly abundant and relatively unmolested. Historically, the Cheyenne River was an important link between the Missouri River and the eastern settlements and the western outposts of Bismarck and Deadwood. Given the historical and spiritual importance of the river to historic Native Americans, it is likely that it functioned similarly in prehistoric times, as well. Finally, areas such as northern Haakon County witnessed rapid transitions from Indian country to cattle range to reservation to non-Indian homesteading territory. The materials remains of each can provide a unique perspective on these iconic historic changes.

## **Management Considerations**

At present, archaeologists lack basic information on site distribution in this region. It is important that cultural resource management projects on federally administered lands are designed for a high level of site information recovery and detailed recording of both archaeological and environmental data. Because the area is sparsely populated, archaeological resources are likely to have been preserved. Private landowners should be encouraged to protect their archaeological resources.

## **Sites Listed in the National Register of Historic Places**

The aforementioned stage station, 39MD368, is the only site in the Central Cheyenne region currently listed in the National Register.

## Region 4: Bad River Basin

### Setting

The Bad River Basin Region encompasses the Bad River drainage basin located in extreme eastern Pennington County; southern Haakon County; northern Jackson County; northern Jones County; and southwestern Stanley County. The area is part of the Pierre Hills physiographic zone and is characterized by rolling grasslands surrounding the Bad River Valley. Thick beds of relatively soft Pierre shale underlie the area, permitting the formation of deep gullies.



*Figure 132. Bad River Basin landscape (National Weather Service photo).*

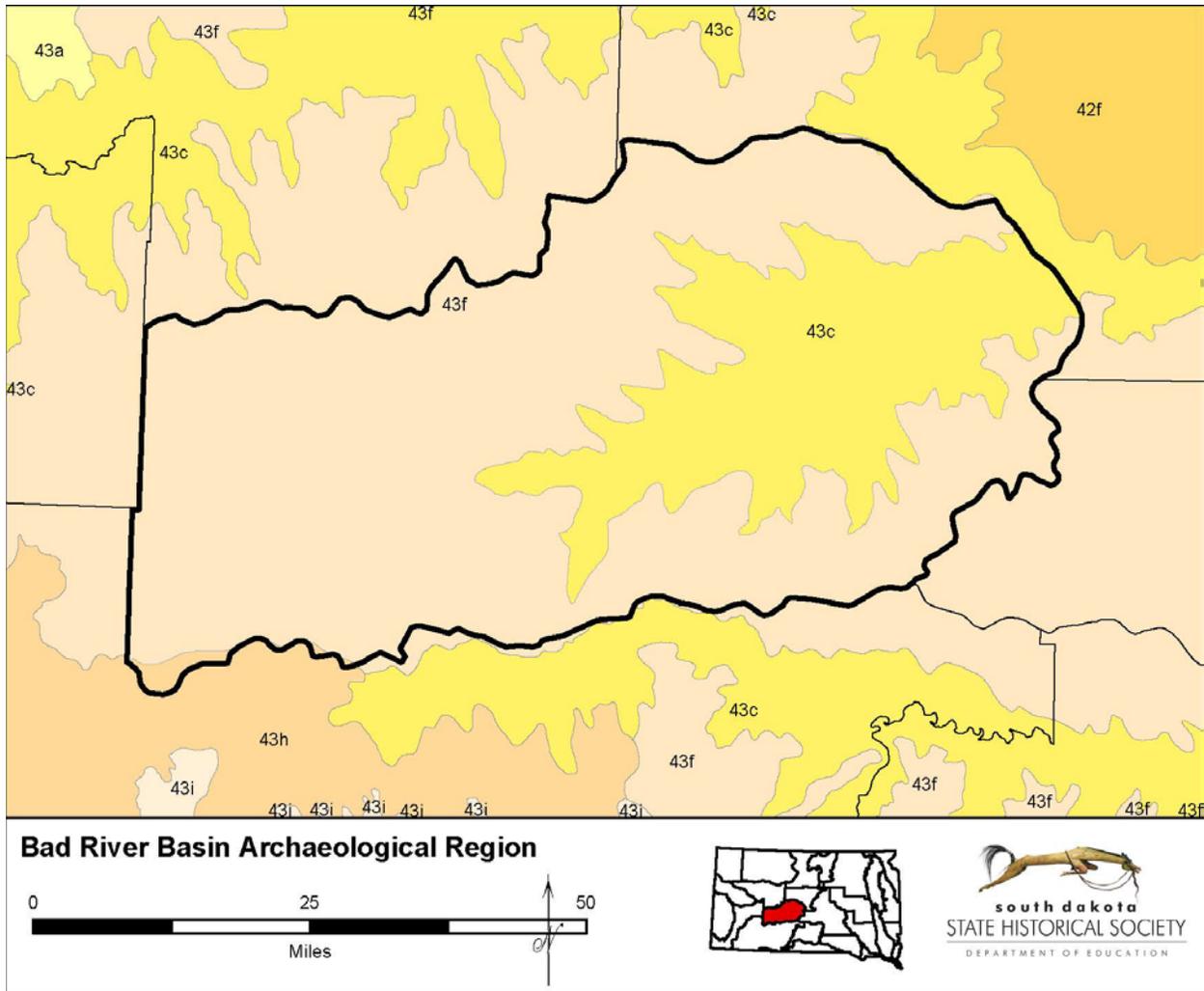


Figure 133. Ecoregions of the Bad River Basin archaeological region.

43: Northwestern Great Plains

43a: Missouri Plateau, unglaciated moderately dissected level to rolling plains with isolated sandstone buttes.

43f: Subhumid Pierre Shale Plains, unglaciated, undulating plain; steep-sided, incised stream channels.

## Previous Archaeological Investigations

Archaeologists with the Smithsonian Institution-River Basin Surveys surveyed the proposed Philip Reservoir site along the north fork of the Bad River in 1949; however, they found no sites (Wheeler and Wedel 1949). Beyond that investigation, the area has received little professional attention other than small-scale contract projects for bridge replacements, rangeland improvements, water lines, cellular towers, and gravel pits. Among the larger of these projects were regional water projects (Artz 1980; Nowak 1981; Buechler 1994, 1995c, 1996b, 2001, 2002a, 2002b), federal land exchanges and grazing districts (Winham *et al.* 1984; Polk and Polk 1989; Buechler 1986; Ranney and Miller 1995), selected National Grasslands parcels (Winham *et al.*

1984), highway realignments (T. Chevance 1982; Fosha 1992b; Estep 1993b; Shierts 1996; R. Williams 2000, 2001), and minerals exploration areas (Haug 1976b). Test excavations at the Herman site (39JN1), a possible earth lodge village site, yielded only butchered bone (R. Alex and Zimmerman 1978). A railroad right-of-way was surveyed across the region in 1999.

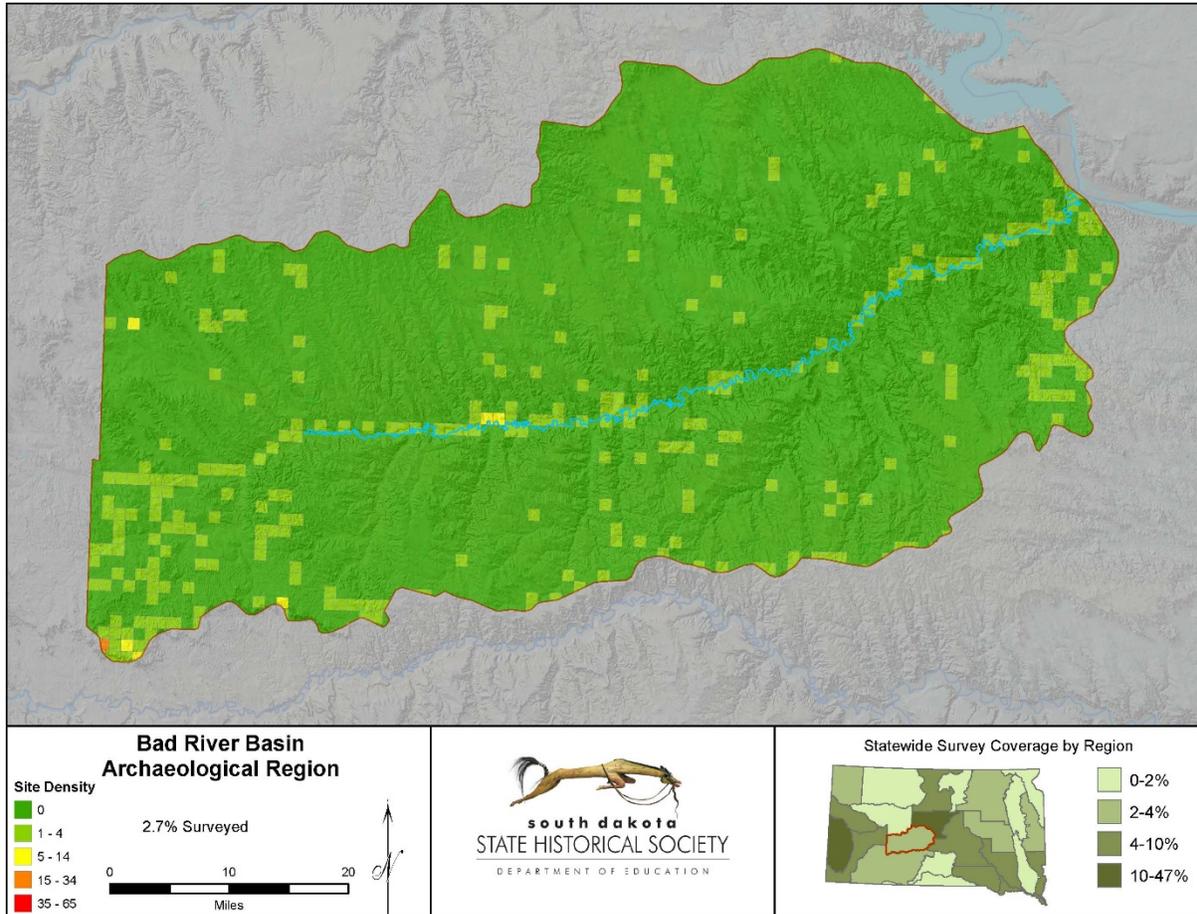


Figure 134. Density of known archaeological sites, Bad River Basin region.

## Historic Contexts

**Paleoindian.** The region has only one recorded Paleoindian site. Site 39HK70 is a scatter of chipped stone artifacts that contained a parallel-oblique projectile point identified as a possible Angostura or Lovell point. This site has not been excavated.

**Early Archaic.** No sites of this period are known from the region.

**Middle Archaic.** A scatter of chipped stone artifacts with a Duncan-Hanna projectile point, 39JN13, is the only clear indication of Middle Archaic use of the region thus far recorded. A Middle or Late Archaic projectile point was found at another site in the region, 39ST345. No other information is available for this period.

**Late Archaic and Plains Woodland.** The Bad River Basin contains two or three recorded Late Archaic sites: the Middle or Late Archaic projectile point at 39ST345 and two surface artifact scatters with Pelican Lake projectile points, 39JK207 and 39JN32. These sites have not been excavated. Two artifact scatters containing ceramics are either of Late Woodland or Plains Village affiliation.

**Late Prehistoric and Plains Village.** An isolated Avonlea projectile point (39HK64), two other isolated Late Prehistoric points (39ST245 and 39JK253), and a small scatter of chipped stone tools and debris (39JN21) are the only Late Prehistoric sites in the region. The region contains several Plains Village sites, as identified by the presence of Middle Missouri tradition ceramics. The Herman site (39JN1) had surface features and artifacts suggesting a village site, but nothing was found during excavations. One site (39ST129) was assigned a general Plains Village affiliation; two other artifact scatters had Extended Coalescent ceramics (39ST86 and 39ST111). Other sites had ceramics, but whether these were Plains Village or Plains Woodland wares is not specified in the site records (39HK117, 39JN3, 39JN8, 39ST174, and 39ST294).

**Protohistoric.** No Protohistoric sites are recorded for this region. During the fur trade era, a trail ran from Butte Caché near the confluence of Big White Clay Creek and the White River northeast along the White-Cheyenne divide and east along the course of the Bad River (Hyde 1961); this trail has not been identified archaeologically. This gave the southern Lakota bands access to the trading posts on the Missouri River.

**Historic.** The Bad River Basin contains more historic than prehistoric sites. As of 2008, the region had 76 recorded historic sites versus 69 prehistoric sites. Of the prehistoric sites, 16 were isolated finds. Historic sites include the grave of a Native American woman, 19 farmsteads, 9 depressions with associated artifact scatters, 9 whistle-stops or depots, 8 schools, 7 foundations and 3 dumps. Also recorded for the region are a B-29 crash site, two historic markers, a commercial building (garage and café), a set of wagon wheels, a cabin that may have served as a stage stop, and several wells, depressions, and catchment dams.

**Summary.** The archaeology of the Bad River Basin region is very poorly known. A few Plains Village sites and a stone circle site were reported for the area before a formal sites inventory was in place for South Dakota. Virtually nothing is known of these sites, not even whether some of them actually existed in the region. More recent investigations have revealed very little about the region. Nevertheless, the region does contain some potentially important sites. Several possible Plains Village sites, including the two identified as Extended Coalescent, will be important in tracing the history of village expansion beyond the Missouri River trench. Two sites with bison bone eroding from gullies may provide much-needed information on prehistoric use of the area.

## **Sites by Period**

*Paleoindian:* 39HK70 (Agate Basin or Lovell Constricted)

*Early Archaic:* none

*Middle Archaic:* 39JN13 (Duncan or Hanna), 39ST345

*Late Archaic:* 39JK207 (Pelican Lake?), 39JN32 (Pelican Lake)

*Late Prehistoric:* 39HK64 (Avonlea), 39JN21, 39ST245, 39JK253

*Plains Village:* 39HK117?, 39JN1, 39JN3, 39JN8, 30ST76?, 39ST86, 39ST111, 39ST129, 39ST174, 39ST294

*Protohistoric:* none

*Historic:* 39HK5, 39HK48, 39HK49, 39HK50, 39HK59, 39HK60, 39HK61, 39HK63, 39HK67, 39HK72, 39HK74, 39HK76, 39HK77, 39HK79, 39HK86, 39HK96, 39JK53, 39JK144, 39JK146, 39JK147, 39JK150, 39JK159, 39JK160, 39JK162, 39JK163, 39JK165, 39JK167, 39JK170, 39JK181, 39JK182, 39JK184, 39JK185, 39JK206, 39JK208, 39JK239, 39JK252, 39JK258, 39JK259, 39JK260, 39JK265, 39JK270, 39JK2003, 39JN6, 39JN9, 39JN10, 39JN14, 39JN15, 39JN20, 39JN22, 39JN23, 39JN24, 39JN25, 39JN31, 39JN33, 39JN34, 39JN35, 39JN36, 39JN37, 39JN38, 39JN40, 39JN2007, 39ST127, 39ST128, 39ST177, 39ST288, 39ST295, 39ST296, 39ST305, 39ST306, 39ST311, 39ST312, 39ST313, 39ST314, 39ST315, 39ST335, 39ST336, 39ST340, 39ST344

## **Prehistoric and Historic Themes**

***Sacred Sites, Traditional-Use Sites, and Burials.*** As noted above, the only burial recorded for this region is the historic gravesite of a Lakota woman.

The name for the Bad River is a direct translation of the Lakota term. Some accounts say that this is because of a misfortune that happened there: either an epidemic (E. Deloria 1922:416) or a flash flood (Bordeaux 1929:186; Ehrensperger 1941:4; Mattison 1954:18). One can speculate that the river was also “bad” in contrast to the Beautiful or Good (today’s Cheyenne) River, which led directly to the Black Hills. The Mandan term for the Bad River translates to “lake river” (Will and Spinden 1906:218). Other groups referred to it as the Teton River, referring to the Lakota bands centered there (Warren 1922:68).

Medicine Creek was so called by the Lakota because they gathered certain medicinal herbs there (Ehrensperger 1941:43). The stream now known as Deep Creek is Pass Creek in Lakota (Jensen 2005:195). The Lakota name for Peno Spring referred to it as the source of the Bad River (Warren 1922:97). Nearby Grindstone Butte was said to be a traditional source for whetstones (Ehrensperger 1941:7). This butte was also a landmark on the old Deadwood Trail. Plum Creek is a translation of a Lakota term meaning many plums (Hayden 1862:337). Lance Creek was remembered as the place where Leaf performed a Bear Dreamer dance to demonstrate the powers of healing the bear spirit gave him in a vision (Buechel and Manhart 1998:406).

Of these locales, only Grindstone Butte is likely to have an archaeological signature; however, Peno Springs, Plum Creek, Medicine Creek, and Lance Creek can be expected to have campsites related to their resources and special properties. The Tribal Historic Preservation Office or cultural offices of the various Lakota tribes, the Northern Cheyenne Tribe, and Three Affiliated Tribes should be consulted concerning the presence of places with special significance to Native Americans in the area.

***Middle Missouri Outposts.*** Researchers have proposed varying interpretations for finds of typical Middle Missouri artifacts, features, and villages away from the Missouri River. The Bad River Basin has a few such sites. These may prove important in understanding Plains Village social and economic dynamics.

***Trails.*** This region may contain sites associated with early military, Indian, and commercial trails or routes across the area. Historic trails include the Ft. Pierre to Deadwood trail and the Peno Springs trail. Some cattle drives also followed the Bad River to Fort Pierre. At present, only site, 39JK53, a cabin that possibly served as a stage station, can be linked to historic trails and routes; however, additional research in the region is likely to identify other such sites.

***Ranching and Farming.*** This region may contain sites related to pioneer ranching operations, such as the first Scotty Phillips ranch near Grindstone Butte in west central Haakon County. More research is needed to explore this possibility. The region contains numerous ruins from the era of the Homestead Act, when the region became populated and just as quickly depopulated as drought and inadequate land holdings bankrupted would-be farmers.

***Railroad Development.*** The region contains one of the major railroad routes into western South Dakota. Several depots and “whistle-stops” are among the historic sites recorded for the region. These have the potential of illuminating how settlements grew up along the rail lines, sometimes prospering and sometimes failing.

## **Archaeological Potential**

At present, very little is known of either the archaeology of this region or its potential for historically significant sites. In general, pre-contact sites are rare in this region, but whether this means it was relatively lightly used or simply subject to severe erosion is not known. The stone circle and Plains Village sites in this region can contribute to an understanding of two different life-ways: one focused on semi-permanent farming villages and one focused on exploitation of bison herds. More field research is needed before the archaeological potential of this region can be assessed.

## **Management Considerations**

Cultural resource management planning in the Bad River Basin region is hampered by a lack of information on the archaeological resources and traditional cultural properties the region contains. Archaeology in this region should focus on compiling accurate information on site distribution and environmental variables.

## **Sites Listed in the National Register of Historic Places**

No sites are listed for this region.

## Region 5: South Fork Cheyenne

### Setting

The South Fork Cheyenne Region encompasses the Cheyenne River drainage basin in the southwestern portion of South Dakota with the exception of the Black Hills, southeastern Pennington County, and Oglala Lakota (formerly known as Shannon) County. It does not include the Belle Fourche (north fork of the Cheyenne River) Basin, which forms its own archaeological region. This area comprises southeastern Meade County and portions of Pennington, Custer, and Fall River Counties. Physiographically, the region is part of the Pierre Hills Section of the Missouri Plateau of the Great Plains (Rothrock 1943) and also includes the southern foothills of the Black Hills. The area is characterized by rolling grasslands broken by deeply-entrenched stream channels.



*Figure 135. View of South Fork Cheyenne landscape (L. Sundstrom photo).*

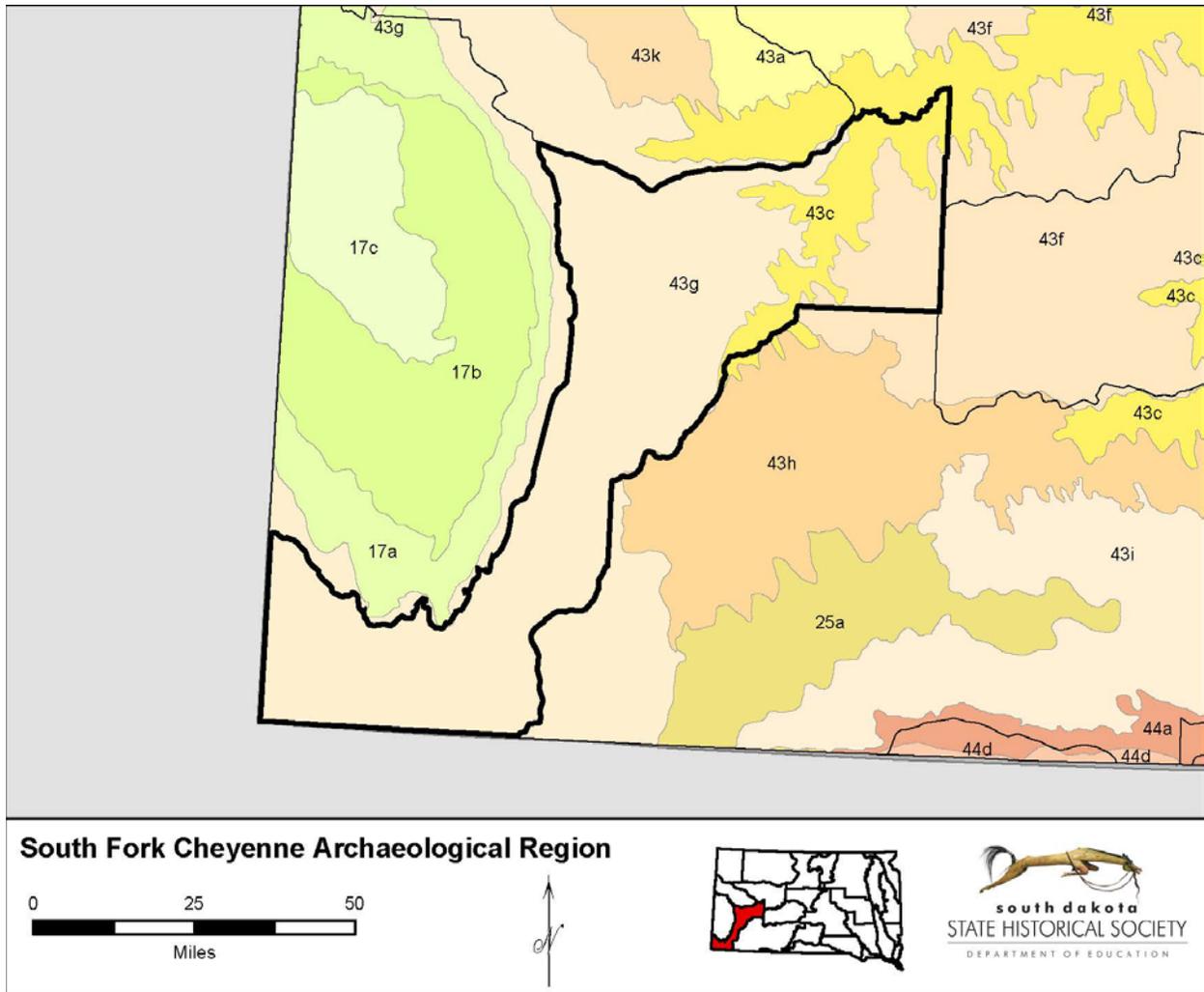


Figure 136. Ecoregions of the South Fork Cheyenne archaeological region.

43: Northwestern Great Plains

43c: River Breaks, unglaciated, highly dissected hills and uplands bordering major rivers and associated alluvial plains.

43g: Semiarid Pierre Shale Plains, unglaciated, undulating to rolling plains; steep-sided, incised stream channels.

## Previous Archaeological Investigations

The first archaeological explorations of the south fork of the Cheyenne River happened incidental to expeditions sponsored by the federal government and natural history museums to gather information about this relatively unexplored portion of the West. The Black Hills Expedition of 1874, led by Lt. Colonel George A. Custer, was officially supposed to assess the natural resource potential of the Black Hills, which was Indian land at the time. In fact, the real purpose was to investigate rumors of rich gold deposits. In his report, the expedition naturalist, William Ludlow, mentioned the presence of old campsites and trails in the vicinity of Red Canyon in the southern Black Hills (Ludlow 1875). At the time, the government was mainly interested in

these in reference to finding a militarily defensible trail into the interior Black Hills, and Ludlow made no attempt to establish who left the remains or when.

In 1938, Over and the University of South Dakota Museum, with Works Project Administration funding, excavated 14 rock shelters in the southern Black Hills (Meleen and Pruitt 1941). Both ceramic-producing and nonceramic groups had occupied these shelters. Unfortunately, the field notes and most of the artifacts from this project were lost and no report was completed. In Wyoming, another Works Progress Administration project directed by Ted Sowers attempted to compile a basic list of that state's archaeological resources (Sowers 1941). About the same time, the Smithsonian Institution excavated a small portion of the Agate Basin site in the southwestern Black Hills of Wyoming (Roberts 1943). The site was found to be a Paleoindian bison kill, thus erasing whatever doubts may have still lingered as to the antiquity of human occupation of the area. These early studies showed that archaeological remains were present in the area, that these included diverse site types, and that at least some of the sites were prehistoric. The studies were too limited in scope and geographic extent to allow many other conclusions. The assumption that prehistoric groups never occupied the interior Black Hills persisted in spite of these early studies, and few professional archaeologists bothered to question this assumption.

The first systematic archaeological surveys in the region were conducted by the Smithsonian Institution-River Basin Surveys project as part of the pre-inundation research for the proposed Angostura Reservoir. These surveys recorded 66 sites in the Cheyenne River basin, primarily prehistoric habitation sites (Bauxer 1947; Hughes 1948, 1949). In 1948, Richard Hughes and Mett Shippee test excavated 13 sites, including the Ray Long site (39FA65). This Paleoindian camp site yielded a radiocarbon date of  $9380 \pm 500$  years BP (Hughes 1949; Hughes and White n.d.a.). In 1949, Hughes and Richard Wheeler investigated 12 additional sites and reexamined two from the previous field season (Wheeler 1950, 1957). Related research investigated a pronghorn processing site, 39FA23 (T. White 1952) and the Pleistocene and Holocene terraces of the Cheyenne River near the proposed Angostura Reservoir (Hughes and White n.d.b.; Hughes 1950).

In 1974, the Archaeological Research Center conducted extensive surveys along portions of the Cheyenne River in Fall River and Custer Counties (Sigstad and Jolley 1975) in advance of uranium exploration. Also in 1974 and 1975, archaeologists surveyed selected portions of the Buffalo Gap National Grasslands (Kay 1974; Sigstad and Luoma 1976). The results of these surveys and additional research in the Buffalo Gap National Grasslands are summarized in an overview of the resources of the Nebraska National Forest (Cassells and Agenbroad 1981). In 1980, the Archeology Laboratory of South Dakota State University surveyed small portions of the Cheyenne River under a historic preservation grant (Hannus *et al.* 1983). Results of this initial study were limited but indicated the presence of buried archaeological deposits in stream terraces. The same year, a survey and inventory of rock art sites was conducted in the southern Black Hills (Sundstrom 1981a). This indicated the presence of nearly 100 rock art sites in the study area, which overlapped the South Fork Cheyenne and Black Hills regions, dating from Archaic through Protohistoric. A study of data collected during Cultural Resource Management surveys and test excavations explored the nature of tipi-ring sites in and near the eastern and southern Black Hills (Hovde 1981).

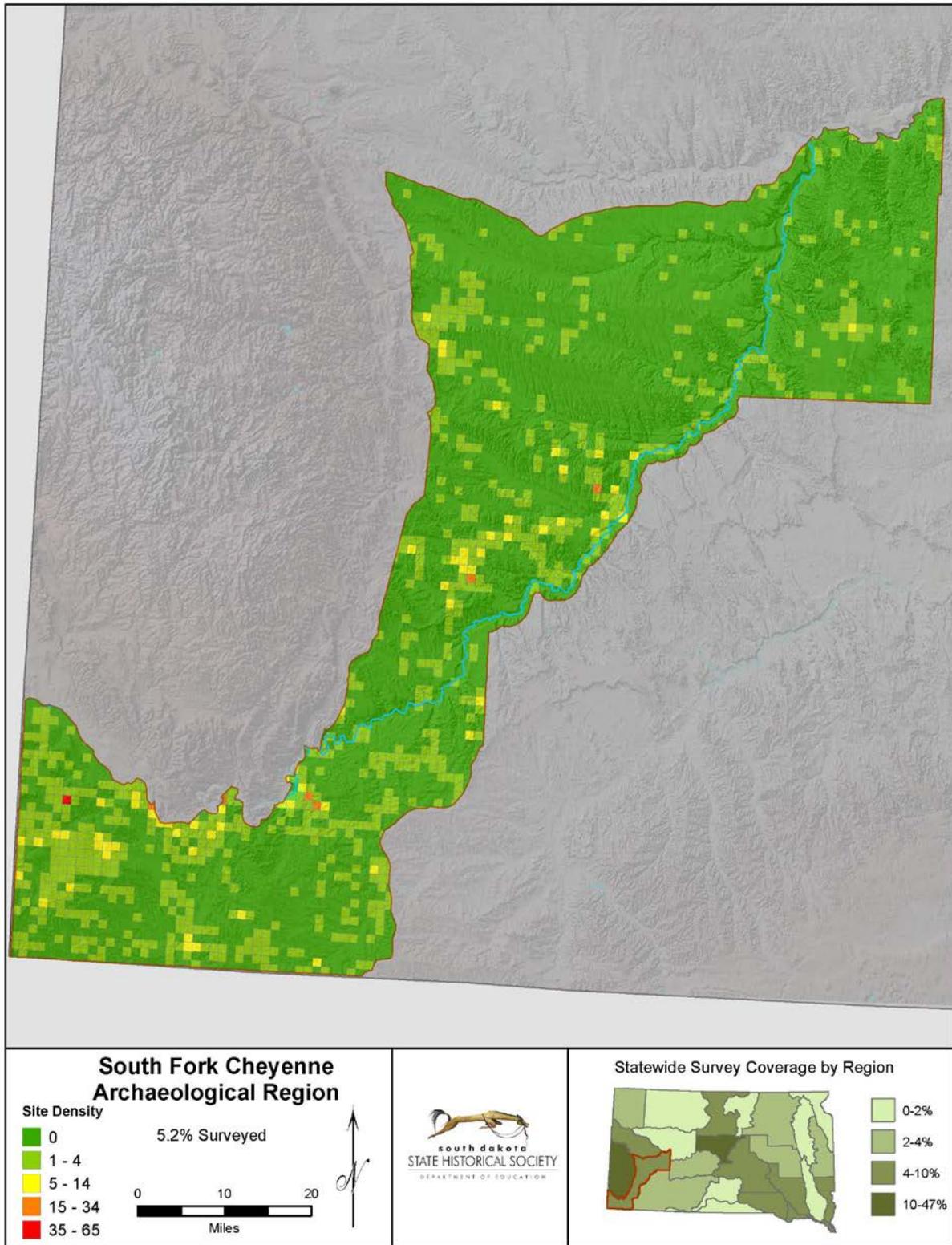


Figure 137. Density of known archaeological sites, South Fork Cheyenne archaeological region.

In 1982, archaeologists from Archaeological Research Center found the Danks site (39FA756), a buried, multiple-component site on Hat Creek (Haberman 1982). Test excavations confirmed the presence of a buried soil but yielded no diagnostic materials to date the cultural components (Haug 1982b). Low water levels in 1985 allowed renewed investigations at Angostura Reservoir, including both survey and re-excavation of some sites tested earlier by Smithsonian Institution-River Basin Surveys crews (Hannus 1986; Lippincott 1996; Haug *et al.* 1992). This included re-excavation of the Ray Long site (39FA65), resulting in new radiocarbon dates (Hannus 1986). In the 1980s, Archaeological Research Center did additional cultural resource inventory and evaluation work at Angostura Reservoir (Haug *et al.* 1992).

Since the early 1970s, numerous small-scale contract surveys have contributed to the region's data base. These include surveys for oil well pads, various range management activities, bridge replacements, cable lines, radio and cellular towers, utility improvements, seismic exploration lines, and gravel pits. Some of the larger projects involved federal land exchanges (Pry and Lowry 2006; Buechler 1986, 1987a, 1987b; Polk and Polk 1989; Noisat 1990c, 1992b; Redmond 1993a, 1993b, 1993c; Hunter 1996; Martz 2000; C. Taylor 2000; Lowry and Marshall 2002), highway realignments (Haug 1977; Messerli 1986, 2003; Fosha 1992b; Braun 1994; Donohue *et al.* 1996; Byrne 1992, 1997a, 2006; R. Williams 1995; Williams and Hanenberger 2002; Des Planques and Seiverding 2004; Bruce and Byrne 2006; Pflapsen 2006; Williams 2006; Byrne and Donohue 2007; Bank 2007), a prescribed burn (Hicks 2003), buried telecommunication cables (Miller and Ranney 1997; Buechler 1999a; P. Miller 2006; Kelley 2007a, 2007b), uranium exploration (P. Miller 1976; Miller *et al.* 1977; Haug 1976b, 1978a, 1978c), large-scale range improvements (F. Miller 1981; Buechler 1985a; Shierts 1998; Holen and Halligan 2000a, 2000b), and regional water pipelines (Buechler 1994, 1995b, 1996a, 2007a; Felix *et al.* 2000).

## Historic Contexts

***Paleoindian.*** No Clovis or Folsom complex sites have been recorded within the region; however, Clovis materials have been excavated in areas adjacent to the region at the Sheaman site in Wyoming (Frison and Stanford 1982) and at the Lange-Ferguson site in the White River Badlands of South Dakota (Hannus 1985, 1990). Similarly, Folsom materials have been recovered in a cultural context at the Agate Basin site in Wyoming just a few hundred yards west of the Wyoming-South Dakota border (Frison and Stanford 1982). One Goshen site is recorded in the South Fork Cheyenne region. Site 39FA1277 was a surface scatter of bison bone, a Goshen projectile point base, a chipped stone drill fragment, a portion of a stone knife, a scraper, two mano fragments, and a few flakes. Nothing was found in the four test units excavated there (Archaeological Research Center records).

Four other Paleoindian sites have been found in the portion of the region lying outside the southern Black Hills. A parallel oblique projectile point base was the only artifact at 39FA1074. Site 39FA1419 contained two flakes and a Scottsbluff-Eden projectile point. Site 39FA1703 contained chipped stone tools, flakes, and fire-cracked rock scattered along the eroded upper edge of the scarp between the second and third terraces of Hat Creek Valley. The cutbank shows a buried soil. Two fragments of a Hell Gap projectile point were found in an area incised by livestock and ATV trails. The surface materials also included a Late Archaic dart point fragment with corner

notches and a convex base, biface fragments, and flake tools. A test unit revealed buried artifacts to a depth of at least 80 cm, but no additional work has been done there ((Archaeological Research Center records).

The Ray Long site, 39FA65, lies just outside the South Fork Cheyenne region at the southern tip of the Black Hills archaeological region. Smithsonian Institution-River Basin Surveys crews excavated it in the 1940s (Wheeler 1957). A later investigation obtained more reliable radiocarbon dates for the site (Hannus 1986). This late Paleoindian site on a terrace of the Cheyenne River contained projectile points with parallel-oblique flaking, sometimes referred to as Angostura points. Components B and C at the Ray Long site (39FA65) contained Angostura points as well as unprepared hearths. Component B also yielded grinding slabs, manos, and transverse scrapers. Wheeler (1957) interpreted this as the remains of a campsite of hunters and gatherers. Component C contained a graver and clusters of thin quartzite flakes. This suggests a shift in subsistence strategies from mixed hunting and foraging to a greater focus on hunting. Hannus (1986) obtained radiocarbon dates ranging from 11,000±310 BP to 8950±140 BP, indicating the possibility of an earlier cultural level than was observed during the Smithsonian Institution-River Basin Surveys excavations. Hughes (1949) reported a Plainview type point from the Long site, also suggesting an earlier component there.

Two sites east of the Black Hills, 39CU1850 and 39CU1900, are recorded only as surface scatters of chipped stone tools and debris. A Paleoindian age is proposed for them based on the stone tool production techniques indicated by chipping debris.

**Early Archaic.** The region has two Early Archaic sites, both surface sites in the southern Black Hills foothills. Site 39FA1045 was a scatter of chipped stone flakes and tools, including a Hawken projectile point. At 39FA1159 a “Hawken-like” projectile point was found alongside chipped stone tools and debris, fire-cracked rock, and deflated hearths. These sites have not been test excavated.

**Middle Archaic.** A much larger set of sites from the South Fork Cheyenne region is assigned to the Middle Archaic period. Smithsonian Institution-River Basin Surveys excavations at Angostura Reservoir involved six Middle Archaic sites (Wheeler 1957), and later work identified three more sites (Haug *et al.* 1992). Component A at the Ray Long site (39FA65) contained an unprepared hearth, 176 flakes, a Duncan projectile point, a large stemmed projectile point, several stone knives and scrapers, four small hammerstones, three cores, pieces of a milling stone and mano, and several pieces of charcoal. This was interpreted as a short term camp of Middle Archaic age. Component A of the Kolterman site, 39FA68, contained a stone-lined basin hearth, stone platform hearths, cylindrical roasting pits, arrow points, a few bone tools and ornaments, and chipped stone tools. This was interpreted as a small hunting-foraging camp from the early Late Prehistoric period. Component B contained medium to large stone-lined basin and platform hearths and Middle Archaic dart points (McKean lanceolate and Kolterman or Duncan/Hanna types), as well as stone knives, scrapers, flake tools, a shaft cutter, choppers, manos, a grooved stream cobble, bone awls, a bone bead, chipped stone debris, and the remains of whitetail deer, cottontail, pocket gopher, and bison. Radiocarbon dates on hearth charcoal from this level were 3630±350 and 4240±350 BP. The latter two sites (Ray Long and Kolterman) lie within the Black Hills archaeological region just outside the South Fork Cheyenne region.

The single cultural level at the Landers site, 39FA54, indicated a short-term hunter-forager campsite. Dart points classed as Harney, Kolterman, and Landers types would now be placed within the Duncan-Hanna category. The site also had stone-lined saucer-shaped and platform hearths, chipped stone cores and debris, stone knives of various shapes, an end scraper, flake tools, an engraver, chippers, a shaft cutter, manos and metates, a grooved sharpening stone, a bone gaming piece, a lump of hematite, and bison and deer or pronghorn bone

Two other Middle Archaic sites in the Smithsonian Institution-River Basin Surveys project at Angostura were not excavated (Wheeler 1957). At 39FA52, fire-cracked rock, chipped stone artifacts, and bone lay scattered across the surface of a terrace and scarp. These included a Hanna projectile point, lanceolate and ovate knives, end scrapers, flake scrapers, choppers, hammerstones, manos, metates, and a bone gaming piece, as well as cores and chipping debris of a variety of local stone. The 1990s work at Angostura located three more Middle Archaic sites: 39FA842 (located within the Black Hills region), 39FA854 (Black Hills region), and 39FA851. The first two are small artifact scatters that included Middle Archaic projectile points; the latter was a more substantial camp site, as shown by clusters of bone, chipped stone artifacts, and fire-cracked rock. It has now been destroyed by the waters of Angostura Reservoir (Haug *et al.* 1992).

No major site excavations have taken place in other parts of the South Fork Cheyenne region. Of three test units at 39FA783, one contained artifacts. The site was recorded as a scatter of chipped stone tools and debris including Late Archaic and Middle Archaic dart points (Noisat 1990d). Three of four test units at 39FA1417 had buried artifacts. In addition, the surface of this site had a scatter of four cores, 33 flakes, 21 pieces of shgamatter, three bifaces, a few scrapers and flake tools, and the base of a Duncan-Hanna projectile point (Archaeological Research Center records). Site 39PN375 is a stone circle site with few very fragmentary projectile points (Hovde 1983). A Middle Archaic age was proposed for site 39PN375 based upon the projectile points; however, this is not widely accepted. The remaining Middle Archaic sites listed below are recorded only as surface scatters of chipped stone tools and debris.

**Late Archaic.** As with the Middle Archaic period, most information about the Late Archaic of the South Fork Cheyenne region comes from excavations at Angostura Reservoir. Probable Pelican Lake components in the region include the lower of two cultural levels at 39FA56. This level contained lined and unlined basin hearths, chipped stone tools, and metates. Corner-notched dart points and chipped stone knives were also found, along with a piece of pronghorn bone and other unidentifiable bone. This was interpreted as a short term hunting camp. At 39FA31, two components were identified: one near the surface and another at about 80 cm below surface (Haug *et al.* 1992). The lower component yielded a calibrated radiocarbon age of 3500 BP, at the Middle Archaic-Late Archaic boundary. Projectile points from the upper component were intermediate in form between Besant side-notched and Pelican Lake corner-notched types, placing this level at the Late Archaic-Late Prehistoric boundary. The lower component contained little besides a hearth. The upper level had a dense scatter of stone tools, chipping debris, and fire-cracked rocks.

Other Late Archaic sites are recorded only as surface scatters. A few sites had Pelican Lake projectile points on the surface but were not test excavated. These include 39FA1645, 39FA1679, 39FA1708, and 39PN1183.

**Late Prehistoric.** In the South Fork Cheyenne region, post-Archaic sites are primarily short-term camps and special activity sites. These fall into two categories: those lacking affinity to Plains Village complexes and those with ceramics or other materials showing a link to Plains Village complexes of the Middle Missouri region. Non-ceramic sites are those listed as Late Prehistoric. Three excavated Late Prehistoric components are known from Smithsonian Institution-River Basin Surveys work at Angostura Reservoir in the 1940s. At the Landers site, 39FA54, Late Prehistoric use of the site was indicated only by a side-notched arrow point found on the surface. The original excavators interpreted this as evidence of ephemeral reuse of the Middle Archaic site by a later group (Wheeler 1957). Site 39FA35 was a short-term camp with Pelican Lake and possible Avonlea points, as well as other chipped stone tools and debris, a groundstone tool, a socketed antler artifact, a possible bone tool, and remains of pocket gopher, eastern cottontail, prairie dog, raven, and mussel. A mixed Late Archaic-Late Prehistoric level also occurred at 39FA38 (Wheeler 1957). This had a stone-lined basin hearth, a stemmed dart point, a few stone knives and scrapers, a mano, chipped stone debris, a single pottery sherd, and one deer or pronghorn bone. These indicated a series of short-term occupations of the site (Wheeler 1957). The latter two sites (39FA35 and 39FA38) are in the Black Hills archaeological region.

Site 39CU414 is a stone circle site overlooking Battle Creek near its confluence with the Cheyenne River (Hovde 1981). It contained flakes, shatter, biface fragments, Badlands knives, cobble choppers, one scraper, and one projectile point, nearly all of which were inside the stone circles at or near the surface. The point is a Late Prehistoric Prairie Side-Notched type.

**Plains Village.** Plains Village ceramics have been found at many other sites around the southern, eastern, and northern peripheries of the Black Hills. Their relationship to the Plains Village cultures of the Missouri River is poorly understood (R. Alex 1981b; A. Johnson 1993; Lippincott 1996); however, ceramics from these western sites are variously identical to, or variants of, Middle Missouri types.

The Phelps site, 39CU206, lies just east of the Black Hills. It has not been excavated; information consists solely of materials accidentally unearthed during construction of the Phelps ranch buildings and found in the ranch yard over the years (R. Alex 1981b; L. Alex 1979; A. Johnson 1993). This includes large amounts of bone tools, conch and dentalium shell, and few ceramic sherds. Ceramics resemble Initial Middle Missouri and Extended Middle Missouri wares, but are not identical to those from the Missouri River. The presence of conch shell and Initial Middle Missouri wares suggest an early Plains Village date, probably between 900 and 1050 CE (A. Johnson 1993). Although the quantity of shell suggests a site devoted to long-distance trade, the function of this site is not definitely known (A. Johnson 1993; L. Alex and Martin 1993). Interestingly, the site collection contains western goods, as well, in the form of two arrow points made of obsidian from the Yellowstone National Park area and two dentalium shell beads from the Pacific (Alex and Martin 1993). In the 1980s, archaeologists noted depressions behind the Phelps house that might be earth lodge remains; however, this possibility has not been explored.

Ceramics also occurred at the Box Elder site (39PN200), but excavations indicated that much of the site had been destroyed (L. Alex 1978). Few artifacts were found in an intact cultural context; however, the site contained the well preserved remains of at least two bison, two deer or pronghorn, and one dog. The site appears to be a late summer or early fall hunting camp used by a small group of Middle Missouri villagers. Much of the bone had been smashed to extract the

bone grease used in pemmican production. Artifacts included a few sherds of thin, well made pottery, a large end-scraper, a stone knife, a bone quill flattener, and chipping debris. These suggest that women as well as men were present at the site, if the pattern of women preparing animal hides held during prehistoric times as it did historically. Tool-stone was from the Black Hills and possibly the Knife River in North Dakota.

South of the Black Hills, 39FA1686 was located as a small scatter of chipped stone tools and debris, fire-cracked rock, and a few historic artifacts. Test excavations indicated only a sparse scatter of artifacts and fire-cracked rock at and near the surface. Seven small ceramic sherds, including a rim fragment too small to classify as to type, indicate ephemeral Late Prehistoric period use of the site. No intact cultural deposits were found among three buried soils at the site. Two other sites near Angostura Reservoir contained Extended Coalescent pottery, 39FA860 and 39FA861.

More substantial Plains Village occupations are indicated by 39FA23 and 39FA45. At 39FA45, a midden deposit contained a wide variety of chipped stone tools and debris, as well as pottery similar to Extended Coalescent types (Wheeler 1957). Stone tools included a triangular arrow point, several types of knives and scrapers, arrow shaft cutters, shaft abraders, and choppers. Shell fragments and bison, pronghorn, and dog or coyote bone were found as well. This site was interpreted as “a campsite of a small village group which used temporary (portable?) dwellings, pottery, utensils, and stone implements, and which subsisted mainly by taking large game with bow and arrow” (Wheeler 1957:28). At 39FA23, Initial or Extended Middle Missouri pottery was found in a pronghorn hunting camp (Lippincott 1996). Besides large amounts of pronghorn bone, the camp contained mussel shell, bison and small mammal bone, and possible maize kernels, indicating a diverse diet. The site was used in late summer or early fall, presumably to stock up on meat for the coming winter. Radiocarbon dates suggest the site was used sporadically from 1050 to 1400 CE.

**Protohistoric.** A very large ridge top site in the eastern foothills, 39CU498, contained a possible gunflint (Sundstrom 1980). This artifact was found among a scatter of 300–400 stone flakes, cores, and chipping debris. Two cairns were also present at the site. No other datable artifacts were found, so it is not clear whether the site represents multiple uses of the ridge top. The abundance and variety of stone tools at the site suggest a prehistoric or initial protohistoric age. The site has not been tested or evaluated. A cairn complex east of the Black Hills, 39CU2985, was identified by representatives of the Oglala Sioux Tribe as a burial place for slain enemies. This interpretation has not been tested through archaeological investigations and finds no parallel in historically recorded practices.

Site 39FA1231 consists of 11 shallow pits dug into the crest of a hill. Interviews with Lakota elders indicate that these were used to process chokecherries (Redmond 1993c). The pits would be lined with “green” deer or antelope hide; the chokecherries were then crushed into a pulp and made into cakes to dry for long-term storage. The practice of preparing chokecherries by pounding and drying is well documented in ethnographic reports.

**Historic.** The Ogallala Post, located near the confluence of Rapid Creek and the Cheyenne River, is well-known to local historians but the exact location of the site is uncertain. Two major historic trails known to cross the region are the Cheyenne to Deadwood trail and the Sidney to

Deadwood trail. Early cattle ranching operations include the S&G Ranch, an Anglo-American operation thought to be operating in the area as early as 1875 (Lee and Williams 1964).

**Summary.** The South Fork Cheyenne region contains sites from all periods. Most of these represent short-term campsites. The Late Paleoindian and Middle Archaic periods are well represented, as are what appear to be temporary, seasonal camps used by Missouri River villagers. Of particular interest are the diverse food and food-processing equipment at the Ray Long site, the periodic reuse of sites during the Middle Archaic period, and the apparent communal pronghorn hunting by Plains Village groups indicated at 39FA23.

## Sites by Period

*Paleoindian:* 39CU1850, 39CU1900?, 39FA1074 (Late Paleoindian), 39FA1277 (Goshen), 39FA1419 (Scottsbluff-Eden), 39FA1703 (Hell Gap), 39FA1074 (parallel oblique)

*Early Archaic:* 39CU417, 39FA1045 (Hawken), 39FA1159

*Middle Archaic:* 39CU569 (McKean), 39CU1845, 39FA25, 39FA52, 39FA54, 39FA351, 39FA783, 39FA851, 39FA942 (McKean), 39FA1133, 39FA1138, 39FA1274, 39FA1406, 39FA1417, 39FA1418, 39MD5, 39MD576, 39MD577, 39MD770, 39PN375?, 39PN1186

*Late Archaic:* 39CU417, 39FA22?, 39FA31, 39FA57?, 39FA863 (Pelican Lake), 39FA783, 39FA918, 39FA1233 (Pelican Lake), 39FA1249, 39FA1379, 39FA1490, 39FA1645, 39FA1679, 39FA1703, 39MD5, 39PN1034, 39PN1182, 39PN2751, 39PN1623

*Unknown Archaic:* 39FA600

*Plains Village:* 39CU206 (Initial Middle Missouri), 39FA23 (Initial or Extended Middle Missouri), 39FA45 (Extended Coalescent), 39FA860 (Extended Coalescent), 39FA861 (Extended Coalescent), 39PN200

*Late Prehistoric:* 39CU882, 39CU414, 39FA25 (Avonlea), 39FA28, 39FA51, 39FA54, 39FA69, 39FA351, 39FA737, 39FA746 (Prairie Side-Notched), 39FA863, 39FA933 (Prairie Side-Notched), 39FA1246, 39FA1480, 39FA1494, 39FA1686, 39FA1694 (Black Hills and South Fork Cheyenne), 39MD739, 39PN2751 (Avonlea)

*Protohistoric:* 39CU498, 39CU540, 39CU541, 39CU2985, 39FA1231

*Historic Farmsteads:* 39CU494, 39CU1809, 39CU1818, 39CU1841, 39CU1844, 39CU1875, 39CU1928, 39CU2068, 39CU2825, 39CU2936, 39CU2937, 39CU2938, 39CU3068, 39CU3322, 39CU3730, 39CU3733, 39CU3735, 39CU3738, 39FA98, 39FA105, 39FA233, 39FA477, 39FA479, 39FA573, 39FA700, 39FA703, 39FA705, 39FA711, 39FA839, 39FA843, 39FA1054, 39FA1055, 39FA1067, 39FA1076, 39FA1108, 39FA1109, 39FA1116, 39FA1121, 39FA1137, 39FA1156, 39FA1195, 39FA1199, 39FA1245, 39FA1310, 39FA1321, 39FA1322, 39FA1412, 39FA1425, 39FA1432, 39FA1483, 39FA1488, 39FA1522, 39FA1523, 39FA1633, 39FA1646, 39FA1699, 39FA1710, 39FA1715, 39FA1728, 39MD460, 39MD682, 39PN768, 39PN803, 39PN1072, 39PN1184, 39PN1333, 39PN1335, 39PN1464, 39PN1477, 39PN1617, 39PN1643, 39PN2603, 39PN2690

*Historic Artifact Scatters:* 39CU882, 39CU1821, 39CU1857, 39CU2828, 39CU2900, 39CU2917, 39CU2943, 39CU2945, 39CU2946, 39CU2947, 39CU2950, 39CU2953, 39CU2954, 39CU3327, 39CU3554, 39CU3742, 39FA27, 39FA123, 39FA124, 39FA654, 39FA658, 39FA804, 39FA851, 39FA1120, 39FA1138, 39FA1196, 39FA1224, 39FA1244, 39FA1259, 39FA1300, 39FA1374, 39FA1375, 39FA1377, 39FA1379, 39FA1380, 39FA1405, 39FA1454, 39FA1494, 39FA1498, 39FA1590, 39FA1591, 39FA1593, 39FA1594, 39FA1596, 39FA1644, 39FA1686, 39FA1689, 39FA1713, 39FA1717, 39FA1724, 39FA1730, 39FA1738, 39FA1740, 39FA1772, 39FA1773, 39FA1775, 39FA1792, 39FA1794, 39MD459, 39PN198, 39PN1036, 39PN1037, 39PN1616, 39PN1630, 39PN1631, 39PN1744, 39PN1779

*Historic Foundations and Depressions:* 39CU930, 39CU1183, 39CU1858, 39CU2824, 39CU2829, 39CU2830, 39CU2831, 39CU2835, 39CU2932, 39CU2934, 39CU2935, 39CU2941, 39CU2974, 39CU3057, 39CU3380, 39CU3556, 39CU3718, 39FA402, 39FA406, 39FA653, 39FA801, 39FA894, 39FA897, 39FA898, 39FA899, 39FA900, 39FA908, 39FA909, 39FA910, 39FA911, 39FA1056, 39FA1075, 39FA1078, 39FA1087, 39FA1111, 39FA1114, 39FA1115, 39FA1117, 39FA1118, 39FA1119, 39FA1125, 39FA1126, 39FA1157, 39FA1222, 39FA1226, 39FA1240, 39FA1242, 39FA1298, 39FA1299, 39FA1329, 39FA1332, 39FA1427, 39FA1440, 39FA1524, 39FA1584, 39FA1586, 39FA1592, 39FA1662, 39FA1663, 39FA1674, 39FA1696, 39FA1716, 39FA1720, 39FA1721, 39FA1726, 39FA1727, 39FA1729, 39FA1739, 39FA1785, 39FA1789, 39FA1790, 39FA1794, 39MD56, 39MD482, 39MD680, 39MD772, 39PN199, 39PN402, 39PN406, 39PN1074, 39PN1098, 39PN1369, 39PN1632, 39PN1633, 39PN1734, 39PN2578, 39PN2647

*Other Historic:* 39CU882 (scatter), 39CU1272 (school), 39CU1825 (burial), 39CU1831 (burial), 39CU1842, (dump), 39CU1940 (dam), 39CU2003 (railroad), 39CU2039 (road), 39CU2076 (road), 39CU2102 (irrigation), 39CU2103 (irrigation), 39CU2104 (irrigation), 39CU2186 (road), 39CU2779 (burial), 39CU2829 (dump, foundation), 39CU2835 (railroad crossing), 39CU2933 (well), 39CU2944 (dam), 39CU2949 (foundation, dam), 39CU2952 (dump), 39CU2956 (alignment, cairns), 39CU2967 (cairn), 39CU3180 (dump), 39CU3379 (well), 39CU3557 (hotel), 39CU3719 (school), 39CU3732 (railroad depot), 39CU3734 (depression, well), 39FA364 (dump), 39FA695 (dump), 39FA895 (depression, dump), 39FA896 (cabin), 39FA902 (dump), 39FA904 (burial), 39FA1066 (dump), 39FA1092 (corral), 39FA1107 (dam), 39FA1139 (monument), 39FA1140 (monument), 39FA1141 (monument), 39FA1142 (monument), 39FA1200 (monument), 39FA1225 (depression, dump), 39FA1265 (dump), 39FA1306 (well), 39FA1372 (dump), 39FA1413 (farm, post office), 39FA1420 (dump), 39FA1424 (dump), 39FA1428 (dump), 39FA1473 (dam), 39FA1474 (oil well), 39FA1481 (gas station and store), 39FA1581 (dump), 39FA1595 (WORKS PROGRESS ADMINISTRATION dam), 39FA1647 (road ramps), 39FA1648 (road ramps), 39FA1678 (dam), 39FA1690 (irrigation), 39FA1695 (dump), 39FA1723 (dump), 39FA1725 (well), 39FA1732 (boat club), 39FA1733 (well), 39FA1734 (sidewalk), 39FA1735 (school), 39FA1736 (depression, well), 39FA1737 (sidewalk), 39FA1743 (school), 39FA1757 (road), 39FA1770 (cairn), 39FA1786 (dump, foundation, depression, well, dump), 39FA1787 (dump), 39FA1788 (dump, well, foundation), 39FA1791 (foundation, well), 39FA1793 (well), 39FA1795 (dump), 39FA2003 (railroad), 39FA2006 (stage trail), 39FA2025 (road), 39FA2039 (stage station), 39FA2041 (irrigation), 39FA2087 (road), 39FA2095 (road), 39FA2115 (road), 39FA2191 (irrigation), 39FA2192 (irrigation), 39FA2193 (irrigation), 39FA2195 (levee), 39FA2196 (levee), 39FA3003 (town of Igloo and munitions storage complex), 39MD310 (airbase defense), 39MD416 (well), 39MD769

(school), 39MD2043/39PN2043 (airbase railroad), 39PN198 (sign posts), 39PN403 (alignment), 39PN406, 39PN917 (dam), 39PN961 (dam), 39PN1187 (oil well), 39PN1370 (bridge), 39PN1384 (radio tower), 39PN1476 (gas station), 39PN1515 (culvert), 39PN1516 (bridge), 39PN1517 (dam), 39PN1618 (dump), 39PN1626 (well), 39PN1738 (dump), 39PN1920A (radio tower), 39PN2003 (railroad), 39PN2081 (road), 39PN2186 (road), 39PN2132 (irrigation), 39PN2169 (irrigation), 39PN2182 (irrigation), 39PN2183 (irrigation), 39PN2189 (irrigation), 39PN2206 (road), 39PN2689 (well), 39PN2756 (dump), 39PN2815 (burial), 39PN2856 (well, dump)

## **Prehistoric and Historic Themes**

*Sacred Sites, Traditional-Use Sites, and Burials.* No confirmed burial sites are recorded in this region with the exception of three historic Euroamerican burials on ranches or homesteads. Two pre-contact burial sites appear in early records. At 39CU3 on Lame Johnny Creek, a medicine-wheel like stone alignment was said to lie near a small cave containing a human skeleton. The landowner removed the skeleton and its current location is not known. The exact location of this site is unknown. Another early report refers to a human skeleton accidentally plowed up by a road crew about one mile north of Provo; the same author was informed of “Indian graves” on Chilson Mountain north of the Cheyenne River. He visited the locale, but found nothing (Buker 1934–35). The cultural importance of the South Fork Cheyenne region is closely linked to that of the Black Hills proper; the reader is referred to the Black Hills section for more information on the numerous sacred sites and traditional-use sites there. Within the South Fork Cheyenne region, Hat Creek and the thermal springs near Hot Springs and Cascade are important cultural places. According to Lakota historian Amos Bad Heart Bull, Hat Creek is called Wapaha Kagapi, Making the Warbonnets Creek. This is where warrior societies made regalia (Bad Heart Bull 1967). Bad Heart Bull shows Mini Kata, or Hot Springs, on his map of sacred places in and near the Black Hills (Bad Heart Bull 1967). Lakota historian James LaPointe says that the thermal springs were associated with the underground nations, who “bred game animals for human consumption and kept perpetual fires ablaze to heat the waters that flow up to the surface, thus keeping the flowers in bloom and the medicinal shrubs growing the year round” (LaPointe 1976:44–45). Cheyenne elders visiting Bear Butte in 1940 made a side trip to visit the hot springs of which the people retained traditions (Odell 1942:144).

Streams in the South Fork Cheyenne region were important thoroughfares between the Black Hills and the Missouri River. The Cheyenne was referred to in both Lakota and Cheyenne as the Good River, a name still retained in the French term for its north fork, the Belle Fourche (Hyde 1968:16; Warren 1922:68; Odell 1942:173). Another name for the Cheyenne River, Red Paint River, referred to the red clays near its banks (Grinnell 1906:39; Odell 1942:173; Moore 1987:155). Cheyenne oral histories refer to that group planting corn along the Cheyenne River (Hyde 1968:16). The area around the confluence of Rapid Creek and the Cheyenne River was also a Cheyenne settlement where they grew crops and held an annual trade rendezvous (Moore 1987:144; Odell 1942:14, 151). The modern name of Rapid Creek is a translation of the Lakota and Cheyenne names referring to the swiftness of its current (Bad Heart Bull 1967:289; Grinnell 1906:19; Petter 1915:921; Ehrensperger 1941:52).

Rapid Creek is one of the settings for the Lakota story of the celestial hero, Falling Star (Niehardt 1991:178; DeMallie 1984:406; LaPointe 1976:76–77). The stream is also remembered as a favorite Lakota winter camp (LaPointe 1976:76–77). Battle Creek is also important in Lakota

tradition. This was another favorite camping place (Linde 1976:10). A tree called the Council Oak marked the location of a gathering place for large gatherings and ceremonies (Black Elk 1987; Linde 1976:10). This landmark tree is still standing and alive. Box Elder Creek retains its Cheyenne and Lakota name. In 1875, Richard I. Dodge observed a “large old Indian trail” on this creek (Dodge 1996:222).

The Black Hills region holds considerable religious importance for Lakota, Cheyenne, Ponca, Kiowa, and other Native American peoples (cf. Sundstrom 1997b). This includes the area designated here as “South Fork Cheyenne.” For more information on places of special importance to these groups, the reader is referred to the Tribal Historic Preservation Offices and cultural offices of the above-named Indian nations, as well as others, such as the Eastern Shoshone, who have formally expressed an interest in historic preservation in the region.

**Rock Art.** The reader is referred to the discussion of the Black Hills region for more information on rock art sites in the South Fork Cheyenne region.

*Rock Art Sites:* 39FA2, 39FA8A, 39FA699, 39FA806, 39FA1303, 39MD55, 39PN108, 39PN438, 39PN439,

**Black Hills Ordnance Depot.** The town of Provo, later known as Igloo, provided housing and services for workers constructing and operating the Black Hills Ordnance Depot during World War II and the Korean Conflict. The town and associated munitions storage facilities have been given the site number 39FA3003. The munitions bunkers, locally known as “igloos,” covered several square miles. They were earth-covered and rounded to be difficult to see from the air. In 1941 Provo was chosen as the site of the Black Hills Ordnance Depot. The town at that time had 20 residents, 6 houses, a store, no electricity and no running water. In 1942 government buildings, workshops, and a utility plant were built by workers who slept in cars and tents. Later that year homes, schools, a community center with swimming pool, and a hospital were built. The first ammunition arrived in 1942, and 500 families arrived in 1943. Private businesses allowed to operate at the depot included a store, gas station, a restaurant, a bowling alley and a barber shop. The population soon exceeded 4000. The community came to be known as Igloo. By 1950 only 700 people remained. In 1956 the population grew back to 2500 because of the Korean War. In 1964 the government appropriations and cutbacks caused the community to die again. Virtually no archaeological work has been done at this unique site.

**Corporate Ranching and Irrigation Projects.** This area was used as a northern range for large internationally-funded cattle operations based in Texas. Some of these corporations set up ranches in the area, including the TOT, the S&G, and the Fleur des Lis (Lee and Williams 1964; Schatz 1961). Later entrepreneurs, including Ward Stanley of Hot Springs, built large-scale irrigation projects to supply water for truck farms and orchards (Fall River County Historical Society 1976). Many archaeological sites related to these enterprises have been recorded in the region; however, few have been studied in depth.

## **Archaeological Potential**

The archaeological potential of the South Fork Cheyenne region is very high. The Cheyenne and its tributaries have created well preserved Pleistocene and Holocene terraces (Hughes 1950;

Plumley 1948; Kempton 1980). Archaeological deposits are sealed within some of these terraces. Elsewhere alluvial fans have likewise served to protect archaeological deposits. The Cheyenne River and associated resources have attracted people to the region from Paleoindian times on. This region will be important in tracing the use of western South Dakota by Plains Village tradition groups, as well as in understanding Paleoindian adaptations to an environment intermediate between plains and uplands. In historic times, the area has been put to both typical uses, such as cattle ranching, and to more creative enterprises, such as the munitions storage facility at Igloo, the irrigation projects along the course of the Cheyenne River, and recreation at Angostura Reservoir. Some portions of the region have been quite heavily disturbed by construction and housing, while others are close to their precontact state of preservation.

## **Management Considerations**

The South Fork Cheyenne region includes large tracts of public and private land, mostly used for cattle grazing. Relatively to other regions, sites in the South Fork Cheyenne region are well documented and protected. Planned mineral resource extraction activities may present a threat to continued preservation of some sites.

## **Sites Listed in the National Register of Historic Places**

The only sites in the South Fork Cheyenne region listed on the National Register are rock art sites included in a multiple-property listing of southern Black Hills rock art sites: 39PN438 and 39PN439.

## **Region 6: Belle Fourche**

### **Setting**

The Belle Fourche Region consists of the Belle Fourche drainage basin north of the Hogback Ridge of the Black Hills. This region encompasses southern Butte County, with the exception of its extreme southwestern corner, and west-central Meade County. Portions of tributary streams that lie within the Black Hills are excluded, including most of Whitewood and Spearfish creeks and the upper Redwater River. Physiographically, the region is part of the Pierre Hills Section of the Missouri Plateau of the Great Plains (Rothrock 1943). The massive, homogenous shale beds have eroded into low, rounded hills. The area is characterized by rolling grasslands broken by an occasional high isolated butte where hard caprock has prevented erosion of the underlying shale. Short and mid-grasses and forbs, pricklypear cactus, and sedges dominate the area. The northeastern portion of Bear Butte lies within the Belle Fourche archaeological region. Unlike other buttes in the region, Bear Butte is of igneous origin and would more properly be called a mountain. It is the easternmost of a series of igneous mountains extending across the northern end of the Black Hills. Bear Butte lies just outside the northeastern Black Hills and forms a striking landmark. Bear Butte is more or less heavily forested on the top and gentler slopes, depending on the timing of major fires that periodically remove much of its tree cover. The steep western and southern slopes are nearly free of trees and shrubs. Cottonwood, willow, and shrubs grow along the floodplains of streams throughout the region.

The Belle Fourche River and its tributaries are deeply entrenched throughout their courses. Upstream and downstream of the Belle Fourche archaeological region, the river has three paired terraces (Leopold and Miller 1954; Brackenridge and McCready 1987). These are hypothesized to date to the Holocene, but no direct dates are available for the region. The Belle Fourche River drains the northern Black Hills, as well as the area included in the Belle Fourche archaeological region, and thus has a permanent flow.



*Figure 138. View of typical Belle Fourche region landscape (L. Sundstrom photo).*

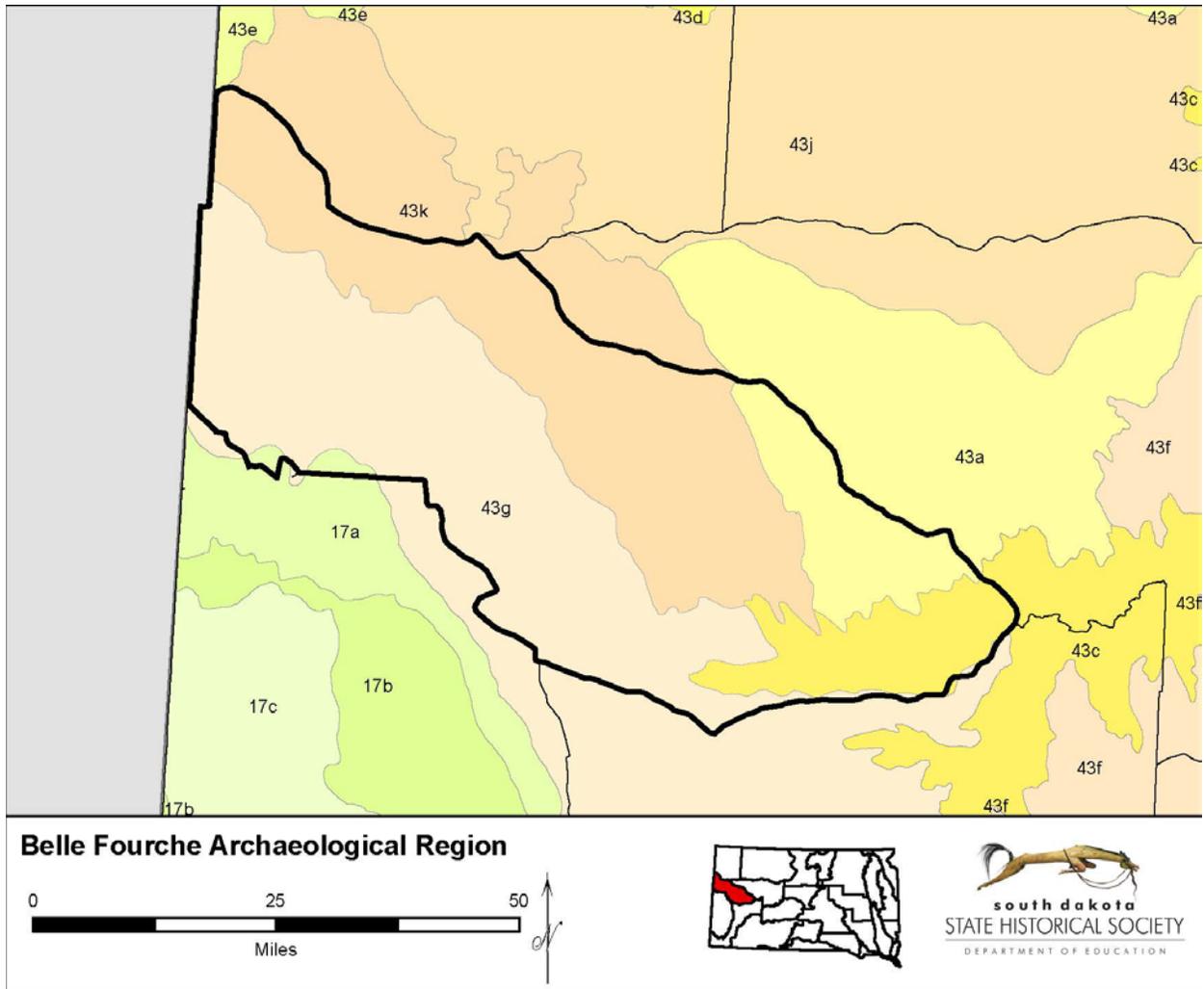


Figure 139. Ecoregions of the Belle Fourche archaeological region.

43: Northwestern Great Plains

43a: Missouri Plateau, unglaciated moderately dissected level to rolling plains with isolated sandstone buttes.

43g: Semi-arid Pierre Shale Plains, unglaciated, undulating to rolling plains; steep-sided, incised stream channels.

## Previous Archaeological Investigations

Archaeological research in the Belle Fourche region began with descriptions of a rock art site, 39MD1 (also listed under 39MD20), lying in a deep arroyo in the eastern foothills of the Black Hills (Over 1941). The rimrock above the arroyo contained a stone circle and a scatter of chipped stone artifacts.

World War II and post-war reservoir construction along the Missouri River interrupted research efforts in western South Dakota until 1960. That year, Wesley R. Hurt directed the Sturgis Archaeological Project, a reconnaissance survey of the interstate highway right-of-way from Tilford to the Wyoming state line (Gant and Hurt 1965; Hurt 1960a). This survey identified 35

archaeological sites in the northern Red Valley. Unfortunately, a comprehensive report was never published and the field notes have been lost. A part of the Sturgis Archaeological Project included test excavations at the Gant site (39MD9), located northeast of Sturgis. The Gant site provided information critical to an understanding of the Middle Archaic period of the Northwestern Plains (Gant and Hurt 1965; Hurt 1960a, 1960b, 1961).

A 1977 field school survey on private lands near Bear Butte located ten sites (Cotterill 1977). Three excavation projects in the region also relied on volunteers or field school students for crew members. Limited test excavations at the stone circle at 39MD1/39MD20 in 1972 recovered a few chipped stone artifacts but did not clearly establish any link between that feature and the rock art panels below (Archaeological Research Center records). Another excavation at the Matz site, 39MD116, uncovered a variety of artifacts and a buried soil or charcoal deposit dated to the early Middle Archaic period (Archaeological Research Center records). Excavations at the Smiley-Evans site (39BU2) in the late 1970s were more productive (L. Alex 1979c, 1989; N. Chevance 1984). This site is a fortified village or redoubt probably used by Middle Missouri villagers during seasonal trips west to hunt and preserve bison meat for export back to their home settlement.

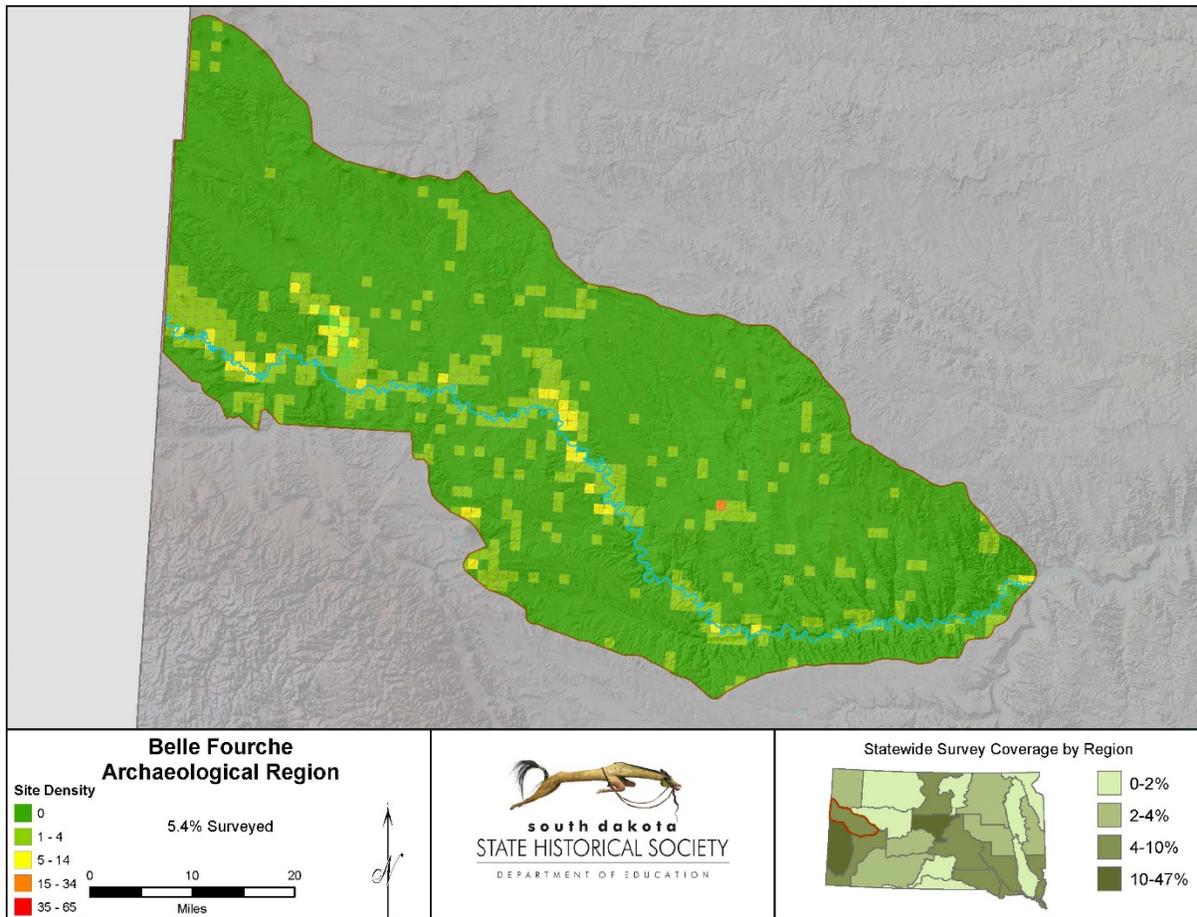


Figure 140. Density of known archaeological sites, Belle Fourche archaeological region.

In 1984, the Archaeological Research Center began an intensive inventory of the Belle Fourche River, as well as an inspection of private collections in Butte County. This project continued for five years, focusing on private land (Keller and Keller 1984; Keller, Keller and Miller 1985; Kurtz and Keller 1986; Keller and Kurtz 1987; Keller and Lippincott 1989; Lippincott 1992). Valleys, terraces, and arroyos adjacent to drainages were surveyed most closely, but some upland areas were sampled, as well. Data collected during the Belle Fourche River survey provided a base for future investigations in the area. Those have been largely limited to small-scale surveys for gravel pits, bridge replacements, pipe lines, transmission lines and towers, irrigation ditches, an oil well pad, a sewage lagoon system, a National Guard training area, and a mine tailings cleanup project. More extensive surveys covered highway right-of-ways (Wardlow 1988; Kurtz 1989; Gilbert 2001; T. Davis 2003; Byrne 2007), bentonite mining areas (Stilphen 1982; Savini 1994, 1997, 1998), uranium exploration areas (Haug 1978a; Lazio 1979c), federal land exchanges (J. Taylor 1991; Long 2000), Bureau of Land Management parcels (Tillett 1988; Thompson and Greiser 1999; Buechler 2006d), Bureau of Reclamation reservoir and irrigation areas (Del Bene 1989; Swenson 1989; Gregg and Driscoll 1992; Gregg *et al.* 1991; McCormick and Kordecki 2002), a regional water project (Artz 1980), a cleanup of toxic mine spoils (Buechler 1991a), and telecommunications cable corridors (Buechler 1997a, 1999a, 2002b, 2006a; Miller and Ranney 1997). The Belle Fourche Reservoir Survey projects led to test excavation of several sites (Toom and Kordecki 2002).

## Historic Contexts

***Paleoindian.*** Evidence for early Paleoindian use of the area is limited to a single, fragmentary Folsom projectile point found on the divide between East Elm and Hay Creeks in Meade County (39MD27). No other artifacts were found there. Late Paleoindian sites are also rare in this region. Site 39BU69 contained a projectile point fragment with the parallel-oblique flaking and ground basal edges typical of Angostura and other terminal Paleoindian complexes (Keller and Keller 1984:61–63). This artifact was possibly associated with a series of hearths. Another probable Angostura point fragment was collected from 39BU107, a multiple-component site on private land (Keller and Keller 1984:84–90). These sites have not been excavated. At 39BU244, a possible late Paleoindian projectile point was found in a shallow, mixed deposit along with artifacts dating to all three Archaic periods (Toom and Kordecki 2002).

***Early Archaic.*** Very few Early Archaic sites are reported from the region. Site 39MD196 contained only one large, side-notched projectile point base and one flake. The site is on a terrace overlooking the Belle Fourche River. A shallowly side-notched projectile point was found on the surface at 39BU56, but no other artifacts were present there. This somewhat amorphous specimen has attributes consistent with either an Early Archaic or Middle Archaic affiliation (Lippincott 1992); however, Hanenberger (2005) places it in the Early Archaic period. Equally ambiguous is a report of an Early Archaic projectile point from a private collection made near a historic foundation at 39BU186. A more secure Early Archaic component was found at 39BU244. This multiple-component site contained Early Archaic Hawken and Middle Archaic McKean projectile points, as well as Late Archaic Pelican Lake and Besant projectile points. Unfortunately, deposition was very shallow, and the few pieces of bone, fire-cracked rock, and chipped stone debris found in the test unit could not be dated (Toom and Kordecki 2002). Another Hawken projectile point was found on the surface of 39BU363; however, no other artifacts or features were present.

***Middle Archaic.*** The Belle Fourche region contains many Middle Archaic sites, but only three have been test excavated. The Gant site, 39MD9, contained a dense layer of fire-cracked rock with occasional hearths (Gant and Hurt 1965). McKean lanceolate, Duncan, Hanna, and Oxbow projectile points were found along with a variety of chipped stone knives, scrapers, drills, and spokeshaves. The site also contained groundstone tools such as manos, metates, and hammerstones. The site was interpreted as a seasonal station for plant-food processing and preparation of atlatl darts for hunting. Radiocarbon dates of 4130, 3620, and 3650 BP were obtained, suggesting use of the site over a period of half a millennium; however, little horizontal separation of components was noted. It is not clear whether the site contained more than one component.

The Matz site, 39MD116, was test excavated by the South Dakota Archaeological Society in 1987 (notes on file, Archaeological Research Center). The site was approximately 1.5 meters deep. A band of dark sediment (a buried soil or charcoal deposit) occurred at 46 cm below surface. A radiocarbon sample from 122–132 cm below surface yielded a date of 5250 BP. Artifacts included fire-cracked rock, flakes, scrapers, and bifaces but no artifacts diagnostic of particular cultural affiliations or periods.

Site 39BU244 was a very shallow site with artifacts from the Hawken, McKean, Pelican Lake, and Besant complexes, as well as a possible late Paleoindian projectile point. The site lacked adequate deposition to permit researchers to separate materials from the various periods (Toom and Kordecki 2002).

Middle Archaic projectile points have been found on the surface of many sites in the region: 39BU57, 39BU64, 39BU83, 39BU100, 39BU107, 39BU109, 39BU111, 39BU134, 39BU203, 39BU220, 39BU223, 39BU224, 39BU356, 39BU357, 39BU386, and 39MD317. These include McKean, Duncan, Hanna, and Oxbow types, as well as a broadly corner-notched type. Most were found within chipped stone artifact scatters, but some were isolated finds. Three of the sites contained hearths, suggesting they were used as camps (39BU64, 39BU83, 39BU100). None of these sites have been excavated, so knowledge of Middle Archaic use of the region is very limited.

***Late Archaic/Plains Woodland.*** Two Yonkee projectile points have been found in the region (39BU82 and 39BU154) indicating that people were there during the Middle to Late Archaic transition. Neither site has been excavated: one was an isolated find and the other part of a small chipped stone artifact scatter.

Late Archaic projectile points were found on the surface of 29 other sites in the region. Eight of these were isolated finds, and eight were part of small chipped stone artifact scatters. Another three occurred along with chipped stone artifacts and bone. Site 39BU64 is a large artifact scatter on a terrace of the Belle Fourche River. It contained Oxbow and Late Archaic projectile points, along with several hearths exposed in a cutbank. Another large, multiple-component artifact scatter, 39BU107, reportedly contained portions of three Pelican Lake projectile points, as well as Late Paleoindian, Middle Archaic, Late Prehistoric, and Protohistoric artifacts (Keller and Keller 1984:84–90). Site 39BU134 was a ridge top site with a cairn at one end and an artifact scatter at the other end containing Middle Archaic Duncan and Late Archaic Pelican Lake projectile points (Keller and Keller 1984:102–104). Site 39BU203, located on a ridge overlooking Owl Creek, contained Middle Archaic Oxbow and Duncan points, as well as a Pelican Lake point from the

Late Archaic (Keller *et al.* 1985:72–73). Although 39BU242 contained both a Pelican Lake point and fire-cracked rock, these artifacts were displaced by wave erosion from the Belle Fourche Reservoir and do not indicate an intact occupation site (Toom and Kordecki 2002).

Site 39BU244 had Late Archaic (Pelican Lake and Besant) and late Paleoindian through Middle Archaic projectile points in a shallow deposit of chipped stone artifacts, bone, and fire-cracked rock. The site lacked sufficient deposition to provide useful information (Toom and Kordecki 2002). Another site disturbed by wave erosion on Belle Fourche Reservoir was 39BU246. This site had Besant and Late Prehistoric projectile points, chipped stone tools and debris, and two metates within a shallow deposit (Toom and Kordecki 2002). A surface site, 39BU323, contained a series of cairns which may represent an old drive-line, several tools, many flakes, and two Pelican Lake projectile points. The site had been disturbed by farming and has not been test excavated. Site 39MD118 at the base of Bear Butte had a projectile point fragment of probable Late Archaic age (Haug 1982a:8–11); test excavations and grading at the site revealed two hearths and several flakes, as well as a few glass beads, indicating later use.

No Plains Woodland ceramics or features are known from the Belle Fourche archaeological region.

**Late Prehistoric.** About the same number of Late Prehistoric sites occur in the region as Late Archaic sites. There are 26 such sites, not including those categorized as Plains Village. Six of these were lone projectile points; another 15 had Late Prehistoric projectile points within chipped stone artifact scatters. At 39BU157, a Late Prehistoric projectile point occurred with chipped stone artifacts and fire-cracked rock. A stone circle site, 39BU161, contained a Late Prehistoric point and 71 stone circle features, many of them with a double course of stones. A site exposed on the shore of Belle Fourche Reservoir, 39BU367, had chipped stone tools, chipping debris and bone fragments along with a Late Prehistoric projectile point. The remaining three sites had artifacts from more than one period. Site 39BU12 was a Late Prehistoric artifact scatter containing a Protohistoric copper bead. Another artifact scatter, 39BU64, contained Middle Archaic and Late Prehistoric projectile points. Site 39BU107, discussed above, reportedly contained Paleoindian, Middle Archaic, Late Archaic, and Late Prehistoric projectile points. Both Late Archaic Besant and Late Prehistoric projectile points were found at 39BU246. Finally, site 39MD255 was a double-grooved ax made of basalt found on a terrace above the Belle Fourche River (Keller and Kurtz 1987:85).

A site overlooking a swampy area (39BU12) had two artifact concentrations. The first area had about 20 artifacts including flakes from making or repairing bifacial knives or projectiles and a broken Badlands plate chalcedony knife. The second area had several unfinished chipped stone artifacts and a small amount of chipping debris. After the surface artifacts were mapped and collected, a road grader stripped off the sod to expose any features. A few more artifacts were found under the sod, but no features were present (Archaeological Research Center records). The site was assigned to the Late Prehistoric and Protohistoric periods based on a small, unfinished arrow point and a copper bead, both found on the surface (Haug 1982a).

The Willow Creek site, 39BU213, is a multiple-component site exposed in a bend of Willow Creek. A cache pit exposed in the creek bank was excavated. It contained chipped stone flakes and

debris, rabbit and possible fish bones, snail and mussel shell, and fire-cracked rock. Charcoal from the bottom of the cache pit dated to 1120 BP (Keller *et al.* 1985:138–149).

**Plains Village.** Several sites in the Belle Fourche region show similarities in artifacts or features to Plains Village period sites along the Missouri River. The Smiley-Evans site, 39BU2, is a shallow, fortified site lying on a terrace spur. A ditch and a possible palisade protected the site from attack. The site contained large amounts of bison bone and stones used for cooking. Ceramics from the site most closely resemble early Plains Village period materials associated with Initial Middle Missouri sites (L. Alex 1979c, 1989; N. Chevance 1984). Eleven radiocarbon dates averaged to 950 BP, consistent with an Initial Middle Missouri connection; however, the nature of this hypothesized link is unclear.

Another possible village, 39BU217, is likewise situated on a terrace overlooking the Belle Fourche River (Kurtz and Keller 1986:100–105). The surface of this site contained a dense scatter of artifacts, including ceramics, chipped stone tools and chipping debris, and bone. The pottery is most similar to Riggs Plain ware from the Extended Middle Missouri Tradition. Fragments of burned daub indicate that permanent houses had been constructed at the site. Arrowheads included side-notched and unnotched triangular types. The site also contained simple knives made of Badlands plate chalcedony and scrapers and biface tools made of many different kinds of stone. None of the bone could be identified; some was burned, suggesting food remains. Two dentalium shell beads were found near the probable house feature. The site has not been excavated.

Another ceramic-bearing site, the Huston-Fox site (39MD133) was test-excavated in 1984. This site is located on a low terrace overlooking the Belle Fourche River. It contained large amounts of broken animal bone, chipped stone tools, and ceramics. Very limited excavation revealed a hearth and a cache pit. A single radiocarbon sample dated the site to 780±70 BP. Most of the ceramics bore no resemblance to types defined for the Middle Missouri area, but two sherds were vaguely similar to Riggs Ware from the Extended Variant of the Middle Missouri Tradition (Archaeological Research Center files).

Other sites are identified as Plains Village because they contain ceramics. The Gruble site, 39MD3, is near the Smiley-Evans site. Among other artifacts on its surface were plain, grit-tempered sherds from the body of a pottery vessel. Sherds of a thin, grit-tempered vessel with a smoothed-over simple-stamped exterior were found along with chipped stone tool debris on a river terrace at 39MD205. Another river terrace site, 39MD207, contained a historic depression and a scatter of prehistoric artifacts. The later included plain and check-stamped grit-tempered pottery sherds, a chert arrow point, knives of Badlands plate chalcedony, a chert biface and scraper, and chipped stone debris. Animal bone included bison and pronghorn (Kurtz and Keller 1986:48–50). Based on the pottery, this site is linked to the Coalescent Tradition of the Middle Missouri River. A dense artifact scatter at 39MD257 included a check-stamped sherd and a portion of an arrow point. Other artifacts were chipped stone flakes and debris. Other surface sites containing ceramics are 39MD261 and 39MD267.

**Protohistoric.** Four sites overlooking the Belle Fourche River contained glass beads typical of the Protohistoric period (39BU95, 39BU96, 39BU105, and 39BU107). Three of these consisted of beads in anthills; the other is a multiple-component site from which the landowner has collected beads as well as a variety of projectile points. Site 39BU12, described above, had a copper bead

on the surface, together with chipped stone artifacts and a Late Prehistoric projectile point. At 39BU117, a metal arrow point was found on a high stream terrace along with chipped stone artifacts. Site 39MD118 contained a few glass beads along with Late Archaic materials (Haug 1982a); a single bead occurred at 39MD197. A stone circle site, 39BU375, contained a glass bead, as well as bone and chipped stone artifacts. A catlinite pipe bowl of probable protohistoric Lakota or Cheyenne origin was recorded as 39MD271.

**Historic.** The Belle Fourche archaeological region includes the abandoned homesteads typical of western South Dakota but also contains more distinctive sets of historic remains. The farmstead sites include those of early settlers along the river bottom (including 39BU189, 39BU190, 39BU192, and 39BU200) and a second, larger set from the homestead boom of the early twentieth century (Lippincott 1992:40). Other historic-era sites include stock dams, dumps, and depressions representing homestead shacks, farmhouses, or outbuildings. The remains of two schools (39MD591 and 39MD620), a post office (39MD354), and a townsite (39MD590) have been recorded, as well. A few historic Euroamerican burials have been recorded. Remains of roads and railroads round out the more typical historic period sites.

The Deadwood-Bismarck trail is associated with military actions of the 1870s and the Black Hills gold rush of 1876–76. A portion of it passes through the Belle Fourche archaeological district (see 39MD2054).

One unique set of historic sites resulted from a large irrigation project undertaken between 1904 and 1910. This ambitious project included the Orman Dam, camps associated with its construction, and canals and ditches by which water was diverted to fields. Among the more successful crops attempted by the irrigators was sugar beet. Sites associated with this and other irrigation projects include: 39BU283 and 39BU284, construction camps; 39BU188, a gravel quarry used during dam construction; 39BU191, a rail line used to haul gravel to the dam construction site; 39BU248, an irrigation headgate and flume; 39BU410, the remains of a structure built to house sugar beet workers; 39BU410, a sugar beet dump; 39BU93, an irrigation ditch; and 39BU2108, the Redwater Canal.

Other agriculture-related sites include a series of sheep-herder camps and cairns (39BU32, 39BU33, 39BU365, 39BU378, and 39BU379). Towerlike cairns made of stacked sandstone slabs, referred to as “stone johnnies,” dot the high buttes in the sheep country of northwestern South Dakota (South Dakota Writers Project 1938). They served to mark convenient passes up and down steep hills and simply to pass the time. A stone alignment in the form of a Latin cross (39BU141) may also have been a sheep-herder’s way of passing the time (Keller and Keller 1984:154). A stock pen was recorded at 39BU319.

Another distinctive set of sites relates to pre- and post- World War II federal projects. These include features at Bear Butte Lake recorded as 39MD347. Crews working under the South Dakota Works Progress Administration constructed a pavilion, bathhouse, swimming pool, and spillway at the lake in 1938 (Buechler 1990). Another federal relief effort of the pre-war era was a 1934 Civilian Conservation Corps camp at Belle Fourche Reservoir known as Camp Fruitdale. The young men employed there worked on maintenance of irrigation facilities for the Belle Fourche Irrigation District under the auspices of the US Bureau of Reclamation. The Civilian Conservation Corps camp closed in 1942. In 1944, the camp was reopened as a prisoner of war camp. It closed

in 1946 when the prisoners were repatriated at the end of the war (Kangas 2005; Archaeological Research Center records). The foundations of several structures and one standing structure, an incinerator, are still present there.

None of the historic-era sites in this region have been excavated.

**Summary.** With few sites excavated and many lacking any time-diagnostic artifacts, pre-contact human history in the Belle Fourche archaeological region remains largely unknown. A few patterns emerge. Very few Paleoindian and Early Archaic artifacts have been found, suggesting that very ancient sites have been either obliterated by erosion or deeply buried. The span from Middle Archaic on is better represented. Between 20 and 30 sites are assigned to the Middle Archaic, Late Archaic, and combined Late Prehistoric, Plains Village, and Protohistoric periods. This suggests that whatever cycle of erosion and deposition has obscured the earlier sites ended around the time of the Early to Middle Archaic transition. Essentially nothing can be said of the Paleoindian and Early Archaic periods in the region, other than that some people were present there during that interval. The very limited information from excavated Middle Archaic sites in the region indicates a pattern of rather intense use of a wide variety of the area's resources during the period. It appears that resource processing sites, such as the Gant site, were revisited either seasonally or when resource availability drew people to them. The Late Archaic sites in the Belle Fourche region, as elsewhere in western South Dakota, indicate both broad-spectrum hunting and gathering and more specialized bison hunting. Similar to the other western regions, the Late Archaic of the Belle Fourche region includes three named complexes (Yonkee, Pelican Lake and Besant), as well as less well defined archaeological expressions. The presence of Yonkee projectile points at two sites extends the distribution of this complex eastward from its core region in northeastern Wyoming and the Black Hills. It appears that Late Archaic use of the area was heavy in comparison to earlier and later periods. A clearer picture of Late Archaic life in the region awaits excavation of sites.

Late Prehistoric use of the area appears to split into two patterns, perhaps reflecting ethnic differences. A pattern of small temporary camps is widespread throughout the region. Sites linked to this pattern seem more ephemeral than those of the Archaic era; however, the Willow Creek site is similar to many Archaic sites in containing rabbit bone rather than larger game. The other pattern seems to indicate establishment of Plains Village settlements far to the west of the Missouri River. Three sites—Smiley-Evans, Huston-Fox, and BU217—appear to be settlements that were occupied for at least a few months at a time. Whether these are the seasonal hunting camps of the Missouri River villagers, used year after year for the summer and fall bison hunt, or outpost villages that represent expansion beyond the river, is not yet known. A few sites with glass beads and other trade goods demonstrate Protohistoric use of the area but supply no detailed information.

Historic period remains combine the usual homestead sites with more unusual types of sites, including those related to Fort Meade, the Belle Fourche irrigation project, sheep-raising, federal relief efforts during the Dust Bowl era, and management of prisoners of war during World War II. The Belle Fourche region followed the general western South Dakota pattern of moving from corporate cattle ranching on the open range to establishment of homesteads and farming communities and then to depopulation and the current pattern of family-based ranching. Irrigation farming of sugar beets and other crops remains important to the region's economy. A long-term

military presence at Fort Meade threw its own distinctive light on the region as did the ambitious irrigation projects of the early twentieth century.

## **Sites by Period**

*Paleoindian:* 39BU69 (Angostura?), 39BU107 (Angostura), 39BU244 (late Paleoindian), 39MD27 (Folsom)

*Early Archaic:* 39BU56?, 39BU186, 39BU244 (Hawken), 39BU363 (Hawken), 39MD196

*Middle Archaic:* 39BU64 (Oxbow), 39BU82 (Yonkee), 39BU83 (Oxbow), 39BU100 (McKean), 39BU107 (McKean), 39BU109 (Hanna), 39BU111 (Oxbow), 39BU134, 39BU154 (Yonkee), 39BU203 (Oxbow, McKean), 39BU220 (McKean), 39BU223 (McKean), 39BU224 (Hanna), 39BU242, 39BU244 (Duncan), 39BU356 (McKean), 39BU357 (Hanna), 39BU386 (McKean), 39MD9 (Oxbow, McKean, Duncan, Hanna), 39MD116, 39MD317 (Hanna)

*Late Archaic:* 39BU39, 39BU64, 39BU84, 39BU88, 39BU106, 39BU107 (Pelican Lake), 39BU108 (Besant), 39BU157, 39BU184 (Besant), 39BU203 (Pelican Lake), 39BU213, 39BU222 (Pelican Lake), 39BU236 (Besant), 39BU242 (Pelican Lake), 39BU244 (Pelican Lake, Besant), 39BU246 (Besant), 39BU256, 39BU278 (Pelican Lake), 39BU323 (Pelican Lake), 39BU326 (Pelican Lake), 39BU331, 39BU338, 39BU342, 39BU345, 39BU348, 39BU405 (Pelican Lake), 39BU406 (Pelican Lake), 39MD118, 39MD575

*Unspecified Archaic:* 39BU227, 39BU287, 39BU337, 39BU358, 39BU398, 39BU400

*Late Prehistoric:* 39BU12, 39BU64, 39BU107, 39BU112, 39BU157, 39BU161, 39BU213, 39BU221, 39BU246, 39BU258, 39BU334, 39BU367, 39BU425 (Avonlea), 39MD242, 39MD245, 39MD255, 39MD257, 39MD261, 39MD267, 39MD314

*Plains Village:* 39BU2, 39BU217, 39MD3, 39MD133, 39MD205, 39MD207, 39MD257, 39MD267, 39MD387

*Protohistoric:* 39BU12, 39BU95, 39BU96, 39BU105, 39BU107, 39BU117, 39BU375, 39MD118, 39MD197, 39MD271

## **Historic**

*Artifact scatter:* 39BU23, 39BU237, 39BU240, 39BU249, 39BU279, 39BU281, 39BU282, 39BU311, 39BU328, 39MD45, 39MD207, 39MD352, 39MD94, 39MD105, 39MD207, 39MD527, 39MD529, 39MD550, 39MD555, 39MD557, 39MD558, 39MD594, 39MD757

*Farmstead:* 39BU54, 39BU82, 39BU86, 39BU328, 39BU371, 39BU394, 49BU409, 39MD243, 39MD266, 39MD276, 39MD282, 39MD286, 39MD288, 39MD340, 39MD352, 39MD381, 39MD468, 39MD500, 39MD530, 39MD581, 39MD583, 39MD585, 39MD586, 39MD587, 39MD588, 39MD589, 39MD592, 39MD593, 39MD660

*Foundation:* 39BU51, 39BU115, 39BU186, 39BU326, 39BU392, 39BU404, 39BU428, 39MD95, 39MD326

*Depression:* 39BU98, 39BU114, 39BU124, 39BU128, 39BU187, 39BU189, 39BU190, 39BU192, 39BU199, 39BU200, 39BU210, 39BU399, 39BU432, 39MD175, 39MD178, 39MD188, 39MD191, 39MD194, 39MD198, 39MD200, 39MD201, 39MD254, 39MD280, 39MD327, 39MD328, 39MD458

*Cabin:* 39BU22, 39BU62, 39BU72

*Dump:* 39BU280, 39BU294, 39BU305, 39BU330, 39BU404, 39MD132

*Dam:* 39MD533, 39MD535, 39MD553, 39MD561

*Burial:* 39BU3, 39MD253, 39MD349

*Other:* 39BU7 (benchmark), 39BU32 (stone johnny), 39BU33 (stone johnny), 39BU116 (gravel quarry), 39BU141 (stone alignment), 39BU188 (gravel quarry), 39BU191 (road), 39BU248 (irrigation features), 39BU252 (cartridge), 39BU254 (can), 39BU260 (wheels), 39BU265 (lead slug), 39BU268 (bottle), 39BU276 (cartridge), 39BU283 (construction camp), 39BU284 (construction camp), 39BU319 (stock pen), 39BU365 (dump or sheep camp), 39BU378 (sheep camp), 39BU379 (sheep camp), 39BU341 (Fruitdale Civilian Conservation Corps camp; POW camp), 39BU401 (agricultural worker housing), 39BU408 (inscriptions), 39BU410 (beet dump), 39BU2093 (irrigation ditch), 39BU2108 (canal), 39BU2190 (road), 39MD41 (firing range), 39MD97 (levee), 39MD347 (Bear Butte Lake facilities), 39MD354 (post office), 39MD524 (stone alignment), 39MD590 (townsite), 39MD591 (school), 39MD620 (school), 39MD2054 (Bismarck-Deadwood Trail)

## **Prehistoric and Historic Themes**

*Sacred Sites, Traditional-Use Sites, and Burials.* The Belle Fourche River region contained one Native American burial site, referred to as 39BU3, the Vale Burial. W.H. Over excavated the remains of a single individual at about four feet from the surface. It had been buried with wristlets of bighorn sheep teeth, shell earrings, and a bone drinking tube. Some red ocher was noted, as well. The current location of these remains is unknown. Two Euroamerican burial sites are recorded for this area: one an individual grave and one a family cemetery. Neither has been excavated. At another site, scattered human bone was found in a creek. Its age and cultural affiliation are not known.

By far the most prominent sacred sites in the Belle Fourche River region are Bear Butte and Bear Butte Lake. Bear Butte is the principal sacred site of the Cheyennes but is important in the religious beliefs and traditions of many Plains Indian nations, including the Lakota, Mandan, Arapaho, and Crow (Sundstrom 1997b; Turchen 1988:134). Origin stories of these five nations take place at Bear Butte, and it has been a place of pilgrimage for them for centuries. Bear Butte Lake was the source of the sacred bundles of the Kiowa and Kiowa-Apache (Naishan Dene) peoples. This important landmark was a rendezvous point where bands and nations met for summer ceremonies and councils (Buechel and Manhart 1988:610–611; Hyde 1937:82; Odell 1942:143–44; South Dakota Writers' Project 1941:110–112). Bear Butte was, and is, a place reserved for ceremonies and the vision quest (Leman 1987:103–106; Bordeaux 1929:186; Herman n.d.:17; Bourke n.d. 26:44; E. Deloria n.d.; Densmore 1918:256; Hyde 1968:242; Kadlecek and Kadlecek

1981:146; LaPointe 1976:40–41; Mails 1979:154; South Dakota Writers' Project 1941:110–112). It is associated in particular with the Sun Dance and other ceremonies of renewal and commemoration of the dead (Bourke n.d. 26:44; Odell 1972:21–32; E. Deloria n.d.; Schlesier 1987; Stands in Timber and Liberty 1967:88). It was also a source for sacred paints (Grinnell 1926:18; Powell 1969:19).

(For Cheyenne beliefs, see Leman 1987:17–20, 101; Herman n.d.:17; Bourke n.d.:1555–56, Vol. 26:44; Clark 1982:104; Grinnell 1907:189, 1908:269–320, 1923:18, 201, 263, 368; Hyde 1968:53, 242; Mails 1979:154; Moore 1987:166; Odell 1942:9, 143–144, 193; Parks and Wedel 1985:169; Powell 1969:18–19; Price n.d.:21–23; Schlesier 1987; South Dakota Writers' Project 1941:110–112; Stands in Timber and Liberty 1967:35–43, 70, 88–90, 106; Tallbull *et al.* 1996:125. For Lakota: Bordeaux 1929:186; Herman n.d.:17; Bourke n.d.:1555–56; E. Deloria n.d.; J. Dorsey 1894:448–449; Kadlecek and Kadlecek 1981:146; LaPointe 1976:38, 40–41; Mails 1979:154; Neihardt 1991:178; Odell 1942:20–32. For Arapaho: Trenholm 1970:80. For Mandan: Rosen 1895:54. For Kiowa: Mooney 1898:426; Nye 1962:49. For Kiowa-Apache: McAllister 1965:215, 1937:162.)

The Belle Fourche (Beautiful Fork) River takes its name from the Lakota term for the Cheyenne River: *Wakpa wáste*, good or beautiful river (Libby 1998:165; Warren 1922:68). This river surrounds the Black Hills from the east like two embracing arms. The Cheyenne River was called the Beautiful River in Lakota, but a term meaning bear lodge river was used for the northern (Belle Fourche) branch (Bourke n.d. 1555–56; Odell 1942:183). Cheyennes also used the name “bear lodge river” for the Belle (Hyde 1968:194). They referred to the mainstem as the beautiful river or the red paint river (Hyde 1968:16, 194; Grinnell 1906:20; Odell 1942:173; Moore 1987:155). The Belle Fourche River at its confluence with the Redwater was the location of a Cheyenne ceremonial antelope trap (Stands in Timber and Liberty 1969:84–85; Schwartz 1988). The Cheyennes knew the Belle Fourche River as a place where buffalo were abundant and a place to camp for winter (Bourke n.d. 1555–56; Hyde 1968:194). The old Kiowa name for the Belle Fourche, Baking River or Baking Paint River, refers to it as a source of ocher (J. Harrington 1939:170). The town of Sundance, Wyoming; Sun Dance Mountain; and Sun Dance Creek all refer to use of the upper Belle Fourche River Valley for the Sun Dance ceremony and summer encampment (Dodge 1996:211; DeMallie 1984:366; Moore 1987:32; Price n.d.: 42–43; Odell 1942:29; Urbanek 1974; Stand in Timber and Liberty 1967:23).

Tributaries of the Cheyenne River were named for their natural resources. Redwater Creek was called Tule Creek in Cheyenne (Petter 1915:921). Spearfish Creek was called by the same term in Lakota (Bordeaux 1929:82). The Kiowa name for the Black Hills, Black Rock Mountains, referred to the laccoliths of the northern uplift, including the sacred mountains of Bear Butte and Devils Tower (J. Harrington 1939:168). The Kiowa-Apache sacred mountain referred to as Black Rock probably also refers to Bear Butte; their sacred bundles originated at the lake at the foot of this mountain (McAllister 1965:215; Sundstrom 1997b). Box Elder Creek, known by that name, was a trail into the Black Hills (Dodge 1996:222; Grinnell 1906:20). Cheyenne people trapped eagles and left grooves in the cliffs of Bear Butte Creek west of the sacred mountain (Stands in Timber and Liberty 1967:51; Odell 1942:143–144). Cherry Creek was known as “Cheyenne Plantings” because the Cheyenne had a village there where they raised crops before they moved farther west and gave up farming (Odell 1942:12; Moore 1987:72; Hyde 1968:16).

The Belle Fourche River archaeological region has a rich and complex cultural landscape. As the river leading westward to the sacred Black Hills, the Belle Fourche River was of religious importance as well as a major conduit for people and trade goods and a source of natural resources such as ocher and bison. The river also takes on religious significance as a physical link between Bear Butte and Devils Tower/Bear Lodge Butte, two mountains with strong religious meaning. The Native American traditions that imbue this landscape with such meaning are alive and active; thus, it is imperative that historic preservation activities in this region take into account its special character, and actively involve descendant populations in any decisions about specific sites or landscapes.

***Stone Circles.*** Stone circle sites are abundant in the region. Many of these are well preserved. Some have artifact scatters in association with the stone circle features, while others have distinctive double-coursed stone circles or circles with hearths. Many of the stone circle sites contain cairns. These sites have not been test excavated; however, it appears that some have good potential for providing information about the ages, cultural affiliations, and functions of these common features.

*Stone Circle Sites:* 39BU14, 39BU24, 39BU36, 39BU38, 39BU120, 39BU133, 39BU138, 39BU139, 39BU142, 39BU143, 39BU149, 39BU161, 39BU162, 39BU163, 39BU201, 39BU375, 39BU395, 39BU396, 39BU397, 39MD110, 39MD117, 39MD119, 39MD199, 39MD202, 39MD217, 39MD223, 39MD234, 39MD238, 39MD246, 39MD250, 39MD289, 39MD343, 39MD559?, 39MD560

***Middle Missouri Outposts.*** As mentioned, archaeologists have yet to adequately explain finds of typical Middle Missouri artifacts, features, and villages away from the Missouri River mainstem. The Belle Fourche region has a relatively large number of such sites. These are as ancient as the Missouri River sites but seem not to have been used after non-Indians entered the region. Archaeologists do not know whether the abandonment of the off-river sites reflects population decline due to the introduction of European and Asian diseases, a shift in trade patterns, or some other factor. The Belle Fourche region sites are potentially of key importance to understanding Plains Village social and economic dynamics.

*Plains Village Sites:* 39BU2, 39BU217, 39MD133, 39MD205, 39MD387

***Sites Related to Federal Relief Efforts.*** Both Works Progress Administration and Civilian Conservation Corps projects were important in reestablishing the local economy following the prolonged drought of the 1930s. The Civilian Conservation Corps helped to maintain irrigation facilities and to prevent soil erosion. The Works Progress Administration boosted local morale and the tourism industry in its work developing local attractions such as Bear Butte Lake.

*Civilian Conservation Corps and Works Progress Administration-Related Sites:* 39BU341 and 39MD437

***Early Agriculture and Industry.*** The earliest non-Indian settlements in the area were ranches that supplied the Black Hills gold rush towns with fresh meat. Having discovered the rich grasslands of the northern Plains, cattle barons claimed ranges in the Belle Fourche country. The short- and mid-grass prairies that blanket the region were coveted range for Texas cattle on their

way to eastern markets. The Belle Fourche Irrigation Project was one of the largest and most ambitious of its day. An offshoot of this effort was a large sugar beet industry. Although demand for wool dropped after World War II, northwestern South Dakota remains an important sheep-raising area.

*Agricultural and industrial sites:* 39BU32, 39BU33, 39BU54, 39BU82, 39BU86, 39BU116, 39BU141, 39BU188, 39BU191, 39BU248, 39BU283, 39BU284, 39BU319, 39BU328, 39BU365, 39BU371, 39BU378, 39BU379, 39BU394, 39BU401, 39BU409, 39BU410, 39BU2093, 39BU2108, 39BU2190, 39MD97, 39MD243, 39MD266, 39MD276, 39MD282, 39MD286, 39MD288, 39MD340, 39MD352, 39MD381, 39MD468, 39MD500, 39MD530, 39MD533, 39MD535, 39MD553, 39MD561, 39MD581, 39MD583, 39MD585, 39MD586, 39MD587, 39MD588, 39MD589, 39MD592, 39MD593, 39MD660

## **Archaeological Potential**

The archaeological potential of the Belle Fourche region is largely unknown. A few deeply buried sites, such as Gant, Willow Creek, and Matz, indicate that well stratified sites exist in the region; however, test excavations at sites near the Belle Fourche Reservoir found the archaeological deposits to be very shallow and mixed (Toom and Kordecki 2002.) The larger Plains Village sites, stone circle sites with features and artifacts, and some large, multiple-component artifact scatters appear to have good potential to yield significant information. Historic sites such as Fort Meade, the Ute Village, the Civilian Conservation Corps and POW camp, and agricultural workers' housing can undoubtedly shed light on the history of groups that tended to be poor, disenfranchised, and far from home.

## **Management Considerations**

The Belle Fourche region is well placed to provide important information on both Native and Euroamerican history. Although some sites were disappointingly shallow, it may simply be necessary to develop methods that can extract the information they contain. In other words, the less-than-ideal data from a shallow site in this region is better than no data at all. The Belle Fourche River was an important link between the farming villages of the Missouri River and the western Plains. It also is a likely migration route for the Tsistsistas people who make up one division of the Cheyenne nation. Historically, the area was important in development of the corporate cattle industry, the sugar beet industry, and large-scale irrigation projects. Privately owned lands in this region are used primarily for livestock production; sites there are not in great danger of damage or destruction. Sites in irrigation zones and recreation areas are more likely to be damaged or destroyed. To prevent loss of irreplaceable historic information, it will be important to design cultural resource management projects to extract whatever data these sites can offer. Bear Butte is a Native American sacred site of unparalleled importance. Resource managers should keep in mind the historic and ongoing traditional use of this feature and campsites and trails associated with it.

## **Sites Listed in the National Register of Historic Places**

The only site listed from this region is Bear Butte, 39MD33.

## Region 7: Black Hills

### Setting

The Black Hills Region is located in western South Dakota. The eastern border of the region conforms to the Greenhorn limestone geologic formation. The northern edge of the region is drawn from the Greenhorn formation at the Butte-Meade County line, west to the base of the Hogback Ridge. The boundary then follows the Hogback Ridge west to the South Dakota-Wyoming border. The southern border of the region arbitrarily includes the area north of the Cheyenne River to the intersection of the Greenhorn formation in northeastern Fall River County. Small areas of the Hogback Ridge south of the Cheyenne River are also included in the Black Hills region. Portions of Fall River, Custer, Pennington, Meade, and Butte Counties and all of Lawrence County are included in the region.



*Figure 141. View of the Limestone Plateau physiographic zone in the Black Hills region (L. Sundstrom photo).*

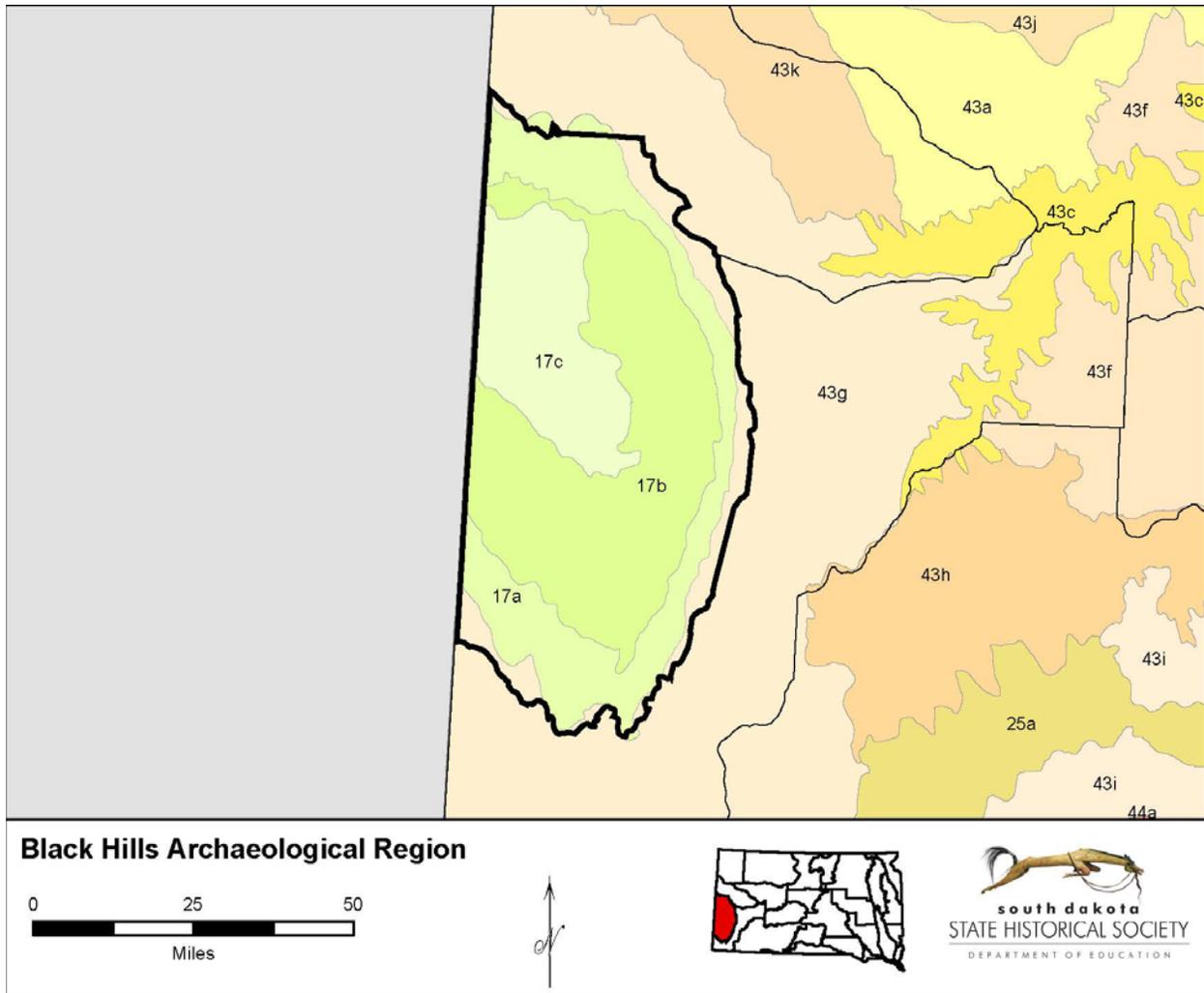


Figure 142. Ecoregions of the Black Hills archaeological region.

*17 Middle Rockies*

*17a: Black Hills Foothills, unglaciated ring of foothills surrounding the Black Hills' mountainous core; the Dakota Hogback separates the foothills from the plains; the Red Valley (Racetrack) inside the Hogback encircles the Black Hills dome.*

*17b, Black Hills Plateau, unglaciated plateau topography with broad ridges and entrenched canyons; in metamorphic areas, highly dissected, tilted rock faces, steep canyon slopes; in limestone areas, caves, springs, consistent yearly streamflow.*

*17c, Black Hills Core Highlands, mountainous topography with highly eroded outcrops and broad valleys; Limestone Plateau above 5500 feet; granitic intrusions form the major peaks including Bear Mountain, Terry Peak, Custer Peak, and Black Elk Peak, the highest point in South Dakota at 7242 feet.*

The Black Hills are an isolated, unglaciated, domal uplift that rise above the surrounding plains along the South Dakota-Wyoming border. The Black Hills comprise four major geographic zones. From oldest to youngest and from the center outward, these are the Central Area, the Limestone Plateau, the Red Valley, and the Hogback Ridge. Most of Bear Butte, described above under Belle Fourche archaeological region, lies within the Black Hills archaeological region. Principal vegetation of the region consists of ponderosa pine, spruce, and a variety of grasses and forbs. Streams flow eastward from the Limestone Plateau in a lattice pattern, draining into the northern (Belle Fourche River) and southern branches of the Cheyenne River. The two branches encircle the mountain uplift from the east like two great arms. Major tributary streams cut across geologic strata, forming deep canyons and water gaps through the Hogback Ridge.

## **Previous Archaeological Investigations**

The first archaeological explorations of the Black Hills happened incidental to expeditions sponsored by the federal government and natural history museums to gather information about this relatively unexplored portion of the West. The Black Hills Expedition of 1874, led by Lt. Colonel George A. Custer, was officially intended to assess the natural resource potential of the Black Hills, which was Indian land at the time. In fact, the real purpose was to investigate rumors of rich gold deposits. In his report, the expedition naturalist, William Ludlow, mentioned the presence of old campsites and trails in the vicinity of Red Canyon in the southern Black Hills (Ludlow 1875). At the time, the government was mainly interested in these in reference to finding a militarily defensible trail into the interior Black Hills, and Ludlow made no attempt to establish who left the remains or when. Col. Richard I. Dodge also observed recently abandoned camps, trails, and a “medicine lodge” when he explored portions of the Black Hills in 1875 (Dodge 1996).

The next published mention of archaeological sites in the Black Hills was a report on an archaeological reconnaissance of Wyoming sponsored by the American Museum of Natural History (H. Smith 1908). The museum party discovered a few sites on the western periphery of the Black Hills and concluded that the area probably had lacked any human presence before the introduction of the horse. This conclusion followed the conventional wisdom of the day. This held that the Great Plains were uninhabitable until the Indian nations acquired horses—a view that was to persist well into the twentieth century (Wedel 1961).

Early professional research into Black Hills archaeology continued through the efforts of W.H. Over of the University of South Dakota Museum and E.B. Renaud of Denver University. Over identified prehistoric quarries, rock art, and a possible village in the Black Hills (Over 1924, 1934, 1941, 1948; Sigstad and Sigstad 1973). Relying on local reports, Renaud briefly mentioned southern Black Hills sites in his reports on archaeological reconnaissance of the western plains (Renaud 1936). The following year, Renaud's principal Black Hills informant published a short description of archaeological remains in the area (Buker 1937). In 1938, Over and the University of South Dakota Museum, with Works Project Administration funding, excavated 14 rock shelters in the southern Black Hills (Meleen and Pruitt 1941). Both ceramic-producing and nonceramic groups had occupied these shelters. Unfortunately, the field notes and most of the artifacts from this project were lost and no report was completed. In Wyoming, another Works Project Administration project directed by Ted Sowers attempted to compile a basic list of that state's archaeological resources (Sowers 1941). About the same time, the Smithsonian Institution excavated a small portion of the Agate Basin site in the southwestern Black Hills foothills in

Wyoming (Roberts 1943). The site was found to be a Paleoindian bison kill, thus erasing whatever doubts may have still lingered as to the antiquity of human occupation of the area. These early studies showed that archaeological remains were present in the area, that these included diverse site types, and that at least some of the sites were prehistoric. The studies were too limited in scope and geographic extent to allow many other conclusions. The assumption that prehistoric groups never occupied the interior Black Hills persisted in spite of these early studies, and few professional archaeologists addressed this question.

From the late 1940s through the early 1950s, Smithsonian Institution-River Basin Surveys crews conducted survey and excavation in the vicinity of Angostura Reservoir. Although this area is not included in the Black Hills region as defined here (see South Fork Cheyenne Region), the early research at Angostura helped outline Black Hills prehistory. Other Smithsonian Institution-River Basin Surveys projects in the Black Hills included survey and excavation at Deerfield Reservoir (Cooper 1947a) and Cottonwood Springs Reservoir (Mallory 1967).

Following these early studies, archaeological projects have focused on research, especially in the Wyoming Black Hills, and cultural research management, especially in the South Dakota portion. Both have contributed to a very large body of data. Major excavation projects in the Black Hills (including both South Dakota and Wyoming) have taken place at the Hawken site, an Early Archaic bison kill in the northwestern Black Hills (Frison *et al.* 1976; Frison 1991); the Vore site, a large Late Prehistoric bison trap at the northern edge of the Black Hills (Reher and Frison 1980); the multiple-component Boulder Canyon site (Tratebas 1977) in the northern Black Hills; the Agate Basin site, a multiple-component Paleoindian site on the southwestern periphery (Frison and Stanford 1982); the multiple-component Beaver Creek site in the southern Black Hills (L. Alex 1991); 48WE320 in the southwestern foothills (McKibbin 1988); the Buster Hill site (Hannus *et al.* 1997), 39LA117 (Sundstrom *et al.* 1994), and the Boulder Creek Rock shelter (Donohue *et al.* 1995; Abbott *et al.* 1995) all in the northern Black Hills; the Red Canyon Rock shelter and other sites in the Bear Lodge Mountains (Schneider *et al.* 1997; Schneider and Smith 1997); 39CU1144 (Sundstrom *et al.* 1999) and the Jim Pitts site (39CU1142) in the southwestern Black Hills (Donohue 1985); and the Sewright site (39FA1603) in the southeastern quadrant (Donohue 2003, 2004).

Historic sites that have been partially excavated include: 39MD312, the Havens whistle stop, in use from 1890 to 1907 (Boen 1990; Fox 1996); 39MD313, a lime kiln and quarry (Boen 1990; Fox 1996); 39MD2005, a railroad grade (Fox 1996); 39MD751, a farmstead and prehistoric chipped stone artifacts (Byrne and Short 2009); 39MD742, historic farm machinery and prehistoric chipped stone artifacts (Byrne and Short 2009); 39MD708, stage station; 39MD848, cemetery associated with a county poor farm (Archaeological Research Center records); and a scatter of historic and prehistoric artifacts, 39MD747 (Byrne and Short 2009).

Several major thematic surveys have been done in the Black Hills. The first was a 1980 search for Paleoindian sites along the Cheyenne River in the southern Black Hills (Hannus *et al.* 1983). This project was mostly within the South Fork Cheyenne archaeological region. Results of this initial study were limited but indicated the presence of buried archaeological deposits in stream terraces. The same year, a survey and inventory of rock art sites was conducted in the southern Black Hills (Sundstrom 1981a). This indicated the presence of nearly 100 rock art sites in the study area, dating from Archaic through Protohistoric. A study of data collected during resource

management surveys and test excavations explored the nature of tipi-ring sites in and near the eastern and southern Black Hills (Hovde 1981). Another survey identified tool-stone quarries in the Black Hills and systematically described the various stone types; this was developed into a master's thesis (Church 1990, 1996). The Black Hills area was also included in a master's thesis on tool-stone sources of northeastern Wyoming and southeastern Montana (Craig 1982, 1983). A doctoral dissertation examined human subsistence ecology in the northwestern Wyoming Black Hills area (Kornfeld 1989). A survey of portions of Tepee and Hell Canyons indicated intensive Archaic and Late Prehistoric use of this area and concluded that little pre-Archaic material had been preserved in this geomorphically active zone (Sundstrom 1999). Another project assessed the effects of wild fires on archaeological sites at three Black Hills locations (Sundstrom 2002).

Two Black Hills sites important in the establishment of the basic cultural chronology of the Great Plains have been reexcavated. The first is the late Paleoindian Ray Long (Angostura) site in the southern Black Hills. Low water levels in 1985 allowed renewed investigations at Angostura Reservoir, including both survey and re-excavation projects (Hannus 1986; Lippincott 1996; Haug *et al.* 1992). At the Ray Long (Angostura) site, charcoal samples confirmed the presence of Paleoindian deposits dating to about 9000 BP. Additional samples from lower levels yielded dates of 9540, 10,400, and 11,000 BP, suggesting a prolonged period of use of the locality during the Paleoindian period. The other is the McKean site in the northwestern Black Hills, the type site for the northwestern plains Middle Archaic period (Kornfeld and Todd 1985; Kornfeld *et al.* 1991; Kornfeld and Larson 1986). Both of these projects took place primarily outside the Black Hills archaeological region, as defined here.

Other problem-oriented research in the area has involved the reanalysis and synthesis of previously collected data. Studies based on data from resource management projects on federal lands include overviews of Black Hills area prehistory targeted for use by federal land managers (Cassells *et al.* 1984; Kornfeld and Reher 1992; Rom *et al.* 1996) and a doctoral dissertation using surface collections to reconstruct prehistoric settlement patterns (Tratebas 1986). Other overviews of Black Hills prehistory have been written for the public and for professionals (Cassells 1986; Sundstrom 1989).

While area archaeology got off to a slow start, Cultural Resource Management projects and the more recent problem-oriented studies have resulted in the accumulation of a substantial body of data, as well as a number of published interpretations of area prehistory. Because these raise as many questions as they answer, interest in the archaeology of the Black Hills continues to grow.

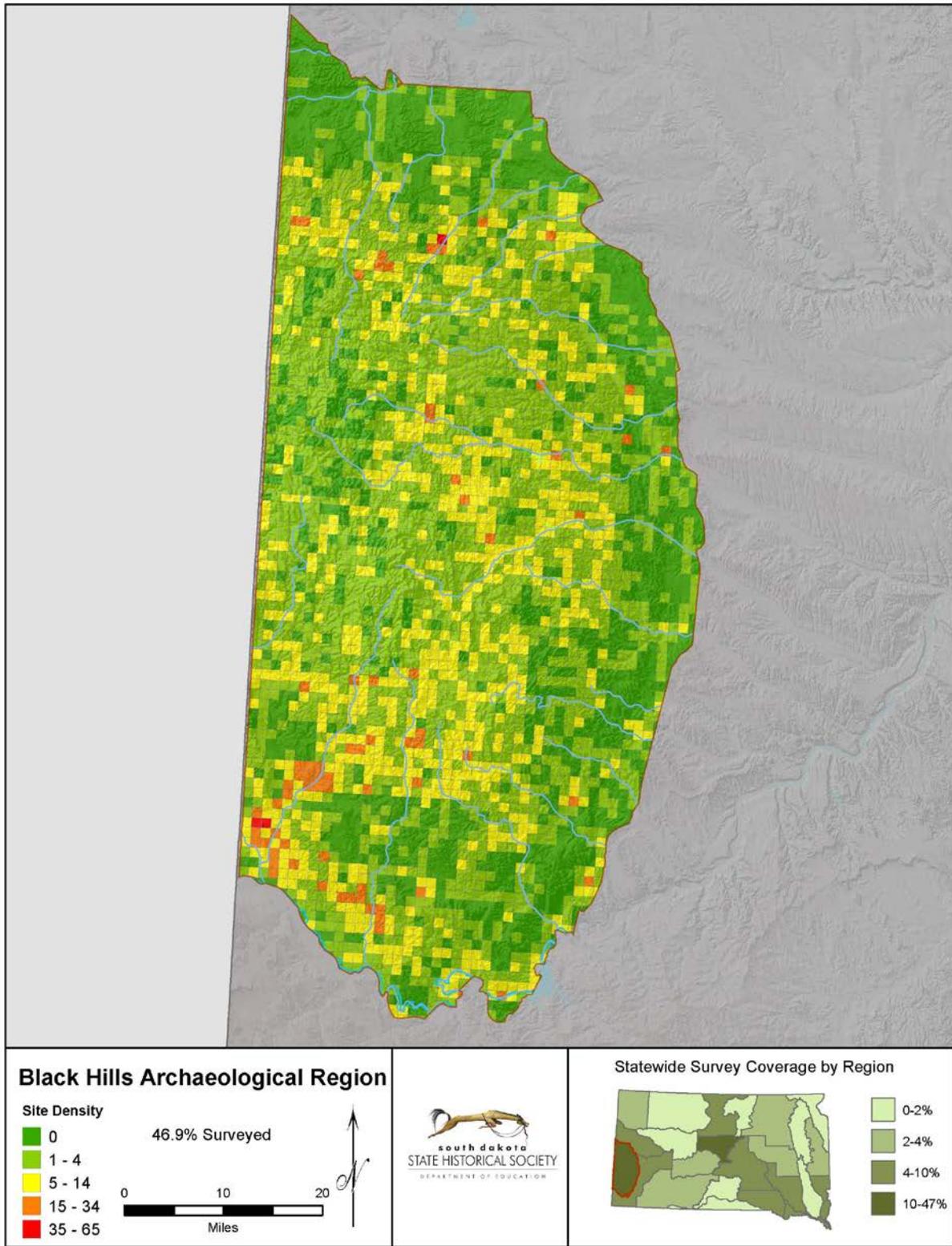


Figure 143. Density of known archaeological sites, Black Hills archaeological region.

## Historic Contexts

**Paleoindian.** No pre-Clovis sites are known for the Black Hills. The Sheaman site in the southwestern foothills of the Wyoming Black Hills contained a single Clovis component (Frison and Stanford 1982:143–157). This included six areas of flake concentration, seven areas of bone concentration (all but one overlapping with the flake concentrations), and an oval area containing red ocher in the form of small nodules intermixed with the soil. This component was exposed in the bank of an arroyo and seems to have originally lain in the bottom of a small swale or arroyo. Charcoal from a natural fire postdating the Clovis occupation was radiocarbon dated to just over 10,000 BP. This was estimated to have occurred about 1000 years after the Clovis occupation. Artifacts from the site include a Clovis point, four channel flakes, an ivory projectile point or foreshaft, a modified pronghorn bone, a biface broken during manufacture that was reworked into a knife, a projectile point preform, six large biface reduction flakes used as tools, a composite side scraper and double-ended burin, two side scrapers, a split cobble tool, several other flake tools, and about 3000 flakes and pieces of chipping debris. The site also contained several bison bone fragments, some of which had been deliberately coated with red ocher. The site was interpreted as a small spring or summer campsite, possibly peripheral to a larger campsite (Frison and Stanford 1982:156–157).

Redeposited cultural material underlying Folsom levels at the Agate Basin site, adjacent to the Sheaman site, may represent the remnants of other Clovis or Goshen campsites. No intact features or cultural levels were found within these deposits (Frison and Stanford 1982). One pre-Folsom deposit at Sheaman was dated to 10,690 BP (Frison 1996:214).

Preliminary results from the Jim Pitts site in the southern Black Hills indicate an extensive Goshen bison-processing locality. This firmly establishes the presence of Goshen in the Black Hills and will contribute to a more complete definition of the complex as analysis of the site is completed (Donohue and Hanenberger 1993). Although the Goshen level at Jim Pitts lies beneath a Folsom level, it was dated to 10,100 BP, considerably younger than other Goshen sites in the region (Frison 1996:214–215).

Another probable Goshen camp site is the Sewright site, 39FA1603, lying within a stream terrace complex at the east edge of the Black Hills. This very deeply buried, well stratified site contained at least four cultural levels: a Late Archaic to Late Prehistoric level near surface and three Paleoindian levels extending far below surface. The lower of the three Paleoindian levels contained Goshen or Plainview projectile points. The next level up had a Frederick-Allen assemblage. Above that was a Paleoindian component of unknown age (Donohue 2003, 2004). While the recent, upper level appeared to reflect tool-stone procurement and initial chipped stone tool making, the Paleoindian levels had diverse sets of artifacts suggesting that they were base camps. They contained chipping debris, bifaces, scrapers, flake tools, hammerstones, fire-cracked rock, shell, and animal bone. It is possible that additional Paleoindian levels are present below the Goshen-Plainview level. Because work at the site involved only National Register status evaluation, the excavations were not extended to bedrock. The site was clearly significant as one of the few campsites dating to this early period in North America. The limited information from the test excavation clearly shows that the earliest Paleoindians were living in the area and subsisting in part by hunting bison, but the specifics of their lifeways remain unexplored at this

site. A portion of the site was covered by a protective mat and gravel bed and a highway constructed over it.

The Agate Basin site (48NO201) in the southwestern (Wyoming) Black Hills foothills contains two Folsom components (Frison and Stanford 1982). These yielded radiocarbon dates of 10,665 and 10,780 BP. The Folsom component at the Brewster locality contained a scatter of bison bone, a concentration of bone fragments, and a shallow basin hearth (Frison and Stanford 1982; Agogino and Frankforter 1960). Associated artifacts were a bone awl or projectile point fragment, two Folsom projectile points, and several scrapers, flake tools, and bifaces. Red ocher was present throughout the soil matrix. The second Folsom component at Agate Basin was more extensive (Frison and Stanford 1982). This occurred as two discontinuous deposits. Stone artifacts and bison, rabbit, pronghorn, and canid bone formed a dense scatter across the two areas. The upper component contained several concentrations of bone, three hearths, and three concentrations of small flakes. This upper level also contained the remains of two possible structures. The better defined of these was a circular area about three meters in diameter marked by a slight change in sediment color and texture. This feature contained a hearth and a concentration of flakes and stone tools. Among the artifacts were several bone needle fragments, stone projectile point preforms, and antler tools that may have been used in fluting the projectile points. Just outside its perimeter was a bison rib stuck into the underlying sediments like a peg. An identical bison rib peg was found alongside the second proposed structure. These structures were thought to be for special activities such as ceremonies or equipment storage rather than habitations. This level also contained large amounts of red ocher, as well as fluted and unfluted Folsom points, scrapers, graters, serrated flakes, flake and blade tools, bifaces, cobble tools, anvils, hammerstones, abrading stones probably used in hide processing, and a grinding slab used to pulverize red ocher. Several finely incised bison ribs were also found in this level.

Several small Folsom sites have been found in the northwestern Black Hills of Wyoming. A Folsom site in the western foothills was identified as a bison hunting overlook (Hofman and Ingbar 1988). Situated on a prominent butte on the Cheyenne-Belle Fourche divide in northeastern Wyoming, this site contained several stone tools and flakes. Another possible Folsom component in the northwestern Black Hills, 48CK840, consisted entirely of redeposited stone artifacts (Kornfeld 1988). These included flaking debris, a utilized flake, a retouched flake, a scraper, a hammerstone, a core, and a biface, as well as an unfluted projectile point that could be either Goshen or Folsom. A third site in the northwestern Black Hills, 48CK1317, contained a Folsom projectile point, a point base with a channel scar on one side, and several bifaces, scrapers, and pieces of fire-cracked rock (Noisat 1990a). This site was located on a ridge top overlooking the confluence of two streams.

Cultural diversity probably continued to increase during this period, as did group size and overall population density. Beginning with the late Paleoindian period, a division between a mountain-oriented subsistence pattern and a plains-oriented pattern is discernible. In transitional areas such as the Black Hills, mountain-oriented groups may have moved seasonally between the mountain-foothills zones and the surrounding plains. Plains-oriented groups in turn may have occupied the foothills and Hogback zones during seasons or episodes of extreme conditions on the open plains (Sundstrom 1989). An alternative hypothesis holds that during this period the Black Hills interior was used only for occasional hunting forays by small groups otherwise based in the surrounding plains, although use of the area may have increased late in the period (Tratebas 1986).

These hypotheses cannot be developed further until more sites are excavated in the Black Hills and the geomorphic history of the area is better known.

The late Paleoindian period of the Black Hills includes both typical plains and more unusual mountain-foothills complexes. A possible Alberta complex site in the southern Black Hills contained a postmold with a bison bone brace in it, but the site was not fully investigated (Tratebas and Vagstad 1979; Tratebas 1986). An Agate Basin projectile point was found at 39FA833; however, the site lacked intact buried cultural deposits (Haug *et al.* 1992). Site 39LA314, located well inside the Black Hills, was a late Paleoindian special activity site used for pre-hunt weapon preparation and post-hunt weapon repair, secondary butchering, and hide processing (Sundstrom *et al.* 1994). The Forest Jewel site, 39CU1172, probably was a short-term camp site used throughout Black Hills prehistory. Limited test excavations there unearthed a projectile point identified as Hell Gap or James Allen (Jones 2006). Although James Allen and Lovell Constricted projectile points are known from the Black Hills (Haug 1978a; Eckles 1978:16; Tratebas and Vagstad 1979; Hannus *et al.* 1997; Jones 2006), no detailed analysis of local mountain-foothills complexes has been undertaken. A James Allen projectile point was found at 39FA11 (Haug *et al.* 1992); previous excavations at the site had uncovered flakes, lanceolate knives, and endscrapers but no material indicating the age of the site (Wheeler 1957). Lanceolate and rounded-base stemmed projectile points have been assigned to the late Paleoindian period in the Black Hills (Tratebas 1986). Because the chronological placement of these various projectile point types has relied entirely on comparisons with point sequences from other areas of the northwestern plains, further study is needed before such artifacts can be considered reliable time diagnostics.

The mountain-foothills versus plains dichotomy that marks the late Paleoindian period persisted to varying degrees throughout the remainder of northern plains history. In the Black Hills, both patterns and both sets of archaeological complexes are expected. The plains-oriented communal bison-hunting pattern is represented at the Agate Basin site, while some stemmed point types and sites with diverse subsistence remains are found in the interior Black Hills. What appear to be Late Paleoindian projectile points have been found throughout the Black Hills during survey and testing projects; however, most of these finds have not been independently dated. These are most common at large, multiple-component sites in high-altitude meadows, with fewer finds occurring in the southern Hogback. At 39CU2839, in the eastern foothills, test excavations revealed a few chipped stone artifacts in a buried soil estimated to date to the Paleoindian-Early Archaic transition; however, no significant archaeological deposits occurred at this level (Williams and Hanenberger 2002). These sites may represent the warm-season habitations of small groups of hunters from the plains surrounding the Black Hills (Tratebas 1986). It is not known whether mountain-oriented groups occupied the Black Hills on a year-round basis.

**Early Archaic.** Relatively few Early Archaic sites are found in the Northwestern Plains; however, whether this is due to partial abandonment of the area, depopulation, or geomorphic processes resulting in the destruction or deep burial of sites is a matter of debate at this time (cf. Sheehan 1991, 1995, 1996; Artz 1996). Early Archaic sites are relatively rare in the Black Hills, as well (Sundstrom 1989; Cassells *et al.* 1984; Tratebas 1986; Frison 1978, 1991; Kornfeld and Reher 1992). The Hawken site in the northwestern Black Hills of Wyoming, dated at about 6200 BP, indicates that at least the periphery was used for communal bison hunting (of the extinct variety *B. bison occidentalis*) during this period (Frison 1991; Frison *et al.* 1976). Early Archaic levels at the Beaver Creek site, in the southern Limestone Plateau, contained projectile points

similar to those from the Hawken site; however, a diverse subsistence base, probably focused on individual small game hunting and plant food gathering, is indicated (L. Alex 1991). A possible Hawken point was also found during test excavations at the multiple-component Victoria Creek site (39PN1124) in the interior uplift. Like the Beaver Creek site, Victoria Creek indicates a diverse subsistence base, including large and small animals and plants such as hackberry and wild plum (Vallejo 1993). Another possible Early Archaic projectile point occurred at 39CU844, an open air campsite (Jones 2006).

A probable Late Paleoindian or Early Archaic level at the Boulder Creek Rock shelter contained large amounts of burned bone, including bison and deer. This component was interpreted as the winter camp of a small group (Donohue *et al.* 1995). At 48CK1387 in the northwestern (Wyoming) Black Hills, a shallow basin hearth yielded a date of 7430 BP. This site also contained a small amount of bone from large and small mammals and a few flaked stone tools. These appear to represent a short-term occupation at which some meat procurement and processing took place (Schneider *et al.* 1997). A sparse Early Archaic component at the nearby Red Canyon Rock shelter was dated to 5190 and 5960 BP. It contained three shallow basin hearths, a scatter of fire-cracked rock, a single charred pennycress seed, and two pieces of burned bone that may belong to a later component (Schneider *et al.* 1997). Site 39LA117 in the northern Black Hills had a sparse scatter of redeposited Early Archaic and Late Paleoindian artifacts but no intact Early Archaic deposits (Sundstrom *et al.* 1994). The nearby Buster Hill site contained an Early Archaic level, radiocarbon dated to 7690 BP (Hannus *et al.* 1997). A single side-notched projectile point, similar to those found at the Hawken site, was found in this level. The site was interpreted as a short-term camp of people following a mountain-oriented subsistence pattern. A discontinuous component at the Blaine site in the western Red Valley yielded dates of 5580 and 6940 BP. Large amounts of chipping debris in this level suggested intensive use of the site (Sundstrom *et al.* 1998). This was interpreted as a camp where stone tool production and repair took place, as well as possible root or wood processing. This site, too, suggests a diverse subsistence base.

The few Early Archaic surface collections from the interior Black Hills usually co-occur with late Paleoindian assemblages and, like the earlier assemblages, include a variety of hunting and butchering tools, wood and stone tool-manufacturing implements, and grinding stones (Tratebas 1986). These interior sites suggest limited occupation by hunting parties, probably based in the surrounding plains, as do the few Late Paleoindian and Early Archaic sites present in the outer zones.

Projectile points similar to Early Archaic types from elsewhere on the northwestern plains have been found at several sites in the central Black Hills. These include large side-notched and basally notched types similar to those from Mummy Cave in the Big Horn Basin; side-notched Hawken types; and large, thin, broad-bladed, corner-notched points. Types similar to Bitterroot and Simonsen points have also been found (Tratebas 1986). The similarities in projectile point forms between Hawken and Beaver Creek suggest the possibility that the sites represent different portions of a seasonal round, or at least different subsistence activities occurring within a single culture. Many of the Black Hills projectile point types have not yet been defined and independently dated.

In the Black Hills, Big Horns, and intermontane basins of Wyoming, pit houses are a common feature of sites dating between 6000 and 4500 BP. These structures typically contain numerous

storage pits; thus, they served a dual function as shelters and storage facilities. The amount of effort represented by these substantial features suggests regularized travel between resource areas that would have allowed repeated use of the pit houses (Larson 1997).

Little is known of the Black Hills Early Archaic at present. A diversified, mountain-oriented subsistence pattern may have held sway in the Black Hills proper, with a residual pattern in the foothills of more specialized large game hunting (Sundstrom 1989). Surface collections from throughout the Black Hills suggest a continuation of the pattern of plains-based communal bison hunters making occasional seasonal use of the interior uplift (Tratebas 1986), while subsurface remains from the Beaver Creek site suggest a diversified hunting and foraging pattern (L. Alex 1991). The two basic subsistence patterns seen in the terminal Paleoindian period seem to co-occur in the Black Hills area, either as separate adaptations or as different parts of a seasonal round.

Some researchers have suggested that the Black Hills and other well-watered areas served as refuges for human populations during the more severe climatic conditions of the Altithermal (Frison 1978; Wedel 1978; Bamforth 1988; Buchner 1980; Sheehan 1991, 1995, 1996); however, this hypothesis is not well-supported by current Black Hills data (Sundstrom *et al.* 1994). There are fewer sites dating to the Early Archaic in the Black Hills than any other period. This is the opposite of the pattern predicted by the refuge hypothesis. Limited environmental data suggest that the Black Hills experienced warm, dry conditions during this period (Martin *et al.* 1993; Frison and Stanford 1982); thus, it may have provided a poor refuge.

Recent studies support a geological explanation for the relative lack of Early Archaic sites in the Black Hills. Virtually every geomorphological study done in this area has concluded that erosion removed large amounts of early Holocene deposits (Albanese 1990, 1995, 1996; Fredlund 1996; Kuehn 1997; Sundstrom *et al.* 1998). The few Paleoindian and Early Archaic sites in the study area generally are erosional remnants, either on terraces, in rock shelters, or in paleoarroyo fills. In some instances, early deposits were incompletely eroded, such that deep pockets of sediment in topographic lows such as channel fills or stream terraces were preserved, while sediments overlying them were removed (cf. Fredlund 1996; Sundstrom *et al.* 1998). Acceptance of the refuge model in reference to the Black Hills is largely due to work at the Hawken site in the northern Red Valley (Frison *et al.* 1976; Frison 1991); however, the Hawken setting is more an extension of the plains than a true mountain environment. Most of the large, multiple-component spring-side sites in the interior Black Hills appear to lack Early Archaic components.

***Middle Archaic.*** The Middle and Late Archaic were periods of intense use of the Black Hills. About 123 components have been assigned to the Middle Archaic period in the South Dakota Black Hills. This contrasts sharply with the Early Plains Archaic period, for which only about 20 components have been identified in the same area. Surface finds of McKean lanceolate, Hanna, Duncan, and other McKean complex projectile points are common throughout the Black Hills. Middle Archaic sites are larger and more numerous than those of earlier periods, suggesting that sites were occupied longer, by larger groups, or more often than during earlier periods. The number of radiocarbon dates from sites throughout the Black Hills peaks between 3500 and 4000 BP. This peak falls in the middle of the Middle Plains Archaic period as it is usually defined for the area (Sundstrom 1989; Frison 1991). Whether this peak is entirely cultural in origin or reflects a fluctuation in atmospheric carbon is not clear.

An Oxbow, McKean/Duncan, and Hanna temporal sequence is recognized for the northern portion of the Northwestern Plains. In the southern sector of the Northwestern Plains, Oxbow points sometimes occur in older stratigraphic contexts than the other defined Middle Archaic projectile point types, as they do in Canada; however, sites in the southern sector display a great deal of temporal and spatial overlap in the remaining point styles, and Oxbow and McKean types sometimes co-occur. It seems most reasonable at this time to place McKean lanceolate, Duncan, Hanna, and their variants in a single complex, with Oxbow possibly forming a separate complex. This is especially true in the Black Hills, where the various point types co-occur more often than not. In the Black Hills and South Fork Cheyenne regions, two other variants, Kolterman and Landers, are now grouped with other McKean complex types (Frison 1991:91).

The McKean and Lissolo Cave sites are large, repeatedly occupied habitation sites in the western Black Hills foothills zone in Wyoming. McKean is located on the Belle Fourche River in the northwestern Black Hills, while Lissolo Cave is located on Crane Creek, an intermittent drainage in the southwestern foothills. The McKean complex takes its name from the McKean site. The site was originally thought to contain two levels, each comprising multiple occupations (Mulloy 1954). The upper level, dated to the late Middle Archaic or Middle to Late Archaic transition, was dated at 3278 BP. The lower level was not dated except as early Middle Archaic. The lower level contained 34 hearths, including irregular, shallow depressions; hemispherical, sandstone-lined pits; and sandstone-filled, basin-shaped depressions. These indicate roasting or steaming pits. In addition, two cache pits and a chipping feature were noted. One pit contained a human skull and some bison bones that evidently had been carried around for some time before being placed in the pit. The lower level contained basally notched, somewhat regularly flaked projectile points (the classic McKean, Duncan, and Hanna types) and a variety of scraping and grinding tools. Little worked bone was found, other than an engraved bison rib and three decorated bone beads. No definite structural features were found, although a shallow depression about 10 feet in diameter may represent a pit house. The upper level of McKean contained corner-notched points of two sizes and a variety of scrapers and ground stone tools. The smaller point type is similar to typical Late Archaic corner-notched points. The upper level contained 56 stone-filled basin hearths, interpreted as roasting pits for shellfish or edible plants. Bone included deer, bird, canid (dog or coyote), rodent, frog, and rabbit in both levels, with pronghorn in the lower level and bison and shellfish in the upper level. The only bison bones in the lower level were in the skull-bearing cache pit. Many bones were crushed beyond recognition.

Reexcavation of a small portion of the McKean site in 1983 clarified the stratigraphy (Kornfeld *et al.* 1995; Kornfeld and Larson 1996; Frison 1991). Two main cultural strata were recognized, but artifact distribution was continuous throughout the deposits, with no break between the two vertical concentrations. The deposits apparently represent a large number of short-term occupations occurring in close succession over a span of some 5000 years (Kornfeld and Todd 1985; Kornfeld *et al.* 1995; Frison 1991). A series of radiocarbon dates included a date of 4590 BP on a McKean level. These excavations also revealed a pit house in the McKean component similar to Early and Middle Archaic pit houses from the Wyoming basins and Rocky Mountains (Larson 1997).

The Lissolo Cave site in the southwestern Black Hills foothills contained three cultural levels within a creek terrace fill adjacent to a small rock shelter (Steege and Paulley 1964). The lowest level contained lanceolate points similar to those found in the lower level of the McKean site.

Shallow, unlined basin hearths and a continuous scatter of small fragments of animal bone were the only features at this level. The artifact assemblage is strikingly similar to that of the lower level of the McKean site, containing blade tools, snub-nosed end scrapers of the McKean type, a graver, a drill fragment, a flake knife, and a fragment of decorated bone. A cached mano and metate found at the back of the rock shelter may be associated with this level. All recovered long bones were broken into small pieces, presumably to extract the marrow. Identifiable bone included bison, elk, and mule deer. The middle level contained a few surface hearths, points similar to the Duncan, Hanna, and Oxbow types found in the upper level of the McKean site, and a slab metate. The upper level contained surface hearths, side- and corner-notched points, an end scraper, and several flake knives and retouched flakes. The projectile points are smaller, less regularly flaked, and narrower than those found in the lower levels. Identifiable bone at this level was limited to bison. The Lissolo Cave sequence and assemblages match those of the McKean site, except that the latter was much more extensive. At the McKean site, the smaller corner-notched points were intermixed with classic McKean types in the upper level, rather than occurring in separate components as at Lissolo. Whether this represents postdepositional mixing of occupation layers at McKean or overlapping of point types is not entirely clear (Kornfeld et al 1995).

Three other large, open-air sites in foothills zones also show signs of repeated seasonal use. Site 39CU271 in the southwestern foothills zone is another probable plant-food processing site (Charles Reher pers. comm. 1993). This open-air site contained both Late and Middle Archaic materials, with the bulk of the site deposits apparently dating to the Late Archaic. Investigations at the site were limited to surface collections, feature mapping, and limited testing. The site was badly disturbed by mineral exploration activities before its investigation, and no complete report of the investigations was ever prepared. The site contained 184 features in the form of fire-cracked rock concentrations and rock-filled basin hearths. One feature was dated at 3150 BP; another five dates fall within the Late Archaic period. Descriptions of diagnostic artifacts and other tools are not available; however, plant-food processing appears to have been the main activity.

A small open-air camp containing seven hearths, crushed bone, and a mixture of bifaces and unifacial flake tools is located in the northwestern foothills zone in Wyoming (Kornfeld *et al.* 1995). Site 48CK13 contained both Middle and Late Archaic projectile points, suggesting sporadic but long-term reuse of the site. Butchering, pemmican production, and bifacial tool production apparently were the focus of this occupation. The nearby site 48CK46 is another multiple activity open-air camp with Middle and Late Archaic diagnostics. This site contained about 30 hearths, mostly stone-filled basins with stone-lined shallow basins, stone platforms, and roasting pits occurring as well. The site contained large amounts of chipping debris and a mixed tool assemblage including projectile points, knives, a drill, an engraver, unifacial flake tools, a hammerstone, a celt, and grinding slabs and manos, as well as bison, deer, and pronghorn bone. This site appears to represent a base camp at which a variety of activities took place, including chipped stone tool production.

The Harney site, 39FA10, was a deep, complex site with three cultural levels, all dating to the Middle Archaic period. Component A, the most recent, contained stone-lined basin hearths, a small stone-filled jar-shaped hearth, a pit hearth with a layer of fire-cracked rock near the bottom, an arrow point, McKean lanceolate points, stone knives of various forms, end scrapers, drills, manos and metates, chipped stone debris, ocher and a palette, and small amounts of bison bone and clam shell. Component B had piles of hearth stones, arrow and dart points, including McKean lanceolate

and Duncan types, various kinds of stone drills and knives, end scrapers, flake tools, a mano, cores and chipping debris, and immature bison and prairie dog bone. Component C, the oldest, had a wide variety of hearth types, piles of hearth stones, arrow and dart points, including Harney, Duncan, and McKean lanceolate types, various kinds of knives, drills and scrapers, a small shaft cutter, choppers, hammerstones, manos and metates, a bone awl, shell fragments, and bison and prairie dog bone. Among artifacts found on the surface was a dart-thrower weight made of stone. Another site excavated in advance of Angostura Reservoir, 39FA9, contained a Duncan point and a stone-lined saucer-shaped hearth in the lowest of three levels.

Other sites in the outer Black Hills also represent open-air campsites. Sites 39FA422, 39FA530 and 39CU690 are single-use camps near springs. Site 39FA422 is another single-use spring-side camp at which hide working, butchering, woodworking, chipped stone tool production, and food preparation took place (Haug *et al.* 1980). It contained a single hearth. Site 39FA530 contained a Hanna point, a keeled endscraper, and a few flakes (Cassells 1989). This site was mostly destroyed by road construction; however, it appears to have been a small habitation site. Site 39CU690 contained a small amount of fire-cracked rock, a McKean lanceo-late point fragment, a scraper, flakes, and a sandstone mano (Noisat 1992a). These may have been base camps used during spring or early summer. Site 39CU821 is a creek-side camp with Oxbow, McKean, and Late Archaic projectile points, a wide variety of stone tools, fire-cracked rock, and a piece of worked hematite (A. Johnson 1989a). A small artifact scatter at 39FA44 included a McKean projectile point and two flakes. Fire-cracked rock and chipped stone debris marked the location of 39FA60. Cores, a quartz hammerstone, a combination end scraper/drill, an end scraper, and a chopper were found on the surface, along with a corner-notched dart point.

Site 39FA437 is a multiple activity camp containing a McKean projectile point, end scrapers, cores, and chipping debris. The site may contain more than one component; however, the shallow deposits did not allow recognition of separate occupation levels (Haug *et al.* 1980). The nearby site 39FA416 contained a McKean lanceolate point and three rock-filled hearths, along with late Paleoindian, Late Archaic, and Late Prehistoric points. These components were mixed, and the cultural affiliation of the hearths is uncertain (Haug *et al.* 1980). Two special activity sites date to the Middle Archaic. Site 39FA484 is a tool-stone procurement and camp site (Cassells 1989). The Dead Sage site (39FA396) is an open-air camp at which shaft and biface production took place, probably in the context of gearing up for seasonal hunts (Tratebas 1986). The site contained a few basin shaped hearths, grinding stones, and small blades in addition to a tool assemblage designed for shaft and biface production. Some Late Prehistoric and possible Late Archaic materials also occurred at this site. Surface remains at 39FA1363 indicate a large camp site. The survey crew observed fire-cracked rock, 111 flakes, 30 pieces of shatter, three projectile points, a unifacial tool, a retouched flake, a hammerstone, and two bifacial tools. The site also contained fire-cracked rock and bone and shell fragments, as well as at least seven hearths. The site is on a terrace cut by a gully. Several buried soils are exposed in the sides of the gully with artifacts eroding from them. Artifacts were observed to a depth of 100 cm.

The George Hey site is a Middle Archaic winter base camp in the southern Black Hills (Tratebas and Vagstad 1979). It contained several lenses of burned rock from hearth cleaning, basin and rock-filled pit hearths, and numerous grinding stone fragments also used as hearth rocks. McKean lanceolate, Duncan, and Hanna dart points and other tools suitable for hunting and hide-working made up the tool assemblage. The hearths contained crushed bone, some of which was

identifiable as deer. The sheltered location, extensive reuse of hearths and tools, and hearth density suggest a winter occupation of this site. The site was reused several times. Another ridge top site, 39FA458, may also have been a winter occupation; however, no test excavation was conducted at the site (Haug *et al.* 1980). Two hearths and a concentration of fire-cracked rock were exposed in a bulldozer cut; a McKean lanceolate point and mano fragments were also found.

The Red Valley zone of the Black Hills also contains a variety of Middle Archaic site types. The Hawken II site, on the Wyoming side, dated at 4250 BP and was used for communal bison procurement using natural arroyo traps (Frison 1991). The Harbison site (39CU570) in the eastern Red Valley appears to have been a single-use base camp at which hunting-tool production and plant-food processing were the main activities (Sundstrom 1981b). The site contained conical pit hearths from which heating stones had been removed, a fire-cracked rock scatter, cached boulders of tool-stone, microblade cores, and debris from biface production. Although a Middle Archaic age was hypothesized for the site based on artifacts typology, no radiocarbon dates are available from the site. Two other Red Valley sites are open-air camps in canyon bottoms. Site 39CU427 contained a mixed artifact assemblage typical of a tool-stone procurement station and campsite at which tool manufacturing took place (Noisat 1990b). Nearby chert outcrops were the source for tool-stone. The site contained both Middle and Late Archaic artifacts. Site 39CU1182 is a multiple-component site with Paleoindian, Middle Archaic, Late Archaic, and Late Prehistoric artifacts (Wolf and Miller 1992). Unfortunately, these are all at or near the surface, making recognition of separate components impossible. A mixed tool assemblage was present, including projectile points, unifacially retouched flakes, scrapers, choppers, and a spokeshave. This tool assemblage suggests hunting and related activities. Wells Spring (39CU634) contained an expanding stemmed or eared dart point that appears to be a Middle Archaic type. The site also contained biface thinning flakes, a blade, microflakes, biface fragments, and unifacial flake tools. Biface and blade tool production would appear to be the focus of this site. The flake tools suggest an additional function such as shaft preparation or plant-food processing.

The interior Black Hills area also contains a variety of Middle Archaic site types. These include spring, summer, and fall occupations; large base camps and small special-activity stations; and both open-air and rock shelter sites. The Beaver Creek site is a streamside rock shelter that contained some 17 occupation levels, dating to the Early and Middle Archaic (L. Alex 1991; Martin *et al.* 1993). These indicate warm-season occupation. Maintenance and production of stone tools, hunting, and game processing appear to have been the principal activities associated with the site. The Middle Archaic was the period of most intensive use of the shelter. The Middle Archaic levels had numerous roasting pits and hearths. A Hanna point occurred stratigraphically higher than McKean lanceolate points at this site, suggesting a possible temporal sequence of projectile point styles. Food scraps included deer, bison, pronghorn, canids (including domesticated dog), rabbits, and toads, although the bones were not analyzed specifically for butchering marks. Bison does not occur in the lower levels. A roasting pit contained several immature deer. Unfortunately, a complete analysis of the material excavated from the Beaver Creek site has not been undertaken, and the samples are difficult to correlate with archaeological occupation levels due to the excavation methods used. A high altitude rock shelter (39CU144) contained a single McKean lanceolate point and a few flakes. It probably was used only once (Noisat 1990b). Another rock shelter site (39CU1310) contained pronghorn bone and stone knives in a Middle Archaic level (Jones 2006).

Open-air, multiple-component base camps are the most common Middle Archaic site type in the interior Black Hills. These typically contain late Paleoindian, Middle Archaic, Late Archaic, and Late Prehistoric components, suggesting periodic reuse over thousands of years. These appear to represent warm-season habitation sites, from which hunting, meat processing, hide working, and hunting tool manufacture were based. One of the largest of these is the Deerfield site (Buechler 1984). It contained materials dating from the Paleoindian to the Protohistoric periods, with the exception of the Early Archaic period. The site was most heavily used during the Middle and Late Archaic. The site was badly damaged by construction activity before archaeological investigations were initiated. Together with a lack of vertical depth to the site, this made it impossible to clearly identify the various components. The site contained about 200 hearths, charcoal stains, and fire-cracked rock concentrations. Hearths were rock-lined and rock-filled pits; 82 of these contained charred bone fragments. In addition, three charred chokecherry pits were recovered. Most of the bone had been crushed, probably to extract the marrow. Identifiable fragments were predominantly from bison, with some pronghorn or deer and fish. The artifact assemblage included tools suitable for hunting, butchering, food processing, hide working, woodworking, and stone tool manufacture. The Deerfield site appears to have been periodically reused during late summer or early fall for butchering and pemmican production.

The Battle Creek site (39PN795) is a large, multiple-component site on a stream terrace (Noisat and Campbell 1986). Limited investigations of the site revealed seven hearths exposed in a road and eroded areas at the base of a slope. A dense concentration of artifacts included a chopper, projectile points, bifaces, and scrapers, suggesting that a variety of activities took place at the site, including butchering and hide working. The site contained late Paleoindian, Middle Archaic, and Late Archaic projectile points. Three features were dated at 2150, 2680, and 3630 BP, indicating Middle Archaic and early Late Archaic use of the hearths. Like the Deerfield site, this probably was a periodically reoccupied, warm-season base camp focused on hunting and meat processing. A similar function was proposed for 39LA117, a high-altitude base camp with mixed Middle and Late Archaic components (Sundstrom *et al.* 1994). Paleoindian and Early Archaic materials occur on or in a higher terrace adjacent to the excavated area of the site. This site appears to have been periodically reused during summer or early fall as a hunting base camp. Tools from the mixed Middle and Late Archaic assemblage suggest secondary butchering, hide working, bone marrow extraction, and hunting tool production. No groundstone tools were found. The mixed Paleoindian and Early Archaic assemblage suggests a more limited focus on hunting and primary butchering.

The Jim Pitts site may provide another example of a large, multiple-component hunting base camp focused on meat processing and hunting tool production; analysis of the site is in progress (Donohue and Hanenberger 1993). The site lies at the border of the Red Valley and the interior Black Hills. The site contains Paleoindian, Middle Archaic, and Late Archaic components.

The Oatman Spring (39PN150) and Buck Spring (39CU628) sites may also fit the pattern of multiple-component, periodically reused hunting base camps in the interior Black Hills. Oatman Spring was test-excavated, but Buck Spring is known only from surface investigations. The Oatman Spring site contains Middle Archaic, Late Archaic, and Late Prehistoric components (P. Miller 1990). Artifacts and bone from the site suggest that it was used principally during the Archaic period as a habitation site from which hunting operations were based. The Buck Spring site contained a possible Late Archaic or Late Prehistoric projectile point fragment and two basally notched points probably assignable to the McKean complex. This is a large habitation site with a

dense scatter of tools and waste flakes, including a single groundstone artifact (Noisat 1992a). Two contiguous sites, 39CU330 and 39CU331, also fit the interior Black Hills warm-season hunting base camp pattern (Noisat 1992a). These sites may have been used only during the Middle Archaic period; however, they are untested and may ultimately produce materials assignable to other periods. Both sites lie on a stream terrace. Site 39CU331 contained bifaces, unifacial flake tools, spokeshaves, drills, punches, hammerstones, grinding stones, cores, decortication flakes (flakes with the exterior rind of a core), and thinning flakes. Blades and discoidal blade cores were also found. No features were noted; however, 11 rocks interpreted as boiling stones were recovered. These remains indicate a periodically reused base camp. Associated activities include production of bifaces, blade tools, and shafts, butchering, marrow extraction, and hide working. A grid of shovel probes revealed the presence of distinct activity areas related to piercing, biface production, uniface production, uniface use, and shaft notching. This suggests a camp at which hunting tool production and other hunt-related activities, such as hide working, took place. The adjacent site 39CU330 is a camp and stone tool workshop. Another multiple component spring-side site is 39CU843, Prairie Dog Spring. It contained a scatter of chipped stone artifacts at and below surface, including Middle Archaic, Late Archaic, and Late Prehistoric projectile points (Jones 2006).

Several chipped stone artifact scatters in the interior Black Hills also appear to represent reoccupied warm-season base camps with Middle Archaic components. Site 39CU989 is a large scatter of artifacts extending across a draw and surrounding ridge tops (Dandridge and Rossman 1991). Scrapers, preforms, a McKean lanceolate point, and waste flakes were found on the surface of the site. The Forest Jewel site, 39CU1172, also extends across a draw and surrounding ridge tops. A possible Late Paleoindian projectile point, a Kolterman/Landers point, Duncan/Hanna dart points, and arrow points, as well as a varied assemblage of tools and flakes were found at this site (Williams and Donohue 1992; Jones 2006). These sites have dense artifact concentrations at surface, as do the multiple-component base camps described above.

The Ditch Creek site also appears to be a warm-season hunting base camp in the interior Black Hills (Tratebas and Vagstad 1979; Tratebas 1986). The tool assemblage included projectile points, scrapers, flake tools, and small knives. The site contained a series of thin charcoal lenses associated with peaks in artifact density, apparently representing a series of reoccupations. Based on projectile point distribution, most of these occupations can be dated to the McKean complex of the Middle Archaic. At least one Late Archaic component and a scant Late Prehistoric component also occurred at the site. Two points with rounded stems occurred below an Oxbow level at the Ditch Creek site, but these have not been securely typed or dated. The tool assemblage indicates a habitation site with a tool kit indicating bifacial tool repair, including resharpening and rehafting.

Several small Middle Archaic sites in the interior Black Hills represent single-use camps used as tool-stone procurement and chipping stations. These include 39CU78 (Noisat 1990b), 39CU93 (Williams 1993a), and 39PN218 (Noisat 1988). The sites generally include cores, chipping debris, and either single hearths or no features. Site 39CU1145 is similar but exhibits multiple episodes of use dating to the Middle Archaic, Late Archaic, and Late Prehistoric (Williams 1993b). These sites occur in a variety of settings near chert outcrops. An analysis of surface collections from the Black Hills indicated that the higher elevations were used during summer and fall for multiple-activity habitations and hunt-related activities including butchering, bifacial tool production, and shaft repair (Tratebas 1986). The Hogback ridges and canyons, in contrast, were used primarily during the cold seasons for tool manufacturing and hide working and for sheltered camps. The

high incidence of nonlocal tool-stone was interpreted as indicating a seasonal round covering a large area extending outward from all sides of the Black Hills (Tratebas 1986).

Four small Middle Archaic campsites in the southern Black Hills (Wheeler 1957) also indicate a diverse food base. The Kolterman site contained deer, cottontail, bison, and gopher bone. The Harney site contained bison and prairie dog bone. The Landers site contained bison, deer, and pronghorn. These sites had mixed tool kits and variants of McKean, Duncan, Hanna, and Oxbow points. A rock shelter, 39CU1310, contained butchered pronghorn bones in a level radiocarbon dated at 5490 BP (Jones 2006). Two artifact scatters in the southern Black Hills contained Middle Archaic projectile points (39FA842 and 39FA854).

The eastern and western foothills zones contain some large, multiple-component camps, such as McKean and Lissolo Cave. Large, open-air sites such as 39CU271 in forest-grasslands boundary zones suggest wholesale plant-food processing, probably for winter storage. A complex picture of seasonal land use is beginning to emerge from these preliminary data. For now, it is not possible to reconstruct the complete seasonal round of movement of Middle Archaic groups in and around the Black Hills; however, it is clear that regular patterns of seasonal movement governed land use during this period.

Although not well studied, pit houses occur in Middle Archaic sites in the Black Hills. Pit houses first appeared in the Northwestern Plains during the Early Archaic period (Frison 1991:83–86; Larson 1997); most date toward the end of the period. These usually appear as deep, circular stains, sometimes with central post-molds. Others are oval with multiple post-holes along the long axis. Both types contain numerous features: cache pits, fire-pits, and grinding stones (Frison 1991:84; Larson 1997). Most of these are in intermontane basins. Middle Archaic pit houses are essentially similar. The McKean site contained at least one pit house feature (Kornfeld *et al.* 1995; Frison 1991:97). It was a dish-shaped pit, about 2.5 meters in diameter, surrounded by small, irregularly shaped stains. A straight-sided fire-pit and other small features occurred inside the pit house feature. The original investigator of the McKean site noted a different circular depression about 2.5 meters in diameter and about 45 cm deep; however, he could not tell if the feature was of cultural origin (Mulloy 1954:442). A large circular depression was noted at the Harbison site, but this did not appear to be cultural and was not fully tested (Sundstrom 1981b). Two winter habitations in the Hogback (George Hey and 39FA458) are in relatively unsheltered ridgetop locations. Based on their locations, one can speculate that these represent pit house occupations; however, excavation methods were not adequate to detect the presence of pit house features at either site (Tratebas and Vagstad 1979; Haug *et al.* 1980).

Rock shelters were not used as much during the Middle Archaic as during other periods of Black Hills prehistory. Five sites provide evidence of intensive, repeated occupation of rock shelters. The Belle and Mule Creek rock shelters in the northwestern foothills both provide evidence of multiple occupations (Wheeler 1957; Kornfeld *et al.* 1995). Component B of Belle Rock shelter contained Hanna points, knives, scrapers, utilized flakes, and a chopper. Two hearths were present in this level, along with remains of bison, deer, pronghorn, and shellfish. Component C contained McKean lanceolate points, knives, end scrapers, a palette, and a piece of hematite. This level contained three hearths and crushed bone fragments. Component C also contained many extremely thin flakes (Kornfeld *et al.* 1995). Component D of Mule Creek Rock shelter contained McKean Lanceolate, Duncan, and Hanna points, knives, drills, flake scrapers, an end scraper,

manos, a grinding slab, and a pestle. The seven hearths included stone-filled basins and stone platforms. Food scrap included bison, deer or pronghorn, canid, beaver, grouse, and shellfish. Both Mule Creek and Belle rock shelters appear to have served as periodically reoccupied, seasonal habitation sites. Seasonality indicators are limited; however, the presence of shellfish suggests a warm-season occupation. These sites were used many times and contain diverse kinds of food remains. The Boulder Creek and Red Canyon rock shelters in the northern Black Hills and the Beaver Creek site in the southern sector echo this pattern of reoccupation of favored sites and use of a variety of resources (Donohue *et al.* 1995; Schneider *et al.* 1997; L. Alex 1991; Martin *et al.* 1993). Middle Archaic material from Boulder Creek was interpreted as the remains of a winter base camp for a small family group (Donohue *et al.* 1995). These patterns are reminiscent of Archaic sites in the Bighorns, with long records of a foothills-based broad-spectrum adaptation distinct from the plains adaptation oriented toward big game (Husted 1969, 1995; Black 1991). Excavations at 39CU1310 were limited to a single test unit, but this indicated that the shelter was used at least long enough to butcher some pronghorn (Jones 2006).

As is typical of the Northwestern Plains, a wide variety of hearth types characterizes Middle Archaic sites in the Black Hills, from plain to rock-lined, shallow basins to deep cylindrical pits. Caches are another distinctive Middle Archaic feature type. Two tool caches were found at the McKean site (Kornfeld *et al.* 1995). The Harbison site contained two caches of tool-stone (Sundstrom 1981b). Mano-metate sets had been cached at Lissolo Cave, Miner Rattlesnake, and a small rock shelter near the George Hey site. This extensive use of caching implies a scheduled round of movements. Some foraging or collecting-based subsistence systems require caching to operate efficiently (Kornfeld *et al.* 1990).

The numerous grinding stones found in Middle Archaic sites have been interpreted as evidence of extensive use of plant foods. More direct evidence for plant use comes from several Black Hills sites. The George Hey site contained a few chenopod and grass seeds (Haberman 1986a). Re-excavation of the McKean site yielded charred remains of one *Chenopodium* and one buffaloberry seed, ten ponderosa pine seeds, and nine prickly pear cactus areoles (Latady and Dueholm 1985; Kornfeld *et al.* 1995). While these are not sufficiently abundant to suggest intensive use of plant foods, some use is clearly indicated, especially by the prickly pear remains. Belle Rock shelter contained wild plum pits; however, these were not clearly of cultural origin. The Beaver Creek site contained "large quantities" of charred seeds (L. Alex 1991:49), but they remain unstudied. Site 39FA307 had a grinding slab in association with ponderosa pine seeds. This suggests, but by no means confirms, use of this ubiquitous Black Hills food resource (Haug 1979). Use of chokecherry and buffaloberry may be related to pemmican production, based on ethnographic patterns. Many edible plants in the area would not leave behind pollen or seeds. These include various shoots, yucca blossoms, prickly pear pads, and the roots of sego lily, wild onion, and prairie turnip. (See Haberman 1986a for a more complete list.) Other plants may have been consumed raw or dried for storage, rather than cooked or roasted; the seeds of these would likely not preserve. Thus, the amount of plant use suggested by actual plant remains probably is much lower than actually took place. Roasting pits and grinding stones suggest extensive use of seeds. Many edible seeds can be processed for storage by roasting. Most seeds must be ground and/or cooked or roasted to be digestible by humans. The presence of microblade tools also hints at the use of seed-bearing plants, especially grasses, for food. More study is needed before the extent of plant use in the Middle Archaic is understood.

Four Middle Archaic sites in the Black Hills contained small animal remains that probably represent food remains. The Kolterman site assemblage included both cottontail (7 elements) and gopher (3 elements) (Wheeler 1957). Prairie dog was found in the Harney site (Wheeler 1957). The McKean site contained rodent, canid, bird, and frog bone in the Middle Archaic component (Mulloy 1954). The Beaver Creek Rock shelter contained charred bone from fish, frogs, toads, rabbits, and small rodents (Martin *et al.* 1993). In addition, a panel of Archaic rock art in Craven Canyon depicts what appears to be a rabbit snare (Sundstrom 1993a, 2004a).

Several Black Hills sites contained bison bone in Middle Archaic levels, including Harney, Kolterman, Landers, and Lissolo Cave. In all instances, however, the amount of bison bone is small, with deer or pronghorn usually occurring in equal or greater quantity. Deer was the dominant species found in Middle Archaic levels at the McKean site; the only bison recovered in the Middle Archaic levels was a fractured pelvis element interred with a human skull (Mulloy 1954). Deer also dominated the Beaver Creek, George Hey, and Dead Sage assemblages; pronghorn was the main species represented at the Landers site. Lissolo Cave contained bison, elk, and mule deer bone. Deer appears to dominate the Middle Archaic levels of the Beaver Creek rock shelter, although this is not entirely clear from published data (Martin *et al.* 1993). Deer is by far the most prevalent species depicted in Archaic rock art in the Black Hills, although a few mountain sheep, pronghorn, and bison occur as well (Sundstrom 1993a, 2004a).

In general, Middle Archaic sites contain more diverse bone assemblages and less bison than sites dating to earlier and later periods. Large animal bone is typically smashed and/or burned, indicating the importance of marrow extraction during this period. At the Boulder Creek rock shelter in the Black Hills, bone from the Middle Archaic level indicated more intensive bone processing than took place in other periods (Donohue *et al.* 1995). A typical mountain- foothills subsistence economy, rather than a grasslands-oriented economy, is indicated by many of the Middle Archaic sites in western South Dakota.

The Middle Archaic period is marked by a number of innovations. These translate into the archaeological record as a cluster of traits that are rare or absent in earlier periods. These include pit houses, corrals and pounds for communal game procurement, tool and food caches, extensive use of groundstone tools, production of microblades and microtools, large rock-filled roasting pits, very diverse animal and plant remains from food, and features related to pemmican production. Some of these represent true innovations, while others are intensified or expanded versions of traits present in earlier periods. This distinctive cluster of traits is largely restricted to the Rocky Mountains and their outliers, intermontane basins, the broken terrain of the eastern fringe of the high plains in the Dakotas and northwestern Nebraska, and the Black Hills (Black 1991; Frison 1991). These traits suggest a unique and efficient pattern of adaptation that archaeologists are only beginning to understand.

Taken together, Middle Archaic innovations in the Black Hills imply significant changes throughout the cultural system or systems. The most basic and radical of these changes was a shift from a non-scheduled hunting and foraging way of life to a scheduled, logistically organized mode of resource exploitation. This followed innovations in resource use, storage technologies, and stone tool industries. In other words, new items were on the menu, people were able to acquire and store surpluses of desired resources, and new tools were invented to aid in gathering and storing surplus food. The construction of pit houses for repeated seasonal occupation and impoundments for

repeated use in capturing game animals imply a considerable investment in particular places important to the survival of the group. These features were clearly intended for periodic reuse and imply a fixed territory within which a group scheduled major hunting and collecting activities. Pit houses thus far excavated in the northern plains and Rockies are furnished with numerous storage pits, again implying prolonged periods of occupation. Such features are essentially different from the tipi of Late Prehistoric times, which would have been moved every few days or weeks. Caches of tool kits, tool-stone, tool blanks, and grinding stones also attest to scheduling. Storage pits imply food surpluses and food storage technologies. The preponderance of marrow extraction features in Middle Archaic sites suggests wholesale production of pemmican, a food produced specifically for long-term storage. Butchering patterns also confirm the taking of meat for pemmican, rather than immediate consumption (Frison 1991; Fawcett 1985). In short, Middle Archaic life in the Black Hills and surrounding areas was focused on scheduled movements within a well-defined territory.

***Late Archaic and Plains Woodland.*** From about 3000 to 1500 years ago, the Northwestern Plains witnessed the development of several distinct cultural complexes. The first, limited to the upper Powder and Belle Fourche drainages, is the Yonkee complex. A roughly contemporaneous, but much more widespread development is termed the Pelican Lake complex. These were followed in some areas by the Besant complex. In the Black Hills, these represent people who mixed bison hunting with foraging for plants and small animals. Complex communal bison hunts were an important Besant adaptation throughout the northwestern plains.

The Late Archaic of the project area is characterized by two related changes in subsistence. The first is a shift toward greater use of bison. The second is a shift away from the diverse, broad-spectrum subsistence of the Middle Archaic toward a more limited and specialized subsistence pattern. While the remains left by the communal bison hunters of the Wyoming and Montana plains are impressive, it is clear that not all Late Archaic groups in the Black Hills were specialized bison-hunters. Late Archaic levels of the McKean site contained shellfish, bison, pronghorn, frog, canid, and bird remains, of which shellfish, bison and pronghorn were by far dominant (Mulloy 1954). By contrast, the Late Archaic level of the Lissolo Cave site contained only bison (Steege and Paulley 1964). Similarly, a test unit at a rock shelter site, 39CU1310, had pronghorn in the Middle Archaic level and bison in the Late Archaic level (Jones 2006). Probable Late Archaic levels at 48CK46 contained bison, deer and pronghorn bone (Wheeler 1957; Kornfeld *et al.* 1995). Probable Late Archaic material at 48WE320 included many different animals (McKibbin and Metcalf 1987; McKibbin 1988). Small, unidentified bone fragments were also associated with a probable Besant component at 48CK864 (Kornfeld *et al.* 1995). A single, unidentifiable bone fragment was reported from the large fire-pit complex at 39CU271 (Reher pers. comm. 1993). Most bone at these sites was crushed, suggesting marrow extraction for pemmican production.

Along the Powder and Belle Fourche rivers, several bison kill sites have been assigned to the Yonkee complex. Dates on these sites cluster between 3100 and 2600 BP (Frison 1991). The Yonkee site is a bison kill located near the Powder River in southeastern Montana. Two other Yonkee bison kill sites, Mavrakis-Bentzen-Roberts and Powder River, were subsequently found along the Powder River in Wyoming (Frison 1991:195–196). All three of these were communal bison kills accomplished by driving herds into arroyo traps. At Mavrakis-Bentzen-Roberts, the arroyo trap was enhanced by a corral or other structure (Frison 1991:105). A cliff drive, the Kobold Buffalo Jump, in southeastern Montana is another type of Yonkee bison kill site (Frison 1991).

These sites appear to have been used in late fall and winter. A different emphasis is indicated by site 48CK1391, a Yonkee site located on the Belle Fourche River closer to the Black Hills. There, pronghorn made up most of the bone. This and other materials at the site suggested generalized hunting and gathering, rather than a communal hunt (McKibbin *et al.* 1988). The site was dated at about 2700 BP.

A site in the eastern Black Hills contained evidence for early Late Archaic use of tipi-like habitation structures. The Hermosa site contained 30 tipi rings. An excavated ring contained a Pelican Lake projectile point and two points identified as Yonkee variants (Hovde 1983). The excavated ring contained the remains of a cleaned-out interior hearth and a reused exterior hearth or roasting pit. Grinding stones, hammerstones, and a mixed chipped stone tool assemblage were found. These indicate that butchering and plant-food processing took place at the site. A warm-season occupation was hypothesized for the site, based on its unsheltered location and the configuration of the tipi rings (Hovde 1983). A Yonkee point was also found at the Buster Hill site, where materials from Late Paleoindian through Late Prehistoric age were mixed in a shallow deposit (Hannus *et al.* 1997). Site 39FA599 in the southern Black Hills consisted only of a Yonkee projectile point and was not test excavated.

Little is currently known of either Plains Woodland or Late Archaic developments in the Black Hills. A few very general observations can be made. First, the intense use of various Black Hills niches that typified the Middle Archaic seems to have been abandoned at this time in favor of a much more restricted use of the area. While almost as many Late Archaic as Middle Archaic sites exist, the Late Archaic sites are smaller and less diverse. Second, population density seems to have decreased slightly in the Black Hills, perhaps because the residence base had shifted away from mountainous areas and onto the open plains and western periphery. In the latter areas, large, complex communal bison hunts appear to have been the lynchpin of the subsistence round. Third, at least weak Woodland influences were being felt around the northern, southern, and eastern peripheries of the Black Hills, although neither villages nor incipient horticulture appeared.

One study found that the interior Black Hills were used for seasonal base camps, smaller hunting camps, and small, sheltered winter camps, while use of the southern Black Hills was restricted to hunting and butchering stations (Tratebas 1986). Sites in the western and southern foothills probably represent the camps of plains-based communal bison hunters. These site types reflect a renewed emphasis on hunting and continuation of the pattern of multiple subsistence bases co-occurring in the area.

Only a few small Late Archaic components have been excavated in the Black Hills. A Late Archaic bison kill was excavated in the western Black Hills, but the results of the project remain unreported (Frison 1978). Several rock shelter sites in the interior Black Hills and Hogback contain small Besant assemblages including stone tools and ceramics. These appear to represent short-term hunting camps. Pelican Lake and Besant projectile points, as well as a few pieces of Besant pottery, have been found in the Black Hills. In addition, a style of small projectile points with very narrow notches, straight base and sides, and narrow blade, and usually lacking basal grinding, has been tentatively identified as a late Pelican Lake derivative (Tratebas 1979a). Several other corner-notched varieties found in the Black Hills may be related. Some of these co-occur in sites (Tratebas 1979a). The upper level of the McKean site contained corner-notched points in a component otherwise similar to the early Middle Archaic component at the site (Mulloy 1954). Lissolo Cave

in the southwestern Black Hills also contained two sizes of corner-notched points in levels above an early McKean level (Steege and Paulley 1964). The points apparently shifted from large, eared types to smaller, more definitely corner-notched types. Whether a similar development took place elsewhere in the Black Hills is not known at this time, but points similar to both groups have been found.

Site 39FA452 was a single component, short-term, warm season camp occupied by a small group. No features were found, but artifacts indicated a variety of activities. These included corner-notched projectile points, bifaces, scrapers, bifacially and unifacially retouched flakes, a notched flake, utilized flakes, preforms, drills, spokeshaves, a core, flakes, and a mano. A small side-notched point of a type used for arrows suggests a terminal Late Archaic date for the site; however, no complex with corner-notched points has yet been defined for the terminal Late Archaic in the Black Hills. This site compares favorably with a Late Archaic site type found in Wyoming-Montana foothills regions and radiocarbon dated at 1350 BP (Frison 1978). Projectile points include five corner-notched specimens reminiscent of Pelican Lake and Avonlea types. A similar pattern may be represented by 39FA409 (Haug *et al.* 1980). This small site at the mouth of Red Canyon contained two Pelican Lake points, a utilized flake, a drill, a core, chipping debris, and a mano. While these are suggestive of a single-use, short term base camp, most of the site was destroyed prior to investigation, and the small sample available for study may not be representative of the site as a whole. At 39FA833, a surface artifact scatter contained an Agate Basin projectile point, as well as a corner-notched Late Archaic point. The site was test-excavated but contained no intact buried deposits (Haug *et al.* 1992).

Besant points are less common than Pelican Lake types in the Black Hills. About twice as many Pelican Lake as Besant components have been recognized. Two hunting campsites provide specific evidence of Besant complex use of the western Black Hills periphery. Site 48CK209 is a small site with two activity areas. The first area had a hearth containing red ocher, a large Besant projectile point, ovate knives, and antlers made into stone tool flakers. A single posthole occurred nearby, in association with another Besant point, an endscraper, a drill, retouched flakes, and a grinding slab used for processing ocher. This was interpreted as a small campsite at which hunting weapons were manufactured or repaired (Wheeler 1957; Tratebas 1986; Kornfeld *et al.* 1995). The other site is a rock shelter containing two Besant point bases, 48CK34. Most of the material from this site relates to Late Prehistoric arrow manufacturing at a campsite. The much sparser Late Archaic materials appear to represent a short-term camp at which hunting weapons were repaired (Wheeler 1957; Kornfeld *et al.* 1995).

The Mule Creek and Belle rock shelters represent a similar pattern (Wheeler 1957; Kornfeld *et al.* 1995). These contained sparse Late Archaic components overlying denser and more diverse Middle Archaic levels. Although Besant points were not specifically identified, the presence of a potsherd in a mixed Middle and Late Archaic component at Mule Creek shelter strongly suggests a Besant affiliation. The mixed Middle/Late Archaic component at Mule Creek shelter contained bison, deer or pronghorn, coyote, beaver, grouse, and shellfish. Another reoccupied rock shelter site, 48CK864, was also interpreted as a small, temporary camp at which hunting tools were made and repaired. It contained two hearths with small bone fragments. The lower of these was dated at 1720 BP (Kornfeld *et al.* 1995). This date fits well with dates from Besant sites west of the Black Hills, such as Ruby (1670 and 1800 BP; Frison 1991), Muddy Creek (1720 BP; Frison 1991), and Butler-Rissler (1660 BP; Miller *et al.* 1987; Miller and Waitkus 1989).

A much larger rock shelter in the southern Black Hills, 39FA1154, contained rock art. Three kinds of rock art are present: abraded grooves, lightly incised designs, and abstract pecked figures. The lightly incised art is the youngest of these, probably dating to the latter portion of the Late Prehistoric or the early Protohistoric period. The pecked abstract art is older, dating to the later Archaic or early Late Prehistoric period. The abraded grooves seem to fall in between the other two styles at this site (Sundstrom 1993a). A Middle Archaic projectile point and Plains Village ceramics were found on the ridge top directly above the rock shelter, while Woodland body sherds were found eroding from below a layer of roof-fall boulders on which the lightly incised rock art occurs. One cord-marked and one smoothed sherd were found in the eroded cultural horizon. The latter occurrence strongly suggests Besant use of the site before the incised rock art was produced and perhaps corresponding to the abraded groove rock art. A Besant association with the pecked abstract rock art is less likely, given the strong eastern affiliation of the former and the strong western affiliation of the latter (cf. Sundstrom 1993a, 2004a). It appears likely that additional rock art is present on the bottom of the roof-fall boulders. If so, the association between the Woodland pottery and the rock art would be clearer. Fire-cracked rock and chipping debris were also observed eroding from the probable Besant level, suggesting heavy use of the shelter during that time.

Several rock shelters in the interior Black Hills contain Late Archaic components. Sites 39CU154, 39CU113, 39CU154, and 39PN422 are all rock shelter occupations with single components. All are hypothesized to represent small, temporary, post-hunt camps at which game processing and tool repair were the main activities (Noisat 1990b; Tratebas 1986). Site 39CU154 contained a Besant point. A ceramic sherd with grit and sand temper, thick profile, and smoothed outer surface was found on the surface. These characteristics are consistent with Besant/Sonota wares. A radiocarbon date of 1340 BP also agrees with a Besant cultural affiliation. Site 39CU113 was reported as an Early Archaic site; however, the projectile point found there is nearly identical to that from 39CU154 and probably should be reclassified as a Late Archaic Besant variant (Noisat 1990b). (Large corner-notched points are diagnostic of both periods.) Site 39CU113 yielded a radiocarbon date of 2170 BP. This is a bit early for Besant (Frison 1991); however, the site is similar to the other three in its general configuration and content. Another site, 39PN422, was designated only as Late Archaic, and no description of the projectile points was published (Tratebas 1986). The Boulder Creek rock shelter contained an ephemeral Late Archaic or Late Prehistoric occupation suggesting limited use of the site during this period (Donohue *et al.* 1995). The multiple-component Red Canyon rock shelter, in contrast, provided evidence for multiple Late Archaic occupations and for intense use of small game and plant resources. This echoed a pattern seen in Middle Archaic levels at the site. A Late Archaic feature contained large amounts of *Chenopodium* seeds (Schneider *et al.* 1997). Site 39CU1310 had a bison-bearing Late Archaic level overlying a Middle Archaic level with pronghorn bone. This site is hypothesized to be an early-fall hunting camp or butchering station (Jones 2006).

Open-air sites in the southern Black Hills fall into two categories: large, multifunction habitation sites similar to Middle Archaic base camps and often containing multiple components; and small, single-component special activity sites. The large base camp is best exemplified by two sites in the southwestern Black Hills foothills: 48WE320 and 39CU271. Site 48WE320 is a large reoccupied campsite at which 11 activity areas were identified (McKibbin and Metcalf 1987; McKibbin 1988). These activity areas reflect both general and specialized functions. A series of seven radiocarbon dates range from 1550 to 2260 BP, thus spanning most of the Late Archaic period as defined here. Additional upper components were identified as Late Prehistoric (post-700

BP), based on projectile point morphology. Use of the site appears to have been essentially the same throughout its period of occupation. The later Late Archaic components at the site include a Besant component, identified from projectile point morphology and radiocarbon dates.

Surface survey and limited excavation revealed 13 hearths and five burned rock middens; additional hearths and fire-cracked rock middens probably existed in the unexcavated portions of the site. Hearths included several types: small, single-use unlined basin hearths with varying amounts of fire-cracked rock; a slab-lined surface hearth; and large, deep, unlined basin hearths with abundant fire-cracked rock and charcoal in the hearth fill and sometimes with fire-cracked rock middens adjacent to the pits or basins. The latter show evidence of reuse and appear to have been used to heat rocks rather than as surface cooking fires. No roasting or baking pits were associated with the hearths, suggesting that the rock-filled hearths themselves were used for heating material. These hearths may have been used for roasting or baking prickly pear pads or prickly pear or goosefoot seedcakes or for annealing chert cobbles before working them into tools. A few seeds, numerous prickly pear spines, and a moderate amount of heat-altered tool-stone were found in the hearth fill. No burned bone was found in the feature. Besides the abundant prickly pear and sparse goosefoot remains, subsistence data include a moderate amount of bone. Identified bone included deer, pronghorn, jackrabbit, bison, and fox. The Besant occupation included pronghorn, bison, and jackrabbit, and possibly fox and deer, as well. Overall, deer and pronghorn dominated the bone assemblage. Most of the bone was crushed, suggesting marrow extraction for production of pemmican.

The artifact assemblage included complete and broken projectile points, hafted knives, bifaces, scrapers, composite flake tools, a spokeshave, a graver, a borer, and a resharpening flake. A Besant point was dated at 1660 BP based on its association with a dated hearth. Two large, side-notched knives were similarly dated at 1560 BP. A stemmed or broadly corner-notched point was also dated at 1660 BP. One microtool used for scraping was found in sediments below Component A (undated). This tool is similar to microtools found in a Late Archaic component dated to around 2800 BP in the Powder River Basin (McKibbin 1988). Two side scrapers made on blades were present; however, no unmodified blades or blade cores were found. Most tool-stone was local (quartzites and Morrison silicified siltstone). Only five pieces of nonlocal rock (Knife River flint and porcellanite) were present among 2382 artifacts. A few groundstone fragments were found, including a mano-maul. A small piece of unfired clay shaped something like a pipe bowl was also found. This site represents a base camp. Activities included plant-food and meat processing, hide working, bone and wood tool manufacture, and chipped stone tool manufacture and maintenance. A single fetal bison bone suggests a spring occupation, but the prickly pear spines could indicate an early or late summer occupation or a winter occupation.

The Besant component at 48WE320 in the Wyoming Black Hills is of particular interest for the contrast it presents to Besant adaptations defined for the Powder River Basin immediately west of the Black Hills (Frison 1991; McKibbin 1988). A hearth dated at 1660 BP was a double basin filled with fire-cracked rock, prickly pear spines, pine needles and pine seeds. This date compares favorably with dates from the Ruby site (1670 and 1800 BP) and the Muddy Creek site (1720 BP), both large Besant bison kill sites in the Powder River Basin (Frison 1991). In addition, a Besant point was found in association with this hearth. The diverse food remains associated with the Besant component at 48WE320 (mainly prickly pear, pronghorn and jackrabbit) strongly suggest a broad-spectrum subsistence pattern based on a schedule round of seasonal foraging and hunting.

Although it is possible that 48WE320 represents the seasonal camp of a bison hunting based culture, the near total lack of porcellanite or other western tool-stone points instead to a localized group that spent most or all of the year in the Black Hills and foothills.

The Deerfield site in the high Limestones echoes the pattern of large, multiple-component base camps focused on plant-food processing and pemmican production seen at Hogback and foothills sites like 48WE320, 39CU271, and McKean. Unfortunately Deerfield site components dating to the Paleoindian, Middle Archaic, Late Archaic, Late Prehistoric and Protohistoric periods were badly mixed in shallow deposits and could not be clearly identified (Buechler 1984). An archaeological salvage of the site after disturbance by construction activities located about 200 hearths and fire-cracked rock scatters. Also found were tools for hunting, butchering, food processing, hide working, woodworking, and stone tool manufacture. Although most bone at the site was extremely fragmentary, numerous bison elements from at least four individuals, several pronghorn or deer elements, and the bones of at least one fish were identified. Less than half of the hearths (82) contained charred bone fragments. Evidence of plant use was limited to three charred chokecherry pits, suggesting a late summer occupation of the site. A series of 22 radiocarbon dates indicates use of the site from the early Middle Archaic through the Protohistoric period (Buechler 1984:203); Paleoindian projectile points suggest limited earlier use of the site, as well. Diagnostic artifacts and radiocarbon dates indicate that the site was most intensively used during the Middle and Late Archaic periods.

Several features were dated to the Late Archaic based on radiocarbon dates and projectile point morphology. Two Late Archaic charcoal stains contained charcoal and chipping debris with no seeds or bone. Three Late Archaic rock- and charcoal-filled hearths or pits were found. One contained chipping debris and a Besant point, and another had chipping debris and charred bone fragments. A Late Archaic rock-lined hearth contained charcoal, chipping debris, and charred bone. Feature 120 was a concentration of fired quartz, with an associated cache of tool-stone, including four large flakes of dendritic chert and a corner-notched chert arrow point base. A charcoal stain with burned bone was 30 cm away, with scatter of chipping debris extending around both features. Feature 107 was a large concentration of fire-cracked rock, burned wood, ash, and chipped stone tools and debris (including several point fragments, end scrapers, biface fragments, drill fragments, numerous flake tools, and unmodified flakes), along with charred and uncharred bone fragments. A radiocarbon date of 390 BP was inconsistent with the projectile points, which were all Pelican Lake and Besant variants. Feature 122 was a very large rock-filled pit with charred bone, a Late Archaic point, a stone knife, and a retouched flake tool. The form of the features indicated at least two episodes of use. This feature was dated at 940 and 600 BP, suggesting use of the feature into the Late Prehistoric period, as well.

The Deerfield site suggests very long-term use of the central Black Hills by groups following a scheduled round of food acquisition. Although few plant remains were found in the feature fill, plant-food processing probably was one focus of the site. The broken and crushed bison and deer bone indicate pemmican production. Other aspects of the site suggest general group maintenance activities associated with base camps. Like the large foothills sites, the Deerfield site is located at a prairie-forest boundary; in this case, the southeastern edge of Reynold's Prairie, a large parklike area of rolling, grass-covered hills. This area probably offered good hunting as well as a wide variety of plant-food resources and wood for fires.

Other large, multiple-component sites in the interior Black Hills occur at high-discharge springs. These sites almost invariably contain Late Archaic components, as well as some combination of Paleoindian, Middle Archaic, and Late Prehistoric components. Early Archaic components rarely occur at these sites. Pelican Lake and unclassified corner-notched projectile points are the most common Late Archaic diagnostics at the spring-side camps; however, at least one Besant component has been identified (Noisat and Campbell 1986; Gleichman and Gleichman 1987). These usually are warm-season base camps at which hunting weapon preparation and secondary meat processing took place. Hide working tools are frequently present, as well, but evidence for pemmican production is missing from most of these sites. No structural features have been identified at these sites, but hearths and diverse tool kits confirm their use as temporary base camps. These sites generally lack vertical separation of components; hence, whole site assemblages are considered together.

The Forest Jewel site, 39CU1172, is another very large, multiple-component base camp. It is located on a divide between two perennial springs and on the slopes and terraces leading west of the divide to an intermittent drainage. (Both of these springs have archaeological deposits associated with them, but their ages and cultural affiliations are not known.) Limited test excavation revealed the presence of multiple buried cultural zones in the western portion of the site. Projectile points indicate Late Paleoindian, Middle Archaic, Late Archaic, and Late Prehistoric occupation of the site. A single potsherd was found on the surface. The sherd is thick, quartz-sand or grit tempered, and has a smoothed exterior. This is consistent with descriptions of Besant pottery in the region. A Besant component can tentatively be suggested based on this sherd. The function of this site is not known.

Other Woodland sites are rare in the Black Hills. The only excavated Woodland component was at Mule Creek rock shelter in the northwestern Black Hills (Wheeler 1957). The cultural level contained Woodland pottery and three corner-notched projectile points. Otherwise, the site was reminiscent of Middle Archaic sites in the area. Several varieties of stemmed points found in the southern Black Hills are similar to Woodland types; however, in the absence of pottery, these cannot be considered diagnostic of the period. Corner-notched points in association with Woodland pottery have also been found in the White River Badlands to the east of the Black Hills (Sundstrom and Malone 1982), and pottery sites dating to this period are reported from eastern Wyoming and western Nebraska (Frison 1978, 1991).

During the initial Late Archaic period, population levels diminished in the Black Hills from a peak corresponding to the middle of the Middle Archaic period. Population levels then appear to have increased throughout the Late Archaic, with the exception of the period between 2100 and 1800 BP when population levels appear to have decreased. More radiocarbon dates fall within the last half of the Late Archaic than any other 500-year span of Black Hills prehistory.

This less intensive use of the Black Hills may reflect an increased emphasis on communal bison hunting outside the montane areas. Cultural development during the Late Archaic seems to have taken place in the context of somewhat isolated, local complexes (Sundstrom 1989). These groups had relatively little interaction with outside groups. The presence of Pelican Lake-like components in the Black Hills suggests that a quasi-isolated variant of the complex developed locally. Projectile points similar to Besant and Avonlea types suggest some influence or interaction, but other possible Late Archaic artifacts seem to be limited to the local area. These

suggest that the Black Hills was occupied only seasonally, and then perhaps only during bad winters, except perhaps by a few isolated resident groups practicing a diluted version of the intensive, broad-spectrum economy of the Middle Archaic (Sundstrom 1989).

Two multiple-component sites in high meadows in the northern Black Hills appear to represent warm-season, hunt-related base camps. Site 39LA117 contained mixed Paleoindian and Early Archaic components on the slopes of a higher creek terrace and mixed Middle and Late Archaic components on a lower terrace (Sundstrom *et al.* 1994). The later components appear to represent a summer or early fall base camp focused on secondary butchering and repair and manufacture of tools for hunting and butchering. Bone-marrow extraction may also have taken place there. The Buster Hill site contained a similar assemblage of tools and chipping debris but the various components could not be separated (Hannus *et al.* 1997).

Site 39CU832 contained Late Archaic and Late Prehistoric components. Pelican Lake and Avonlea projectile points, a diverse tool kit, and a scatter of fire-cracked rock were exposed in a road. The site probably represents a seasonal base camp at which tool manufacture and resource processing took place (Gleichman and Gleichman 1987). These sites suggest a pattern of settlement and resource use similar to that of the large spring-side base camps in the southern and western Black Hills. Two ridge top sites near the southern edge of the Limestone Plateau exhibit different patterns. The first, 39CU1118/48WE666, is a temporary camp with Late Archaic (Pelican Lake) and possibly Late Prehistoric components, based on diagnostic projectile points (Harrison 1991). A reworked Duncan point may belong to the Late Archaic materials or may indicate a Middle Archaic component. The site is on the top of a prominent ridge. About 100 flakes, 9 shatter fragments, and a core were observed at the site, along with 3 scrapers, 5 utilized flakes, a retouched flake, and 3 biface fragments. These included a wide variety of tool-stone. This assemblage suggests a base camp. The other ridge top site, 39CU1188, appears to have been used as a stone tool production area (Anderson 1992). The presence of whole and broken projectile points, scrapers, and bifacial knives indicates other activities such as butchering and hide processing. Two cairns were interpreted as possible ceremonial features or markers. This site is on the peak of a ridge where very little soil has developed. The location affords an excellent view of the surrounding terrain. Another site in the interior, 39LA259 was a place where Middle Archaic, Late Archaic, and Late Prehistoric groups obtained local chert and roughed out flakes and tools for later use (Rom 2008).

Other sites in the southern Black Hills are valley bottom base camps. In the Red Valley proper, 39CU1182 is an open-air artifact scatter with a varied tool assemblage. Paleoindian, Middle Archaic, Late Archaic, and Late Prehistoric projectile points were found on and near the surface of this site. Other tools included unifacial flake tools, scrapers, choppers, and a spokeshave. This kind of generalized tool assemblage is most often associated with base camps. Unfortunately, the various components do not appear to be separable. Site 39CU1145 is another multiple-component site in the western Black Hills (Williams and Donohue 1992). The site is on the terraces of an intermittent stream and adjacent slopes. This site contained numerous tools, tool fragments, and chipping debris on the surface, and bone and stone artifacts eroding from a buried soil exposed in cutbanks. The site includes an outcrop of tool-stone and is thought to have functioned primarily for gathering and processing such stone. The site contains a variety of tool types, including projectile point fragments and probable Late Prehistoric ceramics, as well as a stone-ringed hearth and a possible cairn. The artifact assemblage suggests a multipurpose camp placed to take

advantage of easily obtained tool-stone. Site 39FA9 was a small camp site with three cultural levels. The upper level was of Late Prehistoric age. The middle level contained stone-lined basin hearths, a dart point, a trapezoidal end scraper, a palette, a grooved sharpening stone, and a few flakes, as well as deer or pronghorn bone. The lower level contained a Duncan point and a stone-lined saucer-shaped hearth.

Site 39FA1363, described above, contained a Late Archaic projectile point, as well as fire-cracked rock, chipping debris, chipped stone tools, bone, and hearths. A cutbank exposure indicates stratified cultural deposits, apparently of Middle and Late Archaic age. This site in the southern Hogback zone probably was a base camp used sporadically over a period of several millennia. At 39CU2841, a Pelican Lake projectile point was found on the surface, indicating a Late Archaic component; however, the site lacked subsurface archaeological deposits (Williams and Hanenberger 2002).

The reasons for the less intensive use of mountain and foothills areas during the Late Archaic are not clear. There is no evidence that climate changed significantly between this and the preceding period. Instead, Late Archaic innovations may represent increased mobility and exchange of ideas following the more entrenched Early and Middle Archaic periods. With continued mild climates, bison populations may have increased throughout the area. This may have attracted people to grasslands locales and to bison-based subsistence rounds. To the extent that bison herd movements are unpredictable, the seasonal round would have shifted away from carefully scheduled exploitation of stationary resources like plants and deer, toward more flexible seasonal movement. Certainly eastern influences are seen in the introduction of pottery and Besant developments in the project area. Besant people were excellent bison trappers (Frison 1978) whose specialized technology may have given them advantage over the more generalized local Archaic cultures.

***Late Prehistoric and Plains Village.*** Avonlea sites are known from eastern Wyoming and the Black Hills, although such sites are rare in eastern Montana, the Dakotas, and southeastern Montana (Vickers 1994:16). Even in its core area, Avonlea site density is low in comparison with Besant and other complexes (Vickers 1994; Schlesier 1994). While Avonlea-like projectile points are common in the area, nothing resembling Avonlea pottery has been found in or around the Black Hills. Whether sites can be definitely identified as Avonlea based on projectile points alone is questionable. Small, triangular projectile points are ubiquitous in the Late Archaic-Late Prehistoric transition of the northern plains. Points classified as Avonlea on the northwestern plains are virtually identical to points classified as Initial Middle Missouri along the Missouri River Trench (Husted 1969). Black Hills Avonlea, if such exists, is not yet well defined.

For now, some researchers prefer to categorize points only as “small triangular,” rather than tying them to the Avonlea complex (cf. Kornfeld and Reher 1992). Other researchers are comfortable with using points as diagnostic indicators of an Avonlea presence in the Black Hills area (Reeves 1983; Hannus 1994). Others recognize a distinct, but variant, complex—the Beehive complex—in the southern Northwestern Plains, including the Black Hills (Morlan 1988; Greiser 1994; Frison 1991). This discrepancy means that the number of identified Avonlea sites in the area is skewed by the diverse and sometimes conflicting classificatory systems used by various researchers.

In the Black Hills, 39FA101 was hypothesized to represent an intrusion of a plains-adapted Avonlea group (Tratebas 1986). Located in the southern zone, this site contained chipping debris, Avonlea points, scrapers, a spokeshave, a graver, and a drill. It appears to have been the locus of a hunting and tool-making camp. No features or subsistence remains were found on the surface of the site. Other possible Avonlea hunting camps include 39CU625 and 39CU651 in the western Black Hills. Site 39CU625 is a scatter of artifacts on a ridge top (Noisat 1990b). The surface of the site contained a small, delicate, corner-notched point, a larger point fragment, bone beads, and various other tools. No features were observed. The Lower Corral Spring site, 39CU651, is located at a spring. Test excavations yielded several point bases (Avonlea and possible Early Archaic types), bifaces, a few flakes, an arrow shaft fragment, and chipping debris. Several hearths were found, including two dated at 2280 BP and 1190 BP (Noisat 1989). The Mud Spring site (39CU773) is a dense concentration of stone artifacts, bone, and fire-cracked rock near a permanent spring in the western Limestone zone (Noisat and Campbell 1986). The site received limited test excavation. Projectile points found at the site include Paleoindian, Middle Archaic (Oxbow and McKean), Late Archaic (Besant), and Late Prehistoric (Avonlea and Prairie Side-Notched) types. The site also contained bifaces, a combination end and sidescraper, and burins. Tool-stone included local types and obsidian from Obsidian Cliff, Wyoming. This site appears to represent a warm-weather hunting base camp. Site 39CU1240, also in the western Limestones, yielded two radiocarbon dates in the initial Late Prehistoric range, as well as an Avonlea projectile point and an unspecified arrow point (Jones 2006). This spring-side site apparently was a base camp used by groups entering the area from the west.

Five other sites in the interior Black Hills appear to represent short-term Avonlea camps or stone tool production areas. A bench above a draw contained the remains of a small camp and stone tool workshop area (39PN218). This site contained local chert and small amounts of yellow jasper and porcellanite. Surface observation and limited test excavation yielded chipping debris, a knife, a core, and a point of either Oxbow or Avonlea affiliation (Noisat 1988). Site 39CU832 is located along a stream. The surface of the site contained a Pelican Lake point and an Avonlea-like point, a knife, retouched flake, a scraping tool, chipping debris, a small amount of unidentifiable bone, and a scatter of fire-cracked rock. The site was classified as a seasonal base camp at which tool manufacturing and resource processing took place (Gleichman and Gleichman 1987). Site 39CU1251 contained an Avonlea point, knife fragments, flakes, and cores of local stone. No features were observed at the site and its function is undetermined (P. Miller 1993). Site 39LA165 was recorded as a possible Avonlea tool-stone procurement site. It contained large amounts of chipping debris and cores and a single scraper, all of opaque to clear white chert (Noisat and Buechler 1992). The Wayne Compton site, 39PN1119, contained a possible Avonlea point and chipping debris of porcellanite and local cherts and quartzites (Sheveland 1992). A few unidentified seed casings were also found at the site. No features were observed on the surface or in test units at the site.

Three other possible Avonlea sites have been recorded in the southern Black Hills. Test excavations at 39FA327 revealed a lipped basin hearth, a charcoal stain, unidentifiable bone fragments, and chipping debris (Noisat and Buechler 1992). A possible Avonlea point fragment and flakes of local stone were exposed in a blowout at 39FA1216 (Agard 1992). A nearby bedrock exposure contained possible Avonlea and Pelican Lake projectile point fragments, flakes, utilized flakes, and a scraper, all of local stone (Agard 1992).

Information on Avonlea occupations in the Black Hills comes from test excavations at 39FA35 (Haug *et al.* 1992) and the Movie Draw site (Sellet and Fosha 2007). The latter contained Pelican Lake and possible Avonlea points, as well as 15 other chipped stone tools, a groundstone tool, a socketed antler artifact, a possible bone tool, and 155 flakes of local quartzite and chalcedony. Food remains included pocket gopher, eastern cottontail, prairie dog, raven, and mussel. The site was hypothesized to represent a short-term camp.

The Movie Draw site (39CU1401) in the southeastern Black Hills contained about three meters of sediment, as revealed in two small test units (Sellet and Fosha 2007). The main occupation of the site dates to the Late Archaic to Late Prehistoric transition. The site has an Avonlea component with arrow points dated at 550 CE (ca. 1500 BP), making it the earliest Avonlea site in South Dakota. Occupation of the rock shelter continued for another 650 years. Some earlier components lay beneath the Avonlea layers, but these did not contain artifacts that could be linked to a specific period. Bone scrap at the site included pronghorn, deer, and bison, as well as smaller animals such as rabbits, prairie dogs, and birds. At least some use of the shelter took place in late summer or early fall. Besides typical Avonlea points, the site contained Late Prehistoric side-notched arrow points and ceramics of smoothed and cord-marked varieties with no visible tempering.

Apparently Avonlea groups did not make intensive use of the Black Hills. Food remains suggest use of resources other than bison; however, we cannot tell whether this was a seasonal or long-term variant of the more typical Avonlea pattern of large-scale bison hunting, or whether it indicates an entirely different pattern for the Black Hills Avonlea. At present, it is impossible to draw firm conclusions about the extent or duration of Avonlea use of the Black Hills. The sites investigated so far suggest an emphasis on tool-stone procurement and seasonal hunting by special task groups. Two sites, 39FA35 and 39CU773, look more like base camps occupied by the entire social unit; however, their affiliation with the Avonlea complex is not certain, because each contained non-Avonlea material.

Recent research has placed the Avonlea-like components in the Black Hills in the Beehive complex, a southern Avonlea variant (Morlan 1988; Greiser 1994; Hannus 1994). The Beehive complex is hypothesized to represent proto-Kiowa Apache (Naishan Dene) groups (Schlesier 1994; Greiser 1994). If this affiliation is correct, the small number of Avonlea sites in the Black Hills is puzzling, as both ethnographic and historical sources name the Black Hills as Kiowa and Kiowa Apache territory in the Late Prehistoric and Protohistoric periods (Schlesier 1994:329). The hypothesized Kiowa Apache affiliation with Avonlea sites in the Black Hills is ripe for further study, including reanalysis of collections and other site data and excavation projects that can lead to more secure dating and definition of the Avonlea or Beehive complex in the area.

Several types of Late Prehistoric and Plains Village period sites have been excavated in the Black Hills. These include tipi rings (Haug *et al.* 1980; Tratebas 1979b; Hanenberger 2004a); a large bison pit trap (Reher and Frison 1980); a stone alignment probably used for communal bison drives (39CU823) and an associated camp site (39CU357) with chipped stone tools and flakes, manos, and a hearth (Sudderth 1964; Galindo 2004); temporary camps used by Middle Missouri village dwellers on hunting or tool-stone procurement expeditions (L. Alex 1979c; R. Alex 1981b); a possible Crow (Absoroka) encampment (Wheeler 1957); and two settlements possibly linked to Middle Missouri cultures (R. Alex 1981b). Surface collections suggest use of the interior Black Hills for camps and use of the Hogback for various kinds of tool making and resource gathering

(Tratebas 1986). The upper level of 39CU2839 contained a mix of Late Archaic, Late Prehistoric/Plains Village, and Historic artifacts. This level contained a few pieces of thin, lightly incised pottery in a mixed cultural level with Late Archaic, Late Prehistoric, and Historic artifacts. The pottery sherds are too small for secure classification, but they most closely resemble Extended Coalescent wares from the Middle Missouri area. Other possible Plains Village artifacts in this cultural level were a piece of a catlinite smoking pipe and several Badlands knives. This mixed cultural layer probably represents a series of short-term camps, but no features were found and artifacts from the various occupations could not be reliably separated (Williams and Hanenberger 2002). The Late Prehistoric level of 39FA9 had stone-lined basin and pit hearths, a large knife, a flake scraper, an arrow shaft cutter, a small stemmed arrow point, chipping debris, and deer or pronghorn bone (Wheeler 1957).

A set of 12 extensive tipi ring complexes in the vicinity of Tepee and Hell Canyons in the southern Black Hills containing Late Prehistoric projectile points are assumed to have been used through this, and possibly earlier, periods (Sundstrom 1999). Since no ceramics occur among the thousands of artifacts observed in the area, these sites lack any clear connection to Plains Village cultures. These tipi rings are probably the remains of winter camps used over many centuries, if not millennia. Although artifacts were abundant on the surface and in eroded areas of these sites, no metal or glass items were found. Given the good surface visibility and the large number of subsurface exposures examined, this was taken to indicate that use of these winter camps did not continue beyond the Late Prehistoric period. This apparent abandonment of what had been a popular locale probably reflects the widespread adoption of horses, which did not favor penetration into the heavily wooded interior Black Hills, and metal tools, which ended the attractiveness of the large chert quarries that overlook the cluster of tipi ring sites.

By contrast, test excavations at a stone circle site in the eastern Black Hills, 39FA1604, yielded a large amount of chipping debris, as well as a few tools and a handful of small pottery sherds (Hanenberger 2004a). The site lies on a bench above Elm Creek and was estimated to date around 1500 to 1800 CE. It contained a variety of tools, suggesting the presence of a complete social unit—men, women, and children. These included a biface, a drill made from a projectile point, a denticulate, an end scraper, some retouched flakes, a hammerstone, and an anvil stone similar to historic-era chokecherry-pounding stones. Nearly all the tools were made of Hogback Quartzite, a readily available local stone. Small amounts of fire-cracked rock and animal bone were also present.

The Sanson Buffalo Jump (39CU2) in the eastern Black Hills is a classic Late Prehistoric cliff drive site. Very limited testing revealed chipped stone tools and bison bone. Hearths were dated to 920 and 1200 BP (Agenbroad 1990), and bison bone was dated to around 650 BP (Vawser and Schilling 2013). Stone circles near the buffalo jump were not investigated. Excavations at a tipi ring in the southern Black Hills (39FA392) revealed a winter camp occupied around 1000 years ago (Tratebas 1979b). A large pit hearth in the center of the dwelling contained the partial skeletons of an adult and a newborn, accompanied by a bone awl. Artifacts found outside the hearth included end scrapers, grinding slab and mano fragments, another bone awl, and chipped stone flake tools and debitage.

Site 39CU357 in the eastern Black Hills was a deeply buried (50–60 cm below surface) layer of chipped stone debris, a hearth, charcoal, fragments of two manos, bison and deer bone, an end

scraper, and a portion of a Late Prehistoric arrow point (Sudderth 1964). This site lies near a roughly linear stone alignment possibly used for buffalo drives (39CU823), and thus may be associated with that site (Galindo 2004:34).

Site 39MD487 is a limestone cave about 32 meters in length. Two test excavation units revealed hearths, and abundant deer and bison bone. Radiocarbon dates on hearth fill and charcoal yielded dates of 1250, 1100, 420, 380, and 200 BP, as well as one modern date (Webb *et al.* 1998). A small tunnel was not explored but may indicate a larger cave or another opening. Besides animal bone and hearths, the site contained two sherds of possible early Middle Missouri affiliation, a small scraper, and a flake.

The presence of Middle Missouri Tradition pottery in the Black Hills is a matter of debate. George Frison described a possible Crow vessel from the southwestern periphery (Frison 1976:37). Known from a single vessel, referred to as the Newcastle vessel, this type was described as having designs made with cord impressions around the vessel rim. Body sherds had sharp, vertical grooved paddle marks. Frison compared this vessel with ceramics from the Hagan site (Mulloy 1942) and a site near Ludlow Cave (Wood 1971a). All three were identified as Mandan tradition pottery produced by Crow groups or more simply as Crow pottery (Frison 1976). A somewhat pointed globular pot with a high, slightly flaring rim is indicated for this ceramic type. In contrast to Frison, Ann Johnson (1979:24) considered the Newcastle vessel to belong to a formally defined Extended Middle Missouri pottery type known as Fort Yates ware, rather than belonging to the Crow ceramic tradition. This would mean that Middle Missouri villagers carried the vessel in on a visit to the Black Hills, rather than representing a separate, localized ceramic type. Possible Crow ceramics were also found at the Miller Creek and McKean sites in the northwestern foothills; however, ceramics specialists have not confirmed this identification.

A different type of pottery was found at the Blaine site, 39CU1144 (Sundstrom *et al.* 1998). While the Blaine site vessel can clearly be classified as belonging to the “Mandan” ceramic tradition, as opposed to the Intermountain ceramic tradition, its more specific cultural affiliation is not clearly indicated. Thus, the presence of a single Mandan tradition pot at the Blaine site does not necessarily indicate occupation of the site by either Crow or other Middle Missouri Tradition groups. The possibility that the ceramic tradition represented at the Blaine site developed in situ out of a preexisting Besant ceramic tradition also must be considered. The Mandan ceramic tradition as defined by Mulloy (1942) and Frison (1976) recognizes the general eastern (Middle Missouri) affiliation of the tradition, as opposed to the Intermountain ceramic tradition, but is not otherwise useful in defining interassemblage relationships (A. Johnson 1979; L. Alex 1979b; Keyser and Davis 1982). Many of the attributes of the Blaine pot are intermediate between Woodland and Powder River or Middle Missouri/Coalescent tradition types. This would tend to support the possibility of a localized ceramic tradition (Sundstrom *et al.* 1998).

Ceramics also indicate possible Crow use of the McKean site in the northwestern foothills. All but one of the 106 sherds found were in an old backdirt pile; the remaining sherd was shallowly buried in one of the block excavations. Although vessel reconstruction was not possible, the assemblage appeared to represent a single vessel. The vessel appeared to be a shouldered pot with decoration (incised lines, cord-impressions, punctates, and simple-stamped designs) on most of its exterior surface. Carbonized residues suggest that the vessel was used for cooking or other food

preparation (Kornfeld *et al.* 1995). The lack of stratigraphic context and associated cultural material prevented further interpretation of Crow use of the McKean site.

**Protohistoric.** Relatively few sites of Protohistoric age have been discovered in the Black Hills. Ten sites with probable Protohistoric components are currently listed. This compares with 30 identified Late Prehistoric components in the Black Hills (records of South Dakota and Wyoming state archaeologists). In addition, several rock art sites in the Black Hills have been identified as containing Protohistoric motifs (Sundstrom 1993a). Other sites known to have been used by the Lakota and Cheyenne have not been formally recorded. These include the area of the 1857 Lakota gathering near Bear Butte and the warm mineral springs at Hot Springs and Cascade. The historic and protohistoric use of the trail through the Buffalo Gap and another running up the eastern side of the Hills is well documented, as is the use for religious purposes of Devils Tower, Bear Butte, Inyan Kara, and Reynold's Prairie (Sundstrom 1997b).

The Miller Creek site, 48CK47, is a possible Protohistoric site on a creek terrace near the Belle Fourche River (Wheeler 1957). Extensive excavations revealed a shallow deposit of hearths, a small stone circle, arrow shaft abraders, milling slabs, pottery sherds, and an assemblage of stone tools and debitage dominated by Morrison silicified siltstone. Tools included points identified as Late Prehistoric and Late Archaic types, knives, drills, scrapers, and flake tools. A brass ornament, a lead dress weight, and a brass cartridge case were also found. Wheeler interpreted this as a single component campsite of a band or small village engaged in hunting and gathering of shellfish and plants. He believed the ceramics were of Crow affiliation. He attributed the metal objects to a nearby schoolhouse or military visits to the area. The brass hair plate or jingle was harder to explain as unrelated to the Native American materials, but it was poorly provenienced. After 40 years, this remains one of the most potentially informative Protohistoric sites in the Black Hills area; however, the materials have not been reanalyzed to determine their actual age and cultural affiliation.

In the Black Hills, the Mud Spring site, 39CU773, may have been used by Lakota groups as a medicinal bath (P. Miller 1989). No materials were observed at the site during limited test excavations that could be unambiguously recognized as Protohistoric (P. Miller 1989). A historic artifact scatter covers part of the site and obscures the presence of Protohistoric materials, if any are indeed present. This site has Late Prehistoric (Prairie Side-Notched), Avonlea, Besant, Middle Archaic McKean, Oxbow, and Paleoindian materials within a dense concentration of lithics, bone, and fire-cracked rock. The site is located at a perennial spring in the western Limestone zone. It was interpreted as a warm-weather hunting base-camp or target camp (P. Miller 1989; Noisat and Campbell 1986).

A metal arrowhead, a badly rusted metal knife blade or arrowhead, and glass trade beads were found on and near the surface of the McKean site in the northwestern foothills (Kornfeld *et al.* 1995). The arrowheads were dated to the period after 1850, because they have serrated bases. An assemblage of 92 glass trade beads was recovered from anthills in the upper portions of the site. These match beads traded at Fort Laramie between 1834 and 1875 and are identified as Lakota. The researchers ventured no further interpretation of the Lakota material at McKean (Kornfeld *et al.* 1995).

Information on protohistoric use of Reynold's Prairie, a high altitude "bald" in the western Limestones, is available from several sources. The first is the report of a huge stack of elk antlers observed in Reynold's Prairie by the Custer expedition of 1874 (Ludlow 1875). Whether this pile of antlers had symbolic or religious meaning is not known. It does attest to good hunting in the high balds. That this area of the Black Hills had special (probably sacred) significance is clear from its prominent depiction on Bad Heart Bull's map of the Black Hills (Bad Heart Bull 1967). Two archaeological sites, Deerfield (39PN214) and Kenzy (39PN1081), also provide evidence of possible protohistoric use of Reynold's Prairie.

Deerfield is a large, multiple-component campsite (Buechler 1984). Its main period of use was in the Middle Archaic and Late Prehistoric periods. Unfortunately, the shallow deposition and disturbed condition of the site did not permit a clear view of protohistoric use of the site area. Activities indicated for the various components of the Deerfield site include hunting, butchering, food processing, hide working, woodworking, and stone tool manufacture. Bison, other large mammals, fish, and chokecherry food scraps were found at the site. An infant burial was found in an undated hearth. Protohistoric occupation of the Deerfield site is hypothesized based on radiocarbon dates ranging from 460 to 300 years BP (Buechler 1984:203), but it contained no recognizable Euroamerican artifacts. The reported dates appear too early for the Protohistoric period as it is currently defined for the Black Hills; thus, the Deerfield data are of limited use in reconstructing Protohistoric use of the region.

The Kenzy site is a bison bone bed in a valley leading to Reynold's Prairie (Saunders *et al.* 1994). The bone was dated at 1610–1760 CE, or Late Prehistoric to early contact era. The site contained only expedient bone tools; however, cut marks on bone indicated the use of metal tools. Activities indicated at the site include bison procurement and processing, including hide-procurement and marrow extraction. The site apparently represents an opportunistic or communal hunt conducted on foot. The lack of metal tools at the site suggests that metal was carefully preserved for reuse during its initial period of use in the area (Saunders *et al.* 1994).

Two artifact scatters in association with historic habitations have been identified as possible Protohistoric era sites. In the western Limestones, 39CU21 is a scatter of retouched glass flakes, scraper-like retouched glass flakes, and a glass graver, along with chipping debris from stone tool production (Tratebas 1978:51–52). Some of the glass artifacts may be gunflints (Noisat 1989:6–10). This material is apparently unrelated to a post-1930 historic homestead in the same location. Site 39CU132 is an artifact scatter on a terrace of French Creek in the central Black Hills (Eckles 1978). The site contained a sparse scatter of chipping debris, a keeled scraper, a possible metal arrowhead, a utilized flake, and glass and metal fragments (Eckles 1978; Noisat 1988:6–7). Although the small amount of material at the site makes interpretations tenuous, this does appear to fit the pattern expected for an early contact-era site. The mix of glass, metal, and stone artifacts suggests that the site represents the period of transition from locally manufactured stone tools to metal and glass items acquired through trade.

Another metal projectile point was found on the Sanson Ranch in the southern Red Valley (Sudderth 1964:22). This point has a straight stem and straight blade edges with pronounced shoulders. It appears to have been native made from trade iron stock. No other information is available about the context of this discovery.

Site 39PN1170 may date to the initial contact period. This site in the western Limestones contained a possible habitation feature in the form of a living floor and postmolds (Sheveland and Flemmer 1993). This feature contained a dense concentration of stone flakes, shatter, preforms and tools. Two postmolds were found in test units. Fill from these yielded a date of 290 BP. Although no metal or glass artifacts were found, this appears to be a good candidate for an early contact-era site. Further investigations will be needed to explore this possibility, as such late radiocarbon dates frequently result from contamination by modern organics.

Some incised rock art sites in the Black Hills are of Protohistoric age. These depict horses or other non-native items. A large site on the Cheyenne River, 39FA7, contains several contact-era panels. One shows a human holding a gun. Another panel shows a horse. A third panel shows a human with the small shield used in horse days and what is probably a gun. Another large Cheyenne River site, 39FA79, includes a finely incised panel that apparently records an Indian victory over US government force. About 120 armless humans (probably representing casualties) are arranged in rows beside and below an eagle insignia like that used by the US Army. Three rows of guns are also shown on the panel. This panel may record Lakota and Cheyenne victories at the Battle of the Little Bighorn or the Fetterman Fight; however, the number of casualties is not consistent with the historic records of either battle. In any case, this panel clearly dates to the period of Indian and white conflict over the Black Hills country. Guns are also depicted at the Scored Rocks site, 39CU91, which a historic marker identifies as a Lakota site.

Another interesting Protohistoric rock art site is 39FA58. A large panel at this site shows a crudely drawn wagon pulled by a tiny horse. One or two war-clubs, an arrow and bow, and a human with upraised arms are also shown. The depiction of old-style weapons, rather than guns, suggests that this is an early Protohistoric panel. The wagon may represent the entry of an early trader into the area. The American Horse winter-count for 1830–31 notes that the Lakotas saw a wagon for the first time that year. A white trader, Red Lake (Blestan), brought his goods in it (Mallery 1893:568). This was Thomas Lestan Sarpy, proprietor of the ill-fated Ogalalla Trading Post at the mouth of Rapid Creek. The artist's difficulty in depicting the horse and wagon suggests unfamiliarity with these items.

Ethnohistoric and archaeological evidence suggests that use of the interior Black Hills during the Protohistoric period was rather limited. Very few non-native trade items are found in Black Hills sites. It is likely that horses were acquired before guns and other metal items were readily available in the Black Hills area (cf. Secoy 1953). (This statement conflicts with the conclusion of Saunders *et al.* [1994] that the Kenzy site bison hunters had metal tools but not horses.) With the adoption of horse nomadism, local populations probably shifted their activities away from mountainous areas to foothills and plains areas. A similar pattern was seen in the Jackson Hole area (G. Wright 1984). It appears that three factors make open lowland areas attractive to horse nomads: ready availability of pasturage, travel routes unrestricted by forest cover, and the adaptive advantage of traversing open areas in pursuit of bison. By the time Black Hills populations had acquired significant amounts of non-native trade items, they were already following an equestrian lifestyle. Thus, those few sites at which trade items have been found are restricted to peripheral zones, such as the western and southern foothills. A differing view is presented by Reher and Frison (1980:30), who assert that even the horse nomads made extensive use of mountain areas, such as the Black Hills.

The distribution of Protohistoric artifacts, sites, and rock art suggests that the Cheyenne River and the nearby foothills were the most frequented parts of the Black Hills during this period. Large rock art sites with complex mixtures of Late Prehistoric and Protohistoric art styles range along the south branch of the Cheyenne. These suggest that the river was a major transportation route used either simultaneously or sequentially by the various ethnic groups present in the area. The 1805 Lewis and Clark map suggests simultaneous occupation of the Black Hills country by numerous groups, including the Cheyennes, Arapahos, Suhtais, Kiowas, Kiowa-Apaches, and Comanches (Grinnell 1923:31). A few possible Kiowa-Apache sites also cluster along the Cheyenne, suggesting that these groups favored the more open country of the southern foothills (Gunnerson 1978), while possible Kiowa sites are found in the northwestern foothills (Reher and Frison 1980; Sundstrom 2004a). Cheyenne, Crow, and Lakota sites are also concentrated at the edges of the Black Hills, but occur along the eastern and northwestern foothills and the Belle Fourche River, as well as the Cheyenne River and southern periphery. The Lakota, and perhaps earlier groups as well, apparently made extensive use of the Reynold's and Gillette prairies, especially for hunting of deer, elk, and bison. The Cheyenne and probably the Crow before them regularly used the northern Red Valley for communal bison and antelope hunts (Stands in Timber and Liberty 1967). If the Miller Creek site (48CK47) in fact represents Crow use of the Black Hills, it indicates that an older pattern of mixed hunting and gathering was still followed at least during some seasons. Reanalysis of the site materials will be needed before any conclusions can be drawn from this site.

***Historic.*** The Black Hills region has a complex and colorful recent history. Major events and developments include Lakota councils concerning white intrusion into their lands, early military and scientific exploratory expeditions, the Black Hills gold rush, Texas cattle capitalism, homesteads and railroad towns, establishment of national forests, development of mining and logging industries, development of tourism, and local and national economic collapse in the 1920s and 1930s. These are represented by several hundred archaeological sites. A few fur traders established posts in and near the Black Hills in the early 1800s; however, their locations have not been found. Similarly, nothing remains today from the Hunt and Smith expeditions of 1811 and 1823. One of the most famous relics of Black Hills history is the Thoen Stone, a tablet incised with an account of the loss of most members of an early party of prospectors to Indian attack in 1833 (Parker 1966:10–11). Another possible remnant of early Euroamerican attempts to penetrate the Lakota country for prospecting is the reported find of two human skeletons found behind a breastwork of logs; an 1852 datebook was found with them (Parker 1966). In the 1850s and 1860s small military and scientific expeditions made their way to the Black Hills; no archaeological remains have thus far been found from these incursions. The Black Hills Expedition of 1874 was an extremely large and well publicized expedition. Several of the campsites are identified by historic markers, but no professional archaeological research has been done at these sites. The Black Hills gold rush followed close on the heels of the 1874 expedition. Many archaeological sites from military posts to early townsites to mines remain from this event. Of particular interest are places linked to the Chinese community in Deadwood (Zhu and Fosha 2004). Mining sites and ghost towns are ubiquitous in the central Black Hills. Fort Meade was built in 1878 (on the location of Camp Sturgis) to keep the peace between Lakota forces and the gold miners in the Black Hills (Lee 1991). Besides the remaining structures and cemetery, other sites associated with Fort Meade are 39MD41, a possible firing range, two artifact scatters, 39MD683 and 39MD702, and rifle pits or breastworks at 39MD375.

The fast-growing communities of the 1870s gold rush demanded supplies, meat, and produce. The first cattle and horse ranches were established mid-decade, as were stage coach lines and wagon roads from railroad terminuses at Cheyenne, Wyoming, and Bismarck, northern Dakota Territory. Among recorded archaeological sites linked to this activity is the Camp at the Mouth of Red Canyon (Camp Collier, 39FA413) (Haug *et al.* 1980), a small military post established to protect the Sidney to Deadwood stage route. Buffalo Gap, Rapid City, Fairburn, and Hermosa sprang up as freight and stage stops (Eastern Custer County Historical Society 1970). Texas drovers began bringing herds to the rich northern ranges in the 1870s. By 1885 a rail line had reached Buffalo Gap, which quickly transformed from gold rush stage stop to one of the busiest cattle shipping points in the nation (Parker and Lambert 1980). The cattle boom took a double hit in the late 1880s: the “big die-out” in the winter of 1886–87 and the homestead boom. By 1902, homesteads had taken over most of the open range country. The ruins of line camps, large ranches, and numerous homestead sites tell the story. The homestead era continued on a boom and bust cycle, depending on rainfall, through the 1920s. Drought and economic collapse in the 1930s led to abandonment of most homesteads, consolidation of smaller holdings into viable family ranches, return of homestead tracts to the federal government, and concentration of populations in fewer, but larger towns. These trends are well represented in the archaeological record with its hundreds of abandoned homesteads and townsites.

Two sites (39MD22 and 39MD23) peripherally linked to Fort Meade during this period are a cemetery and village used by Ute Indians who sought to relocate on a Lakota reservation in South Dakota in 1908. The possible cemetery site, 39MD22, contains 22 rectangular depressions that probably represent graves; research suggests these are the graves of nine or more Utes who died during the group’s stay at Fort Meade, but no definite identification of the features has been made (Buechler 2006d). During World War I, the post was used as a training facility for the South Dakota National Guard and a prisoner of war camp, as well as a cavalry post (Lee 1991).

In the 1930s, at least 23 Civilian Conservation Corps camps, and many more side-camps, were established in the Black Hills (Alleger 1934). Besides the ruins of the camps themselves, their presence is still visible in scenic highways, stonework bridges and culverts, public facilities in Custer State Park and Black Hills National Forest, development of Wind Cave for public visitation, dams, spring developments, power line corridors, ranger stations, and last, but certainly not least, the life-sized plaster fauna of Dinosaur Park in Rapid City. Civilian Conservation Corps workers literally shaped the forest through programs of fire suppression, seed collection, and reseeded and tree planting. At the same time, Works Progress Administration projects also participated in road construction and building tourist facilities. At this time, Fort Meade was used as a headquarters for the Civilian Conservation Corps program and also served as a base for the stratosphere balloon expeditions of 1934 and 1935. These high-altitude hot air balloon flights were a precursor to the later space program. They launched from the area still referred to as the Stratobowl a few miles south of Rapid City (Bauer 1982).

Meantime, industrial development focused on mining, mineral processing, and logging. These left numerous ruins, including placer spoils piles, stamp mills, tunnels and adits, rail lines for transporting ore, and flumes. Black Hills National Forest has developed a set of 61 mining districts to facilitate management of the various archaeological sites (Rom *et al.* 1996). Logging resulted in remains such as permanent and portable sawmills, rail lines, tie camps, logging camps, and flumes. Other entities expressed in the archaeological record of the Black Hills are the USDA

Forest Service (housing and ranger towers) and the tourism industry (campgrounds and roadside attractions).

## Sites by Period

*Paleoindian:* 39CU12, 39CU16 (Plainview), 39CU401 (Agate Basin or Angostura), 39CU566 (parallel oblique), 39CU567 (Rounded Base), 39CU773 (Late Paleoindian), 39CU774, 39CU811 (Angostura), 39CU855 (Pryor Stemmed and parallel oblique), 39CU989 (Agate Basin), 39CU1048? (Rounded Base), 39CU1142 (Goshen, Folsom, Agate Basin), 39CU1172 (Late Paleoindian?), 39CU1182 (Plainview), 39CU1199 (Angostura), 39CU1968 (Midland), 39CU2694 (Goshen), 39CU2839 (Late Paleoindian), 39FA11 (Late Paleoindian), 39FA225 (Late Paleoindian), 39FA405 (Frederick-Lusk), 39FA416 (Rounded Base), 39FA423 (Agate Basin), 39FA790 (Plainview), 39FA833 (Agate Basin), 39FA1154, 39FA1180, 39FA1188 (possible Eden), 39FA1189, 39FA1452, 39FA1603 (Goshen-Plainview, Frederick-Allen, and unknown), 39LA3 (Angostura), 39LA101 (Rounded Base), 39LA117, 39LA254 (Lovell Constricted), 39LA319 (Late Paleoindian), 39LA510, 39LA537, 39LA680, 39LA827 (Scottsbluff), 39LA1159, 39MD12 (Rounded Base), 39MD145 (Late Paleoindian), 39MD733 (Alberta-Cody), 39MD738, 39PN47 (Cody), 39PN77 (Late Paleoindian), 39PN97 (Alberta), 39PN100/219 (Angostura), 39PN128 (possible Clovis, Agate Basin, Parallel-Oblique, Rounded Base, Lovell Constricted), 39PN214, 39PN239 (possible Paleoindian), 39PN340, 39PN795, 39PN1124, 39PN1279 (Rounded Base), 39PN1306 (Agate Basin), 39PN1444 (Agate Basin), 39PN1450 (Hell Gap), 39PN1590, 39PN1809 (parallel oblique), 39PN1979, 39PN2757 (Angostura)

*Early Archaic:* 39CU115, 39CU241, 39CU651 (Hawken), 39CU773, 39CU844?, 39CU855?, 39CU932, 39CU1142, 39CU1144, 39CU1275?, 39CU1665, 39FA591, 39FA1159, 39LA117, 39LA377, 39LA754, 39LA781, 39LA796, 39LA1120?, 39PN128, 39PN150? (“dovetail” point), 39PN78, 39PN326, 39PN695, 39PN1124

*Middle Archaic:* 39BU135, 39CU16, 39CU78 (Duncan/Hanna), 39CU93, 39CU144, 39CU152, 39CU252 (McKean?), 39CU253 (McKean), 39CU268, 39CU331 (Duncan), 39CU391 (Duncan), 39CU425, 39CU427, 39CU525, 39CU566 (McKean, Duncan), 39CU634 (McKean), 39CU686 (McKean), 39CU690, 39CU724 (McKean), 39CU728, 39CU758 (McKean), 39CU769 (McKean), 39CU773 (Oxbow, McKean), 39CU778 (McKean), 39CU811, 39CU821 (Oxbow, McKean), 39CU843 (Duncan/Hanna), 39CU855, 39CU989, 39CU1013 (McKean), 39CU1118 (Duncan), 39CU1120 (McKean), 39CU1142, 39CU1145 (Hanna, McKean), 39CU1172 (Kolterman/Landers, Duncan/Hanna), 39CU1182, 39CU1188 (Oxbow, Duncan), 39CU1196 (McKean), 39CU1278 (McKean), 39CU1309, 39CU1310, 39CU1736, 39CU1745, 39CU1909 (Hanna), 39CU2694 (Duncan-Hanna), 39CU2839, 39CU3008, 39CU3311 (McKean), 39CU3308, 39FA9, 39FA10, 39FA38, 39FA39 (Duncan), 39FA44, 39FA56, 39FA60?, 39FA68 (McKean), 39FA225 (McKean), 39FA228 (Yonkee), 39FA229 (Hanna), 39FA267 (McKean), 39FA296 (McKean), 39FA302 (McKean, Duncan, Hanna), 39FA395 (McKean), 39FA406 (McKean), 39FA437, 39FA458, 39FA484 (McKean), 39FA522 (McKean), 39FA527 (McKean), 39FA537 (McKean), 39FA599 (Yonkee), 39FA671 (McKean), 39FA718 (Hanna), 39FA789 (McKean), 39FA842 (McKean), 39FA854, 39FA1033 (McKean), 39FA1044 (McKean), 39FA1112, 39FA1135, 39FA1151 (Duncan-Hanna), 39FA1154 (McKean), 39FA1160 (Hanna), 39FA1190 (McKean), 39FA1363, 39FA1445, 39LA116 (McKean), 39LA117, 39LA159 (McKean, Duncan, Hanna), 39LA170 (McKean), 39LA172 (McKean), 39LA204 (McKean), 39LA218, 39LA305

(McKean), 39LA642, 39LA663 (McKean), 39LA822 (Oxbow, McKean, Hanna), 39LA888 (Oxbow), 39LA1154, 39LA1130 (McKean), 39MD145 (Oxbow, McKean, Yonkee), 39MD413 (Duncan), 39MD474, 39PN47, 39PN128 (McKean), 39PN150 (McKean), 39PN160 (McKean), 39PN184 (McKean), 39PN214, 39PN259, 39PN265, 39PN319 (McKean), 39PN326 (McKean), 39PN543, 39PN690, 39PN705, 39PN795 (McKean), 39PN1122 (McKean), 39PN1380 (Duncan/Hanna), 39PN1415 (McKean), 39PN1504 (Oxbow), 39PN1528, 39PN1654, 39PN1810 (Duncan), 39PN1812, 39PN2616 (Hanna)

*Late Archaic:* 39CU34, 39CU113, 39CU154 (Besant), 39CU253, 39CU258 (Pelican Lake), 39CU266 (Pelican Lake), 39CU271, 39CU273 (Pelican Lake), 39CU425, 39CU427, 39CU555, 39CU556, 39CU558, 39CU559, 39CU561, 39CU586 (Pelican Lake), 39CU651, 39CU660, 39CU767 (Pelican Lake), 39CU773 (Besant), 39CU778 (Besant), 39CU811, 39CU819 (Pelican Lake), 39CU821, 39CU832 (Pelican Lake), 39CU855, 39CU894/39CU895, 39CU1048, 39CU1074, 39CU1118 (Pelican Lake), 39CU1142, 39CU1145, 39CU1158 (Pelican Lake), 39CU1172, 39CU1182 (Pelican Lake), 39CU1197, 39CU1214, 39CU1411 (Pelican Lake), 39CU1310, 39CU1214 (Pelican Lake), 39CU1501, 39CU1656, 39CU1674, 39CU1693, 39CU1697, 39CU1717, 39CU1946 (Pelican Lake), 39CU2839, 39CU2841, 39CU2869, 39CU2872, 39CU2891, 39CU2894, 39CU2896, 39CU3006 (Pelican Lake), 39CU3008, 39CU3009, 39FA6 (Pelican Lake), 39FA9, 39FA35 (Pelican Lake), 39FA39, 39FA56, 39FA68, 39FA231, 39FA405 (Pelican Lake), 39FA460, 39FA738, 39FA833, 39FA854, 39FA993, 39FA1010, 39FA1080, 39FA1109, 39FA1218, 39FA1363, 39FA1445, 39FA1784 (Besant), 39LA116, 39LA117, 39LA254, 39LA259, 39LA305, 39LA487, 39LA504, 39LA796, 39LA1217 (Besant), 39MD39, 39MD103 (Pelican Lake), 39PN85 (Pelican Lake), 39MD39, 39MD145, 39PN47, 39PN100/219, 39PN103 (Besant), 39PN114, 39PN128, 39PN150, 39PN214, 39PN219, 39PN275 (Pelican Lake), 39PN286 (Besant), 39PN686 (Pelican Lake), 39PN690, 39PN707, 39PN727 (Pelican Lake), 39PN787, 39PN795 (Besant), 39PN1280 (Besant), 39PN1294 (Pelican Lake), 39PN1323 (Besant), 39PN1373, 39PN1527

*Woodland:* 39CU154 (Besant), 39CU185, 39CU1048, 39CU1145, 39FA1154

*Late Prehistoric:* 39CU2, 39CU16, 39CU201, 39CU244, 39CU264, 39CU271, 39CU357, 39CU402, 39CU447, 39CU449, 39CU477, 39CU555, 39CU566, 39CU577, 39CU595, 39CU625, 39CU626, 39CU651 (Avonlea), 39CU658, 39CU680, 39CU691, 39CU728, 39CU767, 39CU773 (Avonlea), 39CU774, 39CU775 (Avonlea), 39CU782, 39CU806, 39CU823, 39CU832 (Avonlea), 39CU844, 39CU855, 39CU1074, 39CU1118, 39CU1142, 39CU1144, 39CU1145, 39CU1172, 39CU1173, 39CU1182, 39CU1196, 39CU1197, 39CU1214, 39CU1240 (Avonlea), 39CU1251 (Avonlea), 39CU1401 (Avonlea), 39CU1449 (Avonlea), 39CU1496 (Avonlea), 39CU1505 (Avonlea), 39CU1589, 39CU1661, 39CU1667, 39CU1697, 39CU1697, 39CU1937 (Avonlea), 39CU2567, 39CU2839 (Plains Village), 39CU3007, 39CU3009, 39CU3046, 39CU3309, 39CU3419, 39CU3528, 39FA6, 39FA9, 39FA35 (Avonlea), 39FA39, 39FA56, 39FA63, 39FA101 (Avonlea), 39FA195 (Avonlea), 39FA231, 39FA327 (Avonlea), 39FA392, 39FA508, 39FA591 (Initial Middle Missouri or Extended Coalescent), 39FA790, 39FA793, 39FA1154, 39FA1190, 39FA1216, 39FA1604 (Plains Village), 39FA1694 (Black Hills and South Fork Cheyenne), 39LA143, 39LA165 (Avonlea), 39FA1450 (Avonlea), 39LA288, 39LA472, 39LA480, 39LA712, 39LA713, 39LA753, 39LA859 (Avonlea), 39LA1217 (Avonlea), 39LA1289, 39MD48, 39MD136, 39MD145, 39MD311, 39MD440, 39MD487, 39PN47, 39PN86, 39PN100/219, 39PN124, 39PN150, 39PN214, 39PN233, 39PN540, 39PN690, 39PN1081, 39PN1087,

39PN1119 (Avonlea), 39PN1132 (Avonlea), 39PN1280 (Avonlea) , 39PN1308, 39PN1323 (Avonlea), 39PN1373, 39PN1500, 39PN1651, 39PN1839

*Protohistoric:* 39CU21, 39CU81, 39CU132, 39CU498, 39CU773, 39CU778, 39CU1306, 39CU2566, 39FA7, 39FA58, 39FA79, 39PN214, 39PN1081, 39PN1170

*Historic*

*Artifact Scatter Only:* 39CU25, 39CU116, 39CU123, 39CU172, 39CU180, 39CU232/39CU838, 39CU269, 39CU531, 39CU546, 39CU576, 39CU577, 39CU591, 39CU593, 39CU684, 39CU689, 39CU737, 39CU745, 39CU748, 39CU755, 39CU759, 39CU826, 39CU828, 39CU830, 39CU831, 39CU849, 39CU867, 39CU1054, 39CU1109, 39CU1142, 39CU1172, 39CU1177, 39CU1200, 39CU1232, 39CU1243, 39CU1279, 39CU1296, 39CU1297, 39CU1299, 39CU1321, 39CU1331, 39CU1332, 39CU1342, 39CU1345, 39CU1348, 39CU1351, 39CU1352, 39CU1354, 39CU1384, 39CU1385, 39CU1404, 39CU1423, 39CU1430, 39CU1433, 39CU1434, 39CU1437, 39CU1438, 39CU1440, 39CU1441, 39CU1445, 39CU1457, 39CU1458, 39CU1464, 39CU1494, 39CU1507, 39CU1512, 39CU1514, 39CU1515, 39CU1516, 39CU1517, 39CU1518, 39CU1521, 39CU1527, 39CU1551, 39CU1563, 39CU1565, 39CU1568, 39CU1607, 39CU1618, 39CU1654, 39CU1674, 39CU1699, 39CU1704, 39CU1707, 39CU1757, 39CU1758, 39CU1766, 39CU1768, 39CU1769, 39CU1771, 39CU1775, 39CU1776, 39CU1790, 39CU1797, 39CU1800, 39CU1805, 39CU1876, 39CU1950, 39CU1968, 39CU1973, 39CU1974, 39CU2517, 39CU2523, 38CU2524, 39CU2544, 39CU2547, 39CU2556, 39CU2557, 39CU2724, 39CU2764, 39CU2783, 39CU2800, 39CU2810, 39CU2811, 39CU2999, 39CU3005, 39CU3167, 39CU3169, 39CU3188, 39CU3198, 39CU3317, 39CU3416, 39CU3419, 39CU3466, 39CU3470, 39CU3471, 39CU3499, 39CU3653, 39CU3686, 39FA119, 39FA798, 39FA888, 39FA1041, 39FA1042, 39FA1208, 39FA1219, 39FA1348, 39FA1360, 39FA1362, 39FA1510, 39FA1519, 39FA1602, 39FA1680, 39FA1780, 39LA107, 39LA139, 39LA148, 39LA209, 39LA315, 39LA359, 39LA363, 39LA369, 39LA371, 39LA394, 39LA509, 39LA551, 39LA564, 39LA594, 39LA613, 39LA616, 39LA796, 39LA800, 39LA805, 39LA859, 39LA876, 39LA877, 39LA879, 39LA882, 39LA884, 39LA886, 39LA908, 39LA912, 39LA914, 39LA919, 39LA921, 39LA922, 39LA944, 39LA945, 39LA947, 39LA948, 39LA960, 39LA961, 39LA962, 39LA973, 39LA974, 39LA982, 39LA1064, 39LA1106, 39LA1108, 39LA1132, 39LA1145, 39LA1146, 39LA1152, 39LA1168, 39LA1188, 39LA1217, 39LA1227, 39LA1228, 39LA1229, 39LA1234, 39LA1236, 39LA1252, 39LA1274, 39LA1309, 39LA1333, 39MD139, 39MD162, 39MD293, 39MD311, 39MD407, 39MD414, 39MD431, 39MD433, 39MD436, 39MD486, 39MD487, 39MD490, 39MD492, 39MD503, 39MD504, 39MD612, 39MD623, 39MD625, 39MD630, 39MD646, 39MD648, 39MD683, 39MD689, 39MD702, 39MD714, 39MD748, 39PN84/39PN128, 39PN159, 39PN181, 39PN222, 39PN230, 39PN253, 39PN285, 39PN393, 39PN446, 39PN453, 39PN664A, 39PN664, 39PN687, 39PN691, 39PN694, 39PN707, 39PN776, 39PN989, 39PN1003, 39PN1061, 39PN1154, 39PN1211, 39PN1245, 39PN1246, 39PN1281, 39PN1282, 39PN1283, 39PN1314, 39PN1315, 39PN1317, 39PN1341, 39PN1356, 39PN1397, 39PN1398, 39PN1399, 39PN1405, 39PN1407, 39PN1417, 39PN1420, 39PN1434, 39PN1436, 39PN1437, 39PN1438, 39PN1439, 39PN1440, 39PN1441, 39PN1487, 39PN1490, 39PN1494, 39PN1621, 39PN1677, 39PN1689, 39PN1692, 39PN1696, 39PN1698, 39PN1701, 39PN1761, 39PN1763, 39PN1764, 39PN1791, 39PN1792, 39PN1814, 39PN1815, 39PN1822, 39PN1828, 39PN1845, 39PN1847, 39PN1849, 39PN1850, 39PN1855, 39PN1967, 39PN1968, 39PN1969, 39PN1986, 39PN2501, 39PN2520, 39PN2538, 39PN2552, 39PN2558, 39PN2591, 39PN2612, 39PN2617, 39PN2620, 39PN2621, 39PN2627,

39PN2628, 39PN2633, 39PN2637, 39PN2639, 39PN2677, 39PN2680, 39PN2686, 39PN2698, 39PN2711, 39PN2712,

*Depression, Foundation, or Wall:* 39CU106, 39CU164, 39CU166, 39CU228, 39CU293, 39CU305, 39CU310, 39CU409, 39CU437, 39CU439, 39CU444, 39CU445, 39CU447, 39CU449, 39CU453, 39CU476, 39CU560, 39CU619, 39CU652, 39CU687, 39CU703, 39CU705, 39CU717, 39CU733, 39CU744, 39CU750, 39CU763, 39CU786, 39CU791, 39CU809, 39CU835, 39CU846, 39CU850, 39CU852, 39CU864, 39CU880, 39CU885, 39CU907, 39CU914, 39CU915, 39CU916, 39CU917, 39CU1017, 39CU1023, 39CU1059, 39CU1060, 39CU1061, 39CU1151, 39CU1192, 39CU1209, 39CU1230, 39CU1300, 39CU1303, 39CU1306, CU1309, 39CU1339, 39CU1340, 39CU1350, 39CU1358, 39CU1364, 39CU1372, 39CU1542, 39CU1558, 39CU1561, 39CU1569, 39CU1801, 39CU1794, 39CU1936, 39CU1952, 39CU1966, 39CU2099, 39CU2528, 39CU2546, 39CU2558, 39CU2561, 39CU2767, 39CU2768, 39CU2791, 39CU2897, 39CU2991, 39CU2995, 39CU3007, 39CU3029, 39CU3050, 39CU3064, 39CU3120, 39CU3121, 39CU3127, 39CU3128, 39CU3129, 39CU3144, 39CU3158, 39CU3189, 39CU3191, 39CU3193, 39CU3194, 39CU3196, 39CU3345, 39CU3349, 39CU3351, 39CU3360, 39CU3361, 39CU3362, 39CU3363, 39CU3364, 39CU3367, 39CU3370, 39CU3394, 39CU3399, 39CU3400, 39CU3458, 39CU3463, 39CU3464, 39CU3469, 39CU3504, 39CU3645, 39CU3651, 39CU3757, 39CU3760, 39FA774, 39FA792, 39FA946, 39FA961, 39FA980, 39FA1420, 39FA1511, 39FA1513, 39FA1515, 39FA1516, 39FA1607, 39FA1763, 39LA26, 39LA42, 39LA92, 39LA34, 39LA56, 39LA69, 39LA77, 39LA80, 39LA81, 39LA83, 39LA88, 39LA92, 39LA93, 39LA98, 39LA99, 39LA115, 39LA116, 39LA147, 39LA149, 39LA154, 39LA156, 39LA161, 39LA168, 39LA178, 39LA179, 39LA187, 39LA198, 39LA199, 39LA200, 39LA207, 39LA223, 39LA233, 39LA241, 39LA242, 39LA297, 39LA311, 39LA316, 39LA317, 39LA329, 39LA336, 9LA338, 39LA348, 39LA360, 39LA364, 39LA366, 39LA372, 39LA391, 39LA395, 39LA397, 39LA398, 39LA400, 39LA403, 39LA405B, 39LA406, 39LA408, 39LA413, 39LA417, 39LA418, 39LA425, 39LA436, 39LA439, 39LA449, 39LA451, 39LA463, 39LA464, 39LA468, 39LA484, 39LA489, 9LA494, 39LA516, 39LA526, 39LA533, 39LA534, 39LA542, 39LA549, 39LA553, 39LA561, 39LA570, 39LA571, 39LA572, 39LA573, 39LA588, 39LA604, 39LA610, 39LA617, 39LA619, 39LA621, 39LA644, 39LA654, 39LA643, 39LA697, 39LA748, 39LA749, 39LA758, 39LA759, 39LA787, 39LA791, 39LA799, 39LA806, 39LA818, 39LA819, 39LA829, 39LA841, 39LA872, 39LA878, 39LA887, 39LA897, 39LA901, 39LA909, 39LA915, 39LA964, 39LA993, 39LA994, 39LA995, 39LA999, 39LA1027, 39LA1029, 39LA1033, 39LA1042, 39LA1053, 39LA1061, 39LA1075, 39LA1079, 39LA1082, 39LA1100, 39LA1101, 39LA1113, 39LA1171, 39LA1193, 39LA1201, 39LA1207, 39LA1208, 39LA1209, 39LA1218, 39LA1249, 39LA1254, 39LA1257, 39LA1270, 39LA1283, 39LA1325, 39LA1355, 39LA1367, 39LA1446, 39LA1466, 39LA1467, 39LA1476, 39MD75, 39MD86, 39MD115, 39MD144, 39MD150, 39MD152, 39MD154, 39MD155, 39MD161, 39MD380, 39MD475, 39MD499, 39MD507, 39MD634, 39MD635, 39MD636, 39MD641, 39MD644, 39MD694, 39MD709, 39MD720, 39MD721, 39MD722, 39MD736, 39MD759, 39PN44, 39PN45, 39PN152, 39PN154, 39PN155, 39PN171, 39PN223, 39PN226, 39PN261, 39PN292, 39PN293, 39PN296, 39PN319, 39PN345, 39PN348, 39PN379, 39PN381, 39PN383, 39PN386, 39PN395, 39PN398, 39PN399, 39PN427, 39PN452, 39PN454, 39PN458, 39PN483, 39PN644, 39PN646, 39PN651, 39PN463, 39PN472, 39PN518, 39PN537, 39PN547, 39PN548, 39PN564, 39PN572, 39PN577, 39PN622, 39PN636, 39PN641, 39PN644, 39PN645, 39PN647, 39PN655, 39PN662, 39PN663, 39PN669, 39PN706, 39PN710, 39PN724, 39PN734, 39PN738, 39PN767, 39PN777, 39PN780, 39PN800, 39PN813, 39PN852, 39PN854, 39PN856, 39PN865, 39PN908, 39PN939, 39PN940, 39PN947, 39PN985, 9PN987, 39PN995, 39PN977, 39PN1002, 39PN1019,

39PN1044, 39PN1045, 39PN1051, 39PN1052, 39PN1069, 39PN1074, 39PN1089, 39PN1093, 39PN1094, 39PN1096, 39PN1118, 39PN1125, 39PN1126, 39PN1128, 39PN1129, 39PN1130, 39PN1131, 39PN1137, 39PN1138, 39PN1173, 39PN1198, 39PN1222, 39PN1230, 39PN1239, 39PN1230, 39PN1250, 39PN1260, 39PN1262, 39PN1263, 39PN1265, 39PN1267, 39PN1276, 39PN1284, 39PN1292, 39PN1320, 39PN1331, 39PN1357, 39PN1379, 39PN1386, 39PN1408, 39PN1429, 39PN1467, 39PN1486, 39PN1492, 39PN1497, 39PN1499, 39PN1547, 39PN1585, 39PN1588, 39PN1589, 39PN1590, 39PN1592, 39PN1593, 39PN1594, 39PN1598, 39PN1602, 39PN1645, 39PN1683, 39PN1729, 39PN1827, 39PN1831, 39PN2550, 39PN2549, 39PN2573, 39PN2592, 39PN2671, 39PN2700, 39PN2706, 39PN2713, 39PN2763, 39PN2919

*Farmstead:* 39CU106, 39CU109, 39CU111, 39CU151, 39CU123, 39CU146, 39CU147, 39CU179, 39CU194, 39CU200, 39CU221, 39CU235, 39CU236, 39CU240, 39CU294, 39CU298, 39CU300, 39CU372, 39CU388, 39CU436, 39CU440, 39CU443, 39CU458, 39CU480, 39CU602, 39CU616, 39CU628, 39CU650, 39CU667, 39CU678, 39CU686, 39CU698, 39CU706, 39CU719, 39CU730, 39CU751, 39CU763, 39CU834, 39CU862, 39CU900, 39CU905, 39CU910, 39CU915, 39CU933, 39CU954, 39CU1015, 39CU1021, 39CU1102, 39CU1135, 39CU1136, 39CU1143, 39CU1152, 39CU1179, 39CU1180, 39CU1185, 39CU1208, 39CU1220, 39CU1221, 39CU1223, 39CU1224, 39CU1284, 39CU1298, 39CU1315, 39CU1316, 39CU1317, 39CU1363, 39CU1410, 39CU1436, 39CU1456, 39CU1474, 39CU1479, 39CU1490, 39CU1523, 39CU1529, 39CU1535, 39CU1536, 39CU1537, 39CU1541, 39CU1550, 39CU1554, 39CU1587, 39CU1592, 39CU1622, 39CU1679, 39CU1684, 39CU1922, 39CU1948, 39CU1951, 39CU1965, 39CU1990, 39CU2016, 39CU2529, 39CU2633?, 39CU2697, 39CU2699, 39CU2703, 39CU2867, 39CU3006, 39CU3011, 39CU3318, 39CU3335, 39CU3372, 39CU3468, 39CU3675, 39CU3702, 39CU3705, 39CU3748, 39FA96, 39FA97, 39FA367, 39FA459, 39FA557, 39FA778, 39FA780, 39FA785, 39FA834, 39FA951, 39FA969, 39FA1026, 39FA1082, 39FA1098, 39FA1184, 39FA1205, 39FA1206, 39FA1207, 39FA1355, 39FA1468, 39FA1517, 39FA1649, 39FA1761, 39FA1796, 39LA5, 39LA6, 39LA9, 39LA11, 39LA27, 39LA28, 39LA30, 39LA43, 39LA45, 39LA55, 39LA158, 39LA166, 39LA211, 39LA212, 39LA220, 39LA259, 39LA423, 39LA523, 39LA576, 39FA577, 39LA612, 39LA640, 39LA666, 39LA711, 39LA272, 39LA810, 39LA907, 39LA911, 39LA926, 39LA976, 39LA978, 39LA979, 39LA988, 39LA1001, 39LA1026, 39LA1050, 39LA1054, 39LA1067, 39LA1163, 39LA1200, 39LA1206, 39LA1221, 39LA1222, 39LA1242, 39LA1244, 39LA1247, 39LA1258, 39LA1335, 39LA1336, 39LA1350, 39LA1411, 39MD415, 39MD513, 39MD639, 39MD711, 39MD743, 39MD751, 39MD758, 39PN42, 39PN165, 39PN169, 39PN191, 39PN225, 39PN228, 39PN242, 39PN255, 39PN258, 39PN262, 39PN294, 39PN308, 39PN316, 39PN318, 39PN340, 39PN358, 39PN364, 39PN369, 39PN394, 39PN423, 39PN425, 39PN459, 39PN470, 39PN576, 39PN665, 39PN688, 39PN696, 39PN709, 39PN771, 39PN792, 39PN796, 39PN797, 39PN814, 39PN815, 39PN892, 39PN951, 39PN1177, 39PN1256, 39PN1304, 39PN1306, 39PN1345, 39PN1346, 39PN1349, 39PN1385, 39PN1421, 39PN1522, 39PN1611, 39PN1650, 39PN1663, 39PN1797, 39PN1800, 39PN1806, 39PN1856, 39PN1944, 39PN1948, 39PN1963, 39PN1987, 39PN2536, 39PN2561, 39PN2595, 39PN2618, 39PN2697, 39PN2704, 39PN2787, 39PN2800, 39PN2846

*Cabin:* 39CU10, 39CU97, 39CU107, 9CU161, 39CU162, 39CU175, 39CU207, 39CU210, 39CU217, 39CU218, 39CU222/39CU393, 39CU249, 39CU285, 39CU287, 39CU290, 39CU292, 39CU295, 39CU296, 39CU303, 39CU304, 39CU309, 39CU312, 39CU337, 39CU341, 39CU396, 39CU423, 39CU437, 39CU502, 39CU504, 39CU523, 39CU571, 39CU572, 39CU603, 39CU607, 39CU609, 39CU615, 39CU618, 39CU640, 39CU688, 39CU754, 39CU756, 39CU766, 39CU780,

39CU793, 39CU879, 39CU898, 39CU1011, 39CU1016, 39CU1175, 39CU1280, 39CU1291, 39CU1293, 39CU1301, 39CU1343, 39CU1525, 39CU1557, 39CU1572, 39CU1655, 39CU1659, 39CU1949, 39CU2770, 39CU2771, 39CU2799, 39CU3105, 39CU3404, 39CU3500, 39CU3749, 39FA553, 49FA584, 39LA16, 39LA20, 39LA21, 39LA22, 39LA24, 39LA25, 39LA39, 39LA31, 39LA67, 39LA68, 39LA70, 39LA71, 39LA74, 39LA76, 39LA77, 39LA82, 39LA84, 39LA87, 39LA96, 39LA97, 39LA100, 39LA153, 39LA163, 39LA164, 39LA203, 39LA210, 39LA226, 39LA237, 39LA244, 39LA246, 39LA299, 39LA300, 39LA321, 39LA340, 39LA341, 39LA342, 39LA343, 39LA346, 39LA350, 39LA351, 39LA352, 39LA357, 39LA409, 39LA410, 39LA415, 39LA430, 39LA437, 39LA443, 39LA444, 39LA445, 39LA479, 39LA482, 39LA490, 39LA498, 39LA507, 39LA518, 39LA519, 39LA521, 39LA524, 39LA525, 39LA543, 39LA545, 39LA550, 39LA565, 39LA581, 39LA582, 39LA593, 39LA622, 39LA648, 39LA649, 39LA653, 39LA669, 39LA671, 39LA674, 39LA680, 39LA681, 39LA690, 39LA704, 39LA706, 39LA789, 39LA794, 39LA812, 39LA836, 39LA854, 39LA855, 39LA856, 39LA857, 39LA858, 39LA870, 39LA898, 39LA899, 39LA902, 39LA905, 39LA913, 39LA924, 39LA940, 39LA953, 39LA959, 39LA965, 39LA968, 39LA983, 39LA1019, 39LA1020, 39LA1025, 39LA1031, 39LA1038, 39LA1107, 39LA1179, 39LA1189, 39LA1197, 39LA1215, 39LA1233, 39LA1265, 39LA1281, 39LA1282, 39LA1292, 39LA1379, 39LA1448, 39LA1449, 39LA1450, 39LA1473, 39MD53, 39MD169, 39MD298, 39MD377, 39MD371, 39MD408, 39MD411, 39MD428, 39MD446, 39MD447, 39MD476, 39MD489, 39MD643, 39MD645, 39MD781, 39PN37/39PN837, 39PN39, 39PN40, 39PN48, 39PN49, 39PN50, 39PN151, 39PN156, 39PN157, 39PN172, 39PN189, 39PN220, 39PN221, 39PN231, 39PN238, 39PN246, 39PN341, 39PN343, 39PN344, 39PN349, 39PN351, 39PN359, 39PN360, 39PN361, 39PN362, 39PN363, 39PN389, 39PN401, 39PN430, 39PN428, 39PN455, 39PN456, 39PN474, 39PN480, 39PN485, 39PN547, 39PN579, 39PN648, 39PN678, 39PN684, 39PN703, 39PN719, 39PN720, 39PN721, 39PN723, 39PN725, 39PN729, 39PN730, 39PN733, 39PN735, 39PN759, 39PN763, 39PN784, 39PN799, 39PN801, 39PN806, 39PN818, 39PN851, 39PN853, 39PN949, 39PN952, 39PN957, 39PN959, 39PN962, 39PN993, 39PN994, 39PN997, 39PN998, 39PN1046, 39PN1048, 39PN1060, 39PN1084, 39PN1178, 39PN1229, 39PN1234, 39PN1235, 39PN1305, 39PN1307, 39PN1409, 39PN1446, 39PN1495, 39PN1513, 39PN1601, 39PN1606, 39PN1608, 39PN1609, 39PN1821, 39PN1824, 39PN2528, 39PN2583, 39PN2623, 39PN2648, 39PN2671, 39PN2820, 39PN2822, 39PN2859

*Town:* 39CU89 (Atlantic), 39CU90 (Bugtown), 39CU172 (Mayo), 39FA435 (Minnekahta), 39FA1294 (Cascade), 39LA12 (Gregory), 39LA14 (Galena), 39LA17 (Benchmark), 39LA150 (Nugget City), 39LA229 (Centennial Valley), 39LA289 (Carbonate), 39LA295 (Balmoral), 39LA296 (Cyanide), 39LA354 (Balmoral), 39LA354 (Slabtown), 39LA358 (Terry), 39LA424 (Robaix), 39LA471 (Reliance, Stanley City), 39LA483 (Maitland, Garden City), 39LA737 (Trojan), 39LA785 (Nahant), 39LA1005 (Hanna), 39LA1012 (Dumont), 39LA1303 (“Shanty Town”), 39LA3000 (Deadwood), 39LA3001 (Lead), 39MD439 (Car-Wye), 39MD631 (Runkle), 39PN38 (Canyon City), 39PN46 (Crooked Creek), 39PN150 (Placerville), 39PN153 (Oreville), 39PN173 (Queen Bee), 39PN304 (Mystic), 39PN461 (Myersville), 39PN850 (Pinedale), 39PN2864 (Rochford), 39PN2580 (Otho)

*School:* 39CU522, 39CU757, 39FA488, 39LA18, 39LA416, 39LA967, 39LA1186, 39LA1202, 39PN1201?, 39PN1303, 39PN1321, 39PN1848

*Mine, Stamp Mill, Crusher, or Mining Camp:* 39CU97, 39CU101, 39CU102, 39CU103, 39CU149, 39CU150, 39CU173, 39CU177, 39CU181, 39CU209, 39CU211, 39CU212, 39CU213,

39CU220, 39CU283, 39CU297, 39CU299, 39CU301, 39CU302, 39CU306, 39CU307, 39CU308, 39CU411, 39CU431, 39CU482, 39CU501, 39CU503, 39CU562, 39CU564, 39CU568, 39CU598, 39CU599, 39CU600, 39CU610, 39CU613, 39CU614, 39CU617, 39CU624, 39CU634, 39CU666, 39CU734, 39CU738, 39CU739, 39CU764, 39CU776, 39CU777, 39CU778, 39CU792, 39CU863, 39CU926, 39CU927, 39CU934, 39CU945, 39CU947, 39CU948, 39CU955, 39CU958, 39CU1035, 39CU1039, 39CU1040, 39CU1042, 39CU1045, 39CU1063, 39CU1124, 39CU1164, 39CU1165, 39CU1181, 39CU1199, 39CU1217, 39CU1229, 39CU1276, 39CU1281, 39CU1282, 39CU1292, 39CU1295, 39CU1302, 39CU1313, 39CU1315, 39CU1316, 39CU1334, 39CU1365, 39CU1367, 39CU1405, 39CU1468, 39CU1459, 39CU1508, 39CU1519, 39CU1523, 39CU1529, 39CU1552, 39CU1566, 39CU1702, 39CU1703, 9CU1706, 39CU1764, 39CU1765, 39CU1772, 39CU1779, 39CU1782, 39CU1786, 39CU1787, 39CU1788, 39CU1789, 39CU1791, 39CU1792, 39CU1795, 39CU1938, 39CU1951, 39CU1955, 39CU1956, 39CU2494, 39CU2529, 39CU2763, 39CU2777, 39CU2795, 39CU2818, 39CU2819, 39CU2997, 39CU2998, 39CU3000, 39CU3026, 39CU3027, 39CU3028, 39CU3030, 39CU3034, 39CU3035, 39CU3036, 39CU3937, 39CU3038, 39CU3055, 39CU3056, 39CU3066, 39CU3070, 39CU3071, 39CU3072, 39CU3073, 39CU3074, 39CU3075, 39CU3076, 39CU3077, 39CU3104, 39CU3126, 39CU3141, 39CU3168, 39CU3182, 39CU3185, 39CU3187, 39CU3195, 39CU3334, 39CU3353, 39CU3355, 39CU3357, 39CU3358, 39CU3408, 39CU3409, 39CU3420, 39CU3425, 39CU3426, 39CU3436, 39CU3439, 39CU3441, 39CU3444, 39CU3446, 39CU3455, 39CU3461, 39CU3462, 39CU3506, 39CU3647, 39CU3649, 39CU3676, 39CU3725, 39CU3726, 39CU3764, 39CU3765, 39FA293, 39FA748, 39LA19, 39LA32, 39LA33, 39LA37, 39LA38?, 39LA42, 39LA55, 39LA73, 39LA74, 39LA75, 39LA150/39LA151, 39LA190, 39LA193, 39LA194, 39LA202, 39LA237, 39LA293, 39LA298, 39LA309, 39LA310, 39LA322, 39LA323, 39LA325, 39LA326, 39LA327, 39LA328, 39LA331, 39LA332, 39LA339, 39LA355, 39LA356, 39LA361, 39LA362, 39LA373, 39LA381, 39LA383, 39LA386, 39LA387, 39LA388, 39LA389, 39LA390, 39LA392, 39LA393, 39LA396, 39LA399, 39LA404, 39LA405, 39LA412, 39LA414, 39LA421?, 39LA424, 39LA426, 39LA427, 39LA430, 39LA433, 39LA438, 39LA440, 39LA454, 39LA455, 39LA461, 39LA462, 39LA467, 39LA469, 39LA470, 39LA471, 39LA474, 39LA475, 39LA477, 39LA478, 39LA483, 39LA491, 39LA493, 39LA495, 39LA496, 39LA499, 39LA513, 39LA515, 39LA538, 39LA539, 39LA540, 39LA541, 39LA544, 39LA566, 39LA575, 39LA579, 39LA587, 39LA590, 39LA602, 39LA603, 39LA647, 39LA652, 39LA655, 39LA656, 39LA661, 39LA664, 39LA665, 39LA667, 39LA673, 39LA677, 39LA676, 39LA683, 39LA684, 39LA685, 39LA696, 39LA701, 39LA702, 39LA709, 39LA721, 39LA722, 39LA723, 39LA724, 39LA726, 39LA728, 39LA731, 39LA732, 39LA734, 39LA736, 39LA738, 39LA739, 39LA740, 39LA741, 39LA742, 39LA743, 39LA744, 39LA745, 39LA746, 39LA752, 39LA756, 39LA762, 39LA763, 39LA764, 39LA765, 39LA767, 39LA768, 39LA769, 39LA770, 39LA774, 39LA775, 39LA776?, 39LA778, 39LA780, 39LA792, 39LA793, 39LA795, 39LA797, 39LA798, 39LA802?, 39LA811, 39LA813, 39LA814, 39LA815, 39LA816, 39LA832, 39LA836, 39LA845, 39LA855, 39LA861, 39LA866, 39LA869, 39LA873, 39LA874, 39LA885, 39LA890, 39LA892, 39LA893, 39LA894, 39LA895, 39LA898, 39LA899, 39LA900, 39LA905, 39LA910?, 39LA916, 39LA917, 39LA923, 39LA927, 39LA928, 39LA933, 39LA949, 39LA950, 39LA951, 39LA952, 39LA954, 39LA955, 39LA957, 39LA963, 39LA966, 39LA969, 39LA970, 39LA972, 39LA975, 39LA977, 39LA980, 39LA981, 39LA984, 39LA986, 39LA991, 39LA992, 39LA996, 39LA997, 39LA1000, 39LA1001, 39LA1002, 39LA1004, 39LA1024, 39LA1028, 39LA1030, 39LA1034, 39LA1036, 39LA1037, 39LA1038, 39LA1056, 39LA1058, 39LA1059, 39LA1077, 39LA1078, 39LA1080, 39LA1103, 39LA1104, 39LA1109, 39LA1119, 39LA1121, 39LA1127, 39LA1129, 39LA1130, 39LA1133, 39LA1137, 39LA1138, 39LA1139, 39LA1140,

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39PN2779, 39PN2782, 39PN2788, 39PN2789, 39PN2796, 39PN2799, 39PN2803, 39PN2805, 39PN2807, 39PN2810, 39PN2811, 39PN2812, 39PN2819, 39PN2879, 39PN3001, 39PN3044, 39PN3047, 39PN3048, 39PN3095, 39PN3096, 39PN3182

*Logging Camp or Sawmill:* 39CU31A, 39CU92, 39CU110, 39CU123, 39CU148, 39CU178, 39CU214, 39CU219, 39CU225, 39CU226, 39CU227, 39CU229, 39CU289, 39CU291, 39CU392, 39CU404/39CU526, 39CU411, 39CU481, 39CU553, 39CU567, 39CU661, 39CU662, 39CU759, 39CU789, 39CU800, 39CU829, 39CU847, 39CU865, 39CU894/39CU895, 39CU896, 39CU944, 39CU1036, 39CU1046, 39CU1062, 39CU1194, 39CU1357, 39CU1415, 39CU1426, 39CU1489, 39CU1705, 39CU2813?, 39CU3133, 39CU3157, 39CU3460, 39LA10, 39LA23, 39LA55, 39LA312, 39LA548?, 39LA620, 39LA720, 39LA920?, 39LA928, 39LA1008, 39LA1187, 39PN35, 39PN36, 39PN224, 39PN256, 39PN257, 39PN305, 39PN422?, 39PN424?, 39PN443, 39PN467, 39PN659, 39PN697, 39PN732, 39PN765, 39PN766, 39PN815, 39PN1167, 39PN1309?, 39PN1312, 39PN1348?, 39PN1352?, 39PN1388, 39PN1415?, 39PN1419, 39PN1519?, 39PN1523?, 39PN1700, 39PN1730, 39PN1759, 39PN1826, 39PN1964?, 39PN1998, 39PN2125, 39PN2508?, 39PN2599?, 39PN2600?, 39PN3007

*Civilian Conservation Corps-Related:* 39CU22, 39CU31A, 39CU119, 39CU230?, 39CU565, 39CU597, 39CU663, 39CU848, 39CU894, 39CU1033, 39CU1211, 39CU1273, 39CU1274, 39CU1415, 39CU1417, 39CU1497, 39CU1522?, 39CU1538, 39CU2099?, 39CU2561, 39CU2766, 39CU2791?, 39CU2876, 39CU3071, 39CU3095, 39CU3096, 39CU3166, 9CU3368, 39CU3397, 39CU3435, 39CU3437, 39CU3438, 39CU3450, 39CU3552, 39CU3674, 39CU3707, 39CU3711?, 39CU3723, 39CU3758, 39FA1566?, 39LA15, 39LA52, 39LA192, 39LA506, 39LA689?, 39LA700, 39LA715, 39LA716, 39LA779, 39LA834?, 39LA918, 39LA941?, 39LA1003, 39LA1015, 39LA1185, 39LA1286, 39LA1308, 39LA1328, 39LA1458, 39LA1477, 39LA2044, 39MD505, 39MD571?, 39MD633, 39PN382, 39PN445, 39PN574 (WORKS PROGRESS ADMINISTRATION camp), 39PN669, 39PN906, 39PN1069?, 39PN1113, 39PN1114, 39PN1123, 39PN1139, 39PN1164, 39PN1171, 39PN1172, 39PN1212, 39PN1215, 39PN1216, 39PN1238, 39PN1250, 39PN1260, 39PN1271, 39PN1331, 39PN1344, 39PN1355, 39PN1813, 39PN1826, 39PN1985, 39PN2068, 39PN2130, 39PN2544, 39PN2652, 39PN2821, 39PN2841

*Railroad:* 39CU2000, 39CU2009, 39CU3509, 39FA2000, 39FA2009, 39LA402, 39LA447, 39LA453, 39LA454, 39LA488, 39LA678?, 39LA717, 39LA718, 39LA795, 39LA928, 39LA987?, 39LA2000, 39LA2001, 39LA2002, 39LA2003, 39LA2005, 39LA2009, 39LA2010, 39LA2022, 39LA2064, 39MD439, 39MD449, 39MD479, 39MD2005, 39PN158, 39PN368, 39PN779, 39PN942, 39PN1244, 39PN1254, 39PN1526, 39PN1990, 39PN1998?, 39PN2000, 39PN2015, 39PN2017, 39PN2021, 39PN2106, 39PN2521?, 39PN2516

*Dam, Waterworks, Waterline, or Sewage Treatment:* 39CU611, 39CU800, 39CU848, 39CU1033, 39CU1034, 39CU1211, 39CU1273, 39CU1274, 39CU1538, 39CU2097, 39CU2559, 39CU2876, 39CU3071, 39CU3095, 39CU3096, 39CU3166, 39CU3367, 39CU3397, 39CU3438, 39CU3450, 39CU3552, 39CU3674, 39CU3698, 39CU3707, 39CU3711, 39CU3758, 39FA1566, 39LA15, 39LA630, 39LA699, 39LA708, 39LA715, 39LA716, 39LA834, 39LA1185, 39LA1457, 39LA1458, 39LA2029, 39LA2044, 39LA2167, 39MD438, 39MD496, 39MD498, 39MD505, 9MD571, 39MD633, 39MD637, 39MD689, 39PN445, 39PN906, 39PN988, 39PN1012,

39PN1139, 39PN1157, 39PN1200, 39PN1253, 39PN1257, 39PN1599, 39PN1813, 39PN2129, 39PN2526, 39PN2527, 39PN2692, 39PN2758, 39PN2782, 39PN2796, 39PN2821, 39PN2841

*Flume or Ditch:* 39CU2111, 39CU2116, 39CU2197, 39FA828, 39FA1089, 39FA1514, 39FA1518, 39FA2110, 39FA2210, 39LA380, 39LA429, 39LA433, 39LA473, 39LA486, 39LA500, 39LA501, 39LA591, 39LA1243, 39PNLA2045, 39LA2026, 39LA2029, 39LA2053, 39LA2056, 39LA2057, 39LA2059, 39LA2060, 39LA2069, 39LA2085, 39LA2090, 39LA2092, 39LA2109, 39LA2120, 39LA2126, 39LA2129, 39LA2134, 39LA2135, 39LA2136, 39LA2137, 39LA2203, 39LA2220, 39LA2223, 39MD370, 39MD2122, 39MD2123, 39PN167, 39PN368, 39PN377, 39PN745, 39PN758, 39PN762, 39PN941, 39PN979, 39PN1207, 39PN1221, 39PN1224, 39PN1253, 39PN1254, 39PN1295, 39PN1354, 39PN1422, 39PN1466, 39PN1760, 39PN1990, 39PN2011, 39PN2023, 39PN2046, 39PN2048, 39PN2071, 39PN2077, 39PN2082, 39PN2084, 39PN2085, 39PN2143, 39PN2148

*Dump:* 39CU1093, 39CU1277, 39CU1323, 39CU1325, 39CU1778, 39CU2554, 39CU2562, 39CU2868, 39LA367, 39LA410, 39LA761, 39LA903, 39LA904, 39LA916, 39LA946, 39LA949, 39LA958, 39LA1063, 39PN1073, 39PN1351, 39PN1520, 39PN1846, 39PN2646,

*Other:* 39CU46 (alignment), 39CU216 (stage station), 39CU246 (possible S&G cattle headquarters), 39CU316 (fire lookout), 39CU434 (well), 39CU505 (burial), 39CU602 (burial), 39CU663 (bridge), 39CU689 (tie camp), 39CU707 (burial), 39CU722 (hearth), 39CU839 (burial), 39CU844 (tourist lodge), 39CU853 (corral), 39CU1050 (trough), 39CU1057 (ski jump), 39CU1163 (quarry), 39CU1305 (breastworks), 39CU1327 (road), 39CU1337 (roadbed or ditch), 39CU1356 (bridge), 39CU1362 (racetrack), 39CU1393 (trailer), 39CU1400 (lime kiln), 39CU1483 (cairn), 39CU1528 (mower), 39CU1532 (tent camp), 39CU1533 (unspecified industrial), 39CU1570 (ramp), 39CU1767 (automobile), 39CU1784 (trough), 39CU1785 (hearth), 39CU1798 (stage station), 39CU2559 (bridge), 39CU2763 (post office), 39CU2876 (cairn), 39CU2786 (well, windmill), 39CU3050 (possible burial), 39CU3190 (corrals?), 39CU3199 (fence line), 39CU3328 (fort), 39CU3333 (lookout cabin), 39CU3344 (hearth), 39CU3399 (automobile), 39CU3437 (well), 39CU3439 (well), 39CU3488 (well), 39CU3549 (hearth), 39CU3550 (loading dock?), 39FA212 (burial), 39FA413 (fort), 39FA461 (burial), 39FA1468 (burial), 39FA2115 (road), 39LA45 (burial), 39LA83 (grave), 39LA86 (cemetery), 39LA91 (trailer), 39LA167 (bridge), 39LA219 (World War II grain reserve storage), 39LA230 (burial), 39LA289 (cemetery), 39LA294 (cemetery), 39LA333 (burial), 39LA343 (grave), 39LA349 (trough), 39LA560 (dairy), 39LA379 (cemetery), 39LA384 (kiln), 39LA598 (kiln), 39LA601 (trough), 39LA606 (quarry), 39LA616 (electric plant), 39LA618 (hearth), 39LA658 (cemetery), 39LA679 (telegraph), 39LA687 (corrals, graves, dugout), 39LA688 (cemetery), 39LA700 (culvert), 39LA705 (lime kiln), 39LA714 (quarry), 39LA751 (quarry), 39LA779 (culvert), 39LA786 (cairn), 39LA803 (automobile), 39LA804 (automobile), 39LA817 (industrial), 39LA918 (culvert), 39LA1006 (fire lookout), 39LA1008 (spring development), 39LA1009 (road), 39LA1010 (automobile), 39LA1015 (culvert), 39LA1022 (trough), 39LA1043 (tourist lodge), 39LA1076 (unknown industrial), 39LA1141 (burial), 39LA1247 (tourist camp), 39LA1248 (fire lookout), 39LA1286 (culvert), 39LA1305 (electric plant), 39LA1324 (tourist camp), 39LA1329 (burial), 39LA1337 (windmill, sheep camp), 39LA1338 (sheep pens), 39LA1383 (burial), 39LA1475 (youth camp), 39LA2058 (fence line), 39LA2142 (road), 39LA2147 (road), 39MD163 (ice-house), 39MD312 (whistle stop), 39MD313 (lime kiln), 39MD348 (brick factory), 39MD367 (brick kiln), 39MD375 (breastworks), 39MD426 (automobile), 39MD449 (bridge), 39MD470

(road), 39MD491 (hearth), 39MD578 (fire lookout), 39MD640 (burial), 39MD678 (house/gas station/shop), 39MD706 (possible stage stop), 39MD711 (still), 39MD726 (well), 39MD729 (tourist cave booth), 39MD730 (stage barn), 39MD742 (farm machinery), 39MD3002 (military post), 39PN158 (youth camp), 39PN319 (fort), 39PN382 (fire lookout), 39PN385 (spring development), 39PN390 (spring development), 39PN391 (spring development), 39PN396 (cemetery), 39PN421 (burial), 39PN465 (burial), 39PN552 (industrial), 39PN580 (lookout tower), 39PN660 (sheep camp), 39PN683 (industrial), 39PN697 (industrial), 39PN716 (industrial), 39PN718 (industrial), 39PN722 (industrial), 39PN729 (industrial), 39PN734 (burial), 39PN775 (quarry), 39PN790 (ranger station), 39PN849 (ranger station), 39PN929 (industrial), 39PN941 (industrial), 39PN981 (cemetery), 39PN982 (spring development), 39PN983 (ranger station), 39PN1066 (telegraph), 39PN1113 (fire lookout), 39PN1114 (culvert), 39PN1123 (culvert), 39PN1168 (bridge), 39PN1171 (ranger station), 39PN1172 (culvert), 39PN1193 (brick factory), 39PN1197 (water mill), 39PN1212 (culvert), 39PN1215 (culvert), 39PN1216 (culvert), 39PN1231 (burial), 39PN1238 (culvert), 39PN1271 (culvert), 39PN1334 (culvert), 39PN1355 (culvert), 39PN1389 (trailer), 39PN1419 (spring development), 39PN1430 (cairn), 39PN1442 (automobile), 39PN1448 (well), 39PN1471 (spring development), 39PN1613 (cemetery), 39PN1818 (bridge), 39PN1823 (hay loader), 39PN1959 (spring development), 39PN1973 (cowboy camp), 39PN1979 (smelter), 39PN1985 (culvert), 39PN1992 (well), 39PN2031 (road and wagon parts), 39PN2033 (road), 39PN2068 (culvert), 39PN2078, 39PN2101 (road), 39PN2130 (firebreak), 39PN2573 (well), 39PN2718 (still), 39PN2761 (privy), 39PN2764 (hearth), 39PN2777 (hearth), 39PN2785 (ranger station), 39PN2821 (dam, corrals), 39PN2989 (electric plant), 39PN2990 (electric plant)

## **Prehistoric and Historic Themes**

*Sacred Sites, Traditional-Use Sites, and Burials.* The Black Hills region has only five verifiable Native American burial sites. One was unearthed by a Civilian Conservation Corps crew during road construction in 1938. It included the remains of at least two individuals, as well as some shell beads (Beaubien 1959:1). The location of the bones taken from the site is not known, but the site itself is still intact and appears to contain additional burials. Another site contained a Native American burial reported to have been disturbed by looters. The current status of this site is not known. As noted above, a hearth in a Late Prehistoric tipi ring site in the southern Black Hills contained human bone: a nearly complete infant skeleton and one bone from an adult. These bones were turned over to local Indian tribes for reburial. Human bone was encountered during test excavation of a hearth within a very large, complex occupation site. A few shell disk beads were found with the bones. This burial was covered up again. Site 39MD22 is the location of a cemetery used by a band of Utes that came to the Black Hills in 1908 attempting to relocate on one of the Lakota reservations.

Sites reported as possible graves include one with possible milled lumber that may have been from a scaffold but without any bones or likely grave goods, and three cairns that may cover graves. These were not excavated.

The Black Hills as a whole, and many individual places within them, are sacred in the traditions of Lakota, Cheyenne, Kiowa, Naishan-Dene (Kiowa-Apache), Arapaho, and Arikara peoples (Sundstrom 1997b). Places in or near the Black Hills linked to Native American religious traditions include: the Red Valley or Racetrack, Devils Tower, Bear Butte, Bear Butte Lake, Buffalo Gap, Wind Cave, Inyan Kara Mountain, Gillette Prairie, Hot Springs, Rapid Creek, Black Elk Peak, and

Sun Dance Mountain (Sundstrom 1997b). Besides these, the numerous rock art sites, caves, and vision quest sites within the Black Hills are also sacred places (Sundstrom 1997b; Albers 2003). Only those that contain features or artifacts are recorded as archaeological sites. Some features have undoubtedly been classified as other site types. Small stone circles or ovals are more likely to be vision quest stations than places where tipis stood, for example. Of interest in this regard are some large cairns in Wind Cave National Park that appear collapsed in the center. A glass trade bead and an apparently unused, well-crafted biface were found at these cairns (Galindo 2004). Since the site contained no other artifacts or activity features, it appears most likely it was a vision quest or burial site at which people left the biface and bead as offerings. Lakota people and their guests used another site in this area for Sun Dance and sweat lodge ceremonies in recent times; this locality also contains historic and prehistoric artifacts (A. Johnson 1988).

Traditional activities associated with the Black Hills include the Sun Dance, winter camps, gathering lodge poles, prayer, gathering edible and medicinal plants, communal antelope and bison drives, and hunting mountain lions. Many religious concepts are embedded in the unique landscape features of the area (Sundstrom 1997b; Galindo 2004:149–163; Albers 2003). Today the area has come to symbolize indigenous struggles to regain use and control of traditional homelands. Many federally recognized tribes, including those of the Lakota, Northern Cheyenne, Eastern Shoshone, Arapaho, Kiowa, Crow, and Ponca, have expressed an interest in the Black Hills as part of their cultural heritage. These groups should be included in any decisions regarding site management in this region, and they should be consulted for more information about places of special historic and cultural importance.

***Prehistoric Quarries.*** The Black Hills area has numerous quarry sites for quartzites, cherts, petrified wood, silicified siltstones, and other rock. For more information, see the section on quarry sites in the Subcontexts section of this report.

*Quarry Sites:* 39BU6, 39CU6, 39CU16, 39CU19, 39CU75, 39CU81, 39CU231, 39CU272, 39CU313, 39CU314, 39CU315, 39CU320, 39CU366, 39CU386, 39CU469, 39CU473, 39CU474, 39CU478, 39CU479, 39CU484, 39CU485, 39CU551, 39CU629, 39CU630, 39CU631, 39CU655, 39CU672, 39CU686, 39CU700, 39CU735, 39CU869, 39CU870, 39CU871, 39CU872, 39CU873, 39CU875, 39CU876, 39CU1029, 39CU1047, 39CU1096, 39CU1098, 39CU1107, 39CU1113, 39CU1114, 39CU1116, 39CU1119, 39CU1182, 39CU1194, 39CU1235, 39CU1236, 39CU1238, 39CU1285, 39CU1308, 39CU1368, 39CU1371, 39CU1383, 39CU1395, 39CU1402, 39CU1419, 39CU1466, 39CU1495, 39CU1590, 39CU1593, 39CU1632, 39CU1693, 39CU1717, 39CU1721, 39CU1730, 39CU1736, 39CU1969, 39CU2526, 39CU2527, 39CU2535, 39CU2536, 39CU2537, 39CU2540, 39CU2541, 39CU2543, 39CU2551, 39CU2788, 39CU2805, 39CU2875, 39CU3048, 39CU3130, 39CU3134, 39CU3138, 39CU3141, 39CU3401, 39CU3405, 39CU3428, 39CU3505, 39CU3529, 39CU2805, 39FA49, 39FA49B, 39FA55, 39FA103, 39FA228, 39FA276, 39FA417, 39FA422, 39FA469, 39FA484, 39FA497, 39FA504, 39FA508, 39FA545, 39FA547, 39FA548, 39FA627, 39FA753, 39FA760, 39FA761, 39FA762, 39FA763, 39FA764, 39FA765, 39FA965, 39FA966, 39FA1001, 39FA1004, 39FA1051, 39FA1177, 39FA1460, 39FA1530, 39FA1539, 39LA138, 39LA232, 39LA259, 39LA260, 39LA303, 39LA318, 39LA344, 39LA345, 39LA378, 39LA407, 39LA503, 39LA634, 39LA729, 39LA730, 39LA752, 39LA851, 39LA1041, 39LA1120, 39LA1263, 39LA1264, 39LA1269, 39MD29, 39MD64, 39MD79, 39MD84, 39MD123, 39MD134, 39MD752, 39PN88, 39PN89, 39PN91, 39PN92, 39PN93, 39PN95, 39PN116, 39PN183, 39PN284, 39PN634, 39PN773, 39PN1140, 39PN1181, 39PN1375,

39PN1401, 39PN1403, 39PN1418, 39PN1452, 39PN1453, 39PN1454, 39PN1455, 39PN1502, 39PN1835, 39PN2710

**Rock Art Sites.** For a discussion of rock art sites in the Black Hills, see section on rock art in Subcontexts section of this report.

**Stone Circles.** Stone circle sites occur throughout Black Hills, especially along stream courses that cut through the Hogback affording access from the foothills and plains to the interior. Most of the stone circle sites are thought to be the remains of winter camps of groups that summered in the higher Black Hills or in the surrounding plains (Sundstrom 1999; Galindo 2004). Ethnographic accounts confirm the latter pattern for the contact era (Bordeaux 1929:45; J. Brown 1992:13; Hassrick 1964:173; Hyde 1968:194; LaPointe 1976:76–77; Stone 1982), but it is not clear whether this pattern held in pre-contact times. Some sites listed as stone circles are the remains of vision quest stations, rather than tipis. These are small (2–3 meters in maximum dimension) and often oval or rectangular rather than round.

*Stone Circle Sites:* 39BU136, 39BU137, 39CU7, 39CU199, 39CU242, 39CU253, 39CU356, 39CU359, 39CU361, 39CU362, 39CU413, 39CU442, 39CU446, 39CU468, 39CU550, 39CU566, 39CU620, 39CU632, 39CU649, 39CU659, 39CU670, 39CU676, 39CU682, 39CU691, 39CU721, 39CU752, 39CU768, 39CU790, 39CU805, 39CU806, 39CU820, 39CU878, 39CU899, 39CU913, 39CU918, 39CU924, 39CU938, 39CU1134, 39CU1144, 39CU1239, 39CU1289, 39CU1336, 39CU1399, 39CU1501, 39CU1583, 39CU1585, 39CU1586, 39CU1588, 39CU1589, 39CU1590, 39CU1598, 39CU1599, 39CU1600, 39CU1605, 39CU1606, 39CU1607, 39CU1619, 39CU1620, 39CU1621, 39CU1624, 39CU1630, 39CU1650, 39CU1668, 39CU1676, 39CU1680, 39CU1681, 39CU1682, 39CU1685, 39CU1737, 39CU2623, 39CU2642, 39CU2723, 39CU2881, 39CU2882, 39CU2883, 39CU3042, 39CU3044, 39CU3160, 39CU3161, 39CU3163, 39CU3303, 39CU3403, 39CU3406, 39CU3427, 39CU3449, 39CU3477, 39CU3478, 39CU3512, 39CU3535, 39CU3689, 39CU3712, 39CU3728, 39FA1, 39FA49B, 39FA204, 39FA211, 39FA217, 39FA218, 39FA220, 39FA226, 39FA237, 39FA231, 39FA362, 39FA496, 39FA739, 39FA986, 39FA1029, 39FA1104, 39FA1105, 39FA1174, 39FA1196, 39FA1197, 39FA1335, 39FA1138, 39FA1461, 39FA1520, 39FA1545, 39FA1604, 39FA1608, 39MD25, 39MD20, 39MD735, 39PN1324

**Animal Kill Sites.** The Vore site is a large sinkhole in the Black Hills of Wyoming. It contains remains from several Late Prehistoric period buffalo kill events (Reher and Frison 1980). People drove small herds of bison across a plateau and off a precipice to the deep sinkhole below. Cheyenne groups used the Vore site for trapping bison during the Protohistoric period (Stands in Timber and Liberty 1967:86). Cheyenne historians also remembered a cliff drive the Arapahos used for trapping elk near Elk Horn Peak in the northwestern Black Hills (Grinnell 1923I:276; Schwartz 1988:50); however, archaeologists have not found the elk kill site.

The Kenzy site, 39PN1081, contained the remains of several bison, dating to the Late Prehistoric and Protohistoric periods (Saunders *et al.* 1994). These animals probably were taken as individuals or in small groups, rather than in a mass kill event. This site is in one of the large, high-altitude prairies or “balds” in the Limestone Plateau. At Kenzy and other sites in this part of the Black Hills, the bison bones indicate a subspecies intermediate between prairie and mountain bison (Wigda 2007).

Another buffalo jump site lies in the southeastern Black Hills. The Sanson Buffalo Jump, 39CU2, contains lines of stone marking a drive lane along which bison were diverted to a steep cliff. Limited investigation of the site indicates a Late Prehistoric date for it (Agenbroad 1990; Vawser and Schilling 2013). The stream terrace across from the bison fall contains several stone circles, but these were not test excavated.

The Hawken site in the Wyoming Black Hills was an extensive bison bone bed containing Hawken projectile points. This site was used at least twice during the Early Archaic period and provides important evidence that bison hunting took place during this prolonged dry climatic episode (Frison *et al.* 1976; Frison 1978, 1991).

Otherwise, evidence for large-scale bison procurement is limited. The Harbison site, 39CU570, contained a sparse scatter of bison bone and a single artifact eroding from a creek bank in the eastern Black Hills; the site has not been test excavated (Sundstrom 1981b). The Orville Elliot site, 39FA472, similarly is a buried bison bone bed that remains uninvestigated. Other bison bones exposed in creek banks, road cuts, or mining operations had no artifacts or features in association and may be from animals that died naturally. These include 39FA480, 39CU942, 39CU1262, and 39CU1982. Given that buffalo jumps and other large animal kill sites typically contain few artifacts, it is reasonable to treat these as potential archaeological sites until test excavations can provide more specific information on how these sites formed. Site 39PN954 contained elk bone and a single flake, again indicating a possible, but not confirmed, kill site.

## **Archaeological Potential**

The archaeological potential of the Black Hills is high for prehistoric and historic sites alike. This archaeological region is the best known in the South Dakota. (Although some would reserve that distinction for the Missouri River regions, archaeologists actually know very little about their use prior to about 900 CE.) The Black Hills region is one of very few in the state with enough intact Paleoindian and Early Archaic site deposits to numerous sites recorded and test excavated to permit studies of stone-tool technology, rock art traditions, and movement of distinct groups throughout the larger northern Great Plains and eastern Rockies region. Its geographic position between the Missouri River and the basin and range country of Wyoming uniquely suits the region for studies of trade networks and migration routes. Its distinctive tool-stone sources provide an index for people moving into and out of the region. The diverse landscapes of the Black Hills can contribute to studies of mountain versus plains adaptations. The unique geological and biological resources of the Black Hills, the presence of caves, rock shelters, high peaks, and winter bison range contribute to its importance in understanding human history in the northern Great Plains.

In historic times, the Great Sioux Reservation, Black Hills Expedition, gold rush, establishment of corporate ranches with foreign capital, and town building combined to create a rich and complex archaeological record. The area contains numerous gold-rush era ghost towns. Deadwood and other towns had ethnic enclaves not found elsewhere in the region, including Chinese and Jewish. Fort Meade was an important cavalry base through World War II. The area also has many sites related to tourism and recreation including youth camps and roadside attractions, as well as the more typical ranch and homestead sites.

New computer software for Geographic Information Systems (GIS) applications makes the large amount of data from the region manageable. Black Hills National Forest and the South Dakota State Historical Society are cooperating to make their databases compatible.

## **Management Considerations**

One problem in the Black Hills is that researchers have more information about upland and forested areas than the stream valleys and open areas. The less rugged areas were claimed as homesteads, while most of the steep interior became part of Black Hills National Forest. Nearly all the Forest Service lands have been surveyed, while private property has been examined only incidental to construction of highways, pipelines, powerlines, and the like. This bias can largely be addressed through judicious use of data formatted for Geographic Information Systems (GIS) analysis.

Sites in the Black Hills are threatened by expansion of local towns, by mineral extraction, logging, and recreational activities such as rock climbing and trail rides. Most of these activities require site survey and evaluation; thus, resource managers have the opportunity to gather at least minimal information before sites are damaged. Resource managers need to monitor the effects of everything from cattle tanks to youth camps and put appropriate protection in place. Of special concern is Custer State Park. This large tract of state-owned land is poorly known archaeologically. It is a popular tourist destination in the summer and fall months. Sites there are threatened by construction of tourist facilities and roads, as well as the large number of visitors.

The Black Hills as a whole, as well as individual features within the region, are considered sacred to several Indian nations. Resource managers need to be sensitive to traditional Native American beliefs and activities connected with the area and to manage sites in a way that respects and accommodates them. Ongoing consultations between federal agencies and tribal representatives are required by law and necessary to develop the background knowledge to manage historic and traditional places appropriately.

## **Sites Listed in the National Register of Historic Places**

39CU70, 39CU91, 39CU510, 39CU511, 39CU512, 39CU513, 39CU514, 39CU515, 39CU516, 39CU1619, 39FA7, 39FA49, 39FA58, 39FA75, 39FA79, 39FA86, 39FA88, 39FA89, 39FA90, 39FA91, 39FA94, 39FA99, 39FA243, 39FA244, 39FA277, 39FA316, 39FA321, 39FA389, 39FA395, 39FA446, 39FA447, 39FA448, 39FA542, 39FA554, 39FA676, 39FA677, 39FA678, 39FA679, 39FA680, 39FA681, 39FA682, 39FA683, 39FA684, 39FA685, 39FA686, 39FA687, 39FA688, 39FA690, 39FA691, 39FA767, 39FA779, 39FA788, 39FA819, 39FA1010, 39FA1013, 39FA1046, 39FA1049, 39FA1093, 39FA1152, 39FA1154, 39FA1155, 39FA1190, 39FA1201, 39FA1204, 39FA1303, 39FA1336, 39FA1638, 39FA1639, 39LA59, 39LA61, 39LA165, 39LA184, 39LA185, 39LA186, 39LA300, 39MD20, 39MD32, 39MD81, 39MD3002, 39PN376

These are rock art sites, with the following exceptions: 39FA779 is the Beaver Creek Rock shelter; 39CU1619 is a very large stone circle camp; 39LA300 is the Deadwood Historic District, and 39MD3002 is the Fort Meade Historic District. The remaining Lawrence County (LA) sites are archaeological sites lying within the Frawley Ranch Historic District.

## Region 8: White River Badlands

### Setting

The White River Badlands, or Big Badlands, are part of the Tertiary Tablelands section of the Missouri Plateau. The Badlands comprise heavily eroded buttes and gullies developed in Pierre Shale overlain by Chadron and Brule Formation claystones. The Pierre shale outcrops in places as rounded low hills of black shales, occasionally oxidized to red or yellow hues. The Chadron and Brule formations have eroded into jagged peaks with exposed bands of gray, pink, buff, and tan sediments fluted by thousands of tiny gullies. In places, Miocene sands, gravels, and ash deposits crown the Brule peaks and mesas. Terraces and sod tables in the stream valleys generally have exposed banks, affording easy discovery of paleosols and archaeological deposits. The White River Badlands archaeological region includes all of Oglala Lakota and the former Washabaugh (now Jackson) County, and portions of Fall River, Pennington, Jackson, Bennett, Mellette and Todd counties. The eastern boundary is arbitrarily placed a mile along, and a mile to the east of, the Little White River. The area is drained by the White River, a sediment-laden braided stream, and its permanent and intermittent tributaries. Much of the area is too geologically active and dry to support vegetation and soil development; however, short- to mid-grass prairie occurs along streams and on some buttes, and cedar (a hybrid of Rocky Mountain juniper and eastern red cedar) and ponderosa stands dot some of the larger mesas. Bottomlands and sheltered areas contain small stands of cottonwood, green ash, and hackberry trees. The Badlands are famous for the stark beauty of their mazelike landscape and as the most productive Oligocene fossil source in the world.



*Figure 144. Typical landscape of the White River Badlands (L. Sundstrom photo).*

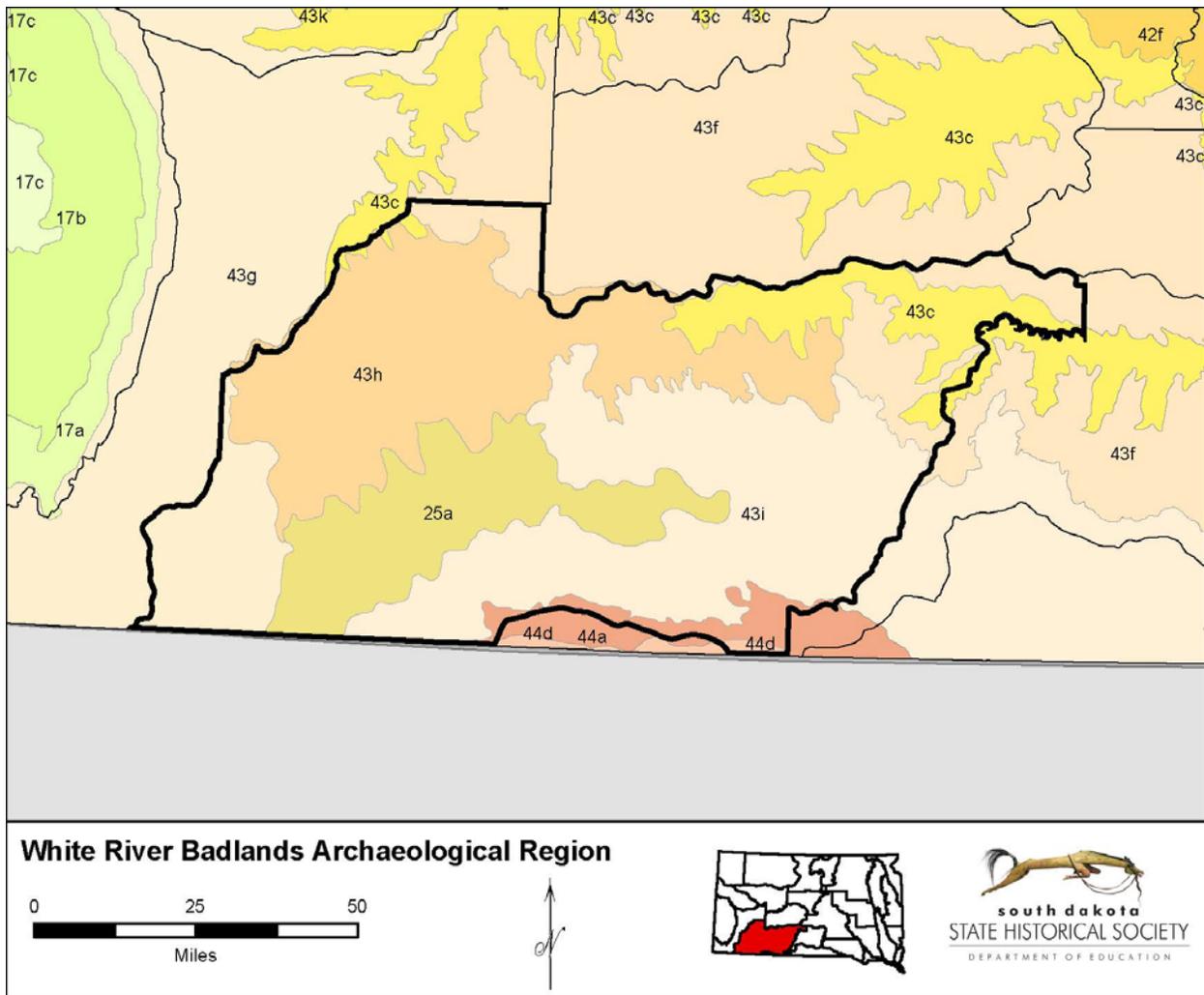


Figure 145. Ecoregions of the White River Badlands archaeological region.

25: Western High Plains

25a: Pine Ridge Escarpment, unglaciated, alternating ridges and valleys with entrenched channels; elevations increasing from northeast to southwest; rock outcrops

43: Northwestern Great Plains

43c: River Breaks, unglaciated, highly dissected hills and uplands bordering major rivers and associated alluvial plains.

43f: Subhumid Pierre Shale Plains, unglaciated, undulating plain; steep-sided, incised stream channels.

43g: Semiarid Pierre Shale Plains, unglaciated, undulating to rolling plains; steep-sided, incised stream channels.

43h: White River Badlands, unglaciated, highly dissected landscape of eroded walls and escarpments, isolated tablelands and buttes; dense, dendritic drainage pattern; ephemeral streams highly erosive.

43i: Keya Paha Tablelands, unglaciated, level to rolling sandy plains; dissected near streams.

44: Nebraska Sand Hills.

44a: Nebraska Sand Hills, sand sheets and extensive fields of barchanoid, parabolic, and domal sand dunes; high water table, interdune wetlands.

## Previous Archaeological Investigations

In the White River Badlands, rich and conspicuous fossil deposits have drawn the attention of scientists from the early days of non-Indian exploration. By the 1840s, universities and museums had begun to launch collecting expeditions into the area (cf. Leidy 1847, 1856, 1869; Prout 1846, 1847). Geologists soon noticed hearths eroding from the younger terrace exposures. These were reported as possible means of dating the buried soils exposed in the terrace banks. The earliest published report on Badlands archaeology described a buried soil horizon one to three meters below surface in a creek terrace near Wounded Knee. This contained pottery, chipped stone artifacts, and seven hearths (Sheldon 1905). The presence of hearths in terrace banks along the upper White River was noted as early as 1891 (Barbour and Schultz 1936). Several reports on archaeological material in terraces of the White River were completed in the 1930s and 1940s (Barbour and Schultz 1936; MacClintock *et al.* 1936; Schultz 1938; Schultz and Stout 1934; Champe 1946). Folsom-Plano materials found with broken bone and hearth features were reported from the White River (MacClintock *et al.* 1936). Other researchers noted the presence of Woodland and Central Plains Tradition pottery in the area (Strong 1940:387; Champe 1946).

The first large-scale archaeological investigations in southwestern South Dakota were part of the Smithsonian Institution-River Basin Surveys program conducted to salvage information in advance of reservoir construction projects. In 1949, Richard Wheeler examined a proposed dam and reservoir site on the White River in Shannon County (Oglala Lakota County) near Rockyford. Wheeler recorded three sites, including 39SH1, a pre-ceramic site similar to the Middle Archaic Signal Butte site in northwestern Nebraska (Wheeler 1949b). In 1953, Paul Beaubien of the National Park Service completed a survey within the North Unit of Badlands National Monument to confirm and evaluate sites reported by Morris F. Skinner, a field associate with the Frick Laboratory, American Museum of Natural History, who had been collecting fossil materials. Beaubien recorded at least 30 sites. Most of these were either scatters of stone artifacts on the butte tops or hearths, fire-pits, or bone eroding out of cutbanks, gullies, or sod tables. A few sites contained ceramics, as well as stone tools and bone scrap (Beaubien 1953). The most important sites in Beaubien's project were the Johnny site (39JK4) and the Pinnacles site (39PN9). In 1958, Dee Taylor excavated portions of the Johnny site and the Pinnacles site for the National Park Service, finding them to contain Woodland and Plains Village components (D. Taylor 1961). Pinnacles contained Extended Coalescent ceramics and Johnny had Initial Middle Missouri and Post-Contact Coalescent ceramics. Based on his investigations in the White River Badlands, Taylor developed a cultural sequence comprising six periods: Early Hunters, Hunters and Gatherers, Hunter and Collectors, Plains Woodland (450–800 CE), Early Plains Village (800–1300 CE), Late Village (1300 CE-contact), and Post-Contact (D. Taylor 1961). The first of these corresponds to the Paleoindian period; the second to the Middle Archaic; and the third to the Late Archaic defined for other regions of the Great Plains.

Since the 1970s, a series of small to medium-scale surveys and excavations have been carried out. Like earlier investigations, these recorded large numbers of sites dating to the Plains Woodland, Plains Village, and Late Prehistoric periods. Highway construction at Cedar Pass and the Pinnacle Entrance triggered surveys in those areas (Britt 1970; Calabrese 1974a, 1974b). Site 39JK2 was test excavated and found to contain Plains Village ceramics, as well as chipped stone artifacts and a dry-laid stone feature (Britt 1970). In 1972, J.S. Sigstad surveyed a portion of Highway 44 in the Badlands for the South Dakota Department of Transportation. Two sites

(39PN54 and 39PN55) were recorded and subsequently tested in 1975. One site (39PN54) produced pottery similar to Dismal River wares from the Central Plains (Sigstad and Luoma n.d.). In 1974, a reconnaissance survey within the Buffalo Gap National Grasslands identified 18 sites (Kay 1974). The same year, the South Dakota Geological Survey radiocarbon dated two hearths along Bear Creek. The lower hearth yielded a date of  $780\pm 130$  BP, and the upper feature provided a date of  $2350\pm 180$  BP (Harksen 1974). The inversion of these dates was explained by gully erosion of the older strata and subsequent filling, during which time a later hearth was left in younger, but lower, soil stratum of the extinct gully. In 1977, a National Park Service crew surveyed the Doors and Windows parking lot but recorded no sites. The following year, National Park Service crews recorded 27 sites during a survey of the proposed White River Development Area of the South Unit of the National Monument (Falk *et al.* 1978) and 13 archaeological sites during survey of the proposed Sage Creek Rim Road (Lincoln 1978).

In 1980, L. Adrien Hannus began the first major archaeological work in the White River Badlands outside of the National Monument area with the excavation of the Lange-Ferguson site (39SH33), a Clovis mammoth kill and butchering site (Hannus 1985, 1990). The White River Badlands Regional Research Project began in 1981 under the supervision of Hannus and Timothy R. Nowak. This multi-year research project was initiated to investigate the archaeological resources of portions of the Badlands that had received little professional attention, namely those areas outside of the National Monument. This project included research on the West Horse Creek chert and chalcedony quarry (Nowak *et al.* 1984), survey in Jackson and Shannon (now known as Oglala Lakota) counties (Lueck and Butterbrodt 1984), and test excavations along Pass Creek in Jackson County (Keller *et al.* 1984). These excavations revealed several sites to be seasonal camps or special activity sites dating from the Late Archaic through Late Prehistoric periods.

In 1982, Archaeological Research Center conducted reconnaissance surveys along a proposed section of the Highway 44 right-of-way, recording 58 archaeological, historic, and paleontological sites (Sundstrom and Malone 1982). Test excavations followed at several of these sites (Haberman *et al.* 1984; Rood *et al.* 1984). These indicated short-term seasonal use of the area from the Late Archaic through Late Prehistoric period. The White River Badlands Regional Research Project surveyed in Shannon (Oglala Lakota), Pennington, Custer and Bennett counties (Hannus *et al.* 1984; Lueck and Butterbrodt 1984; Nowak *et al.* 1984; Hannus *et al.* 1986; Hannus *et al.* 1989). During the 1980s and 1990s, National Park Service archaeologists worked in several areas of Badlands National Park. The Johnny site was revisited to further explore its connection to Middle Missouri tradition complexes (A. Johnson 1989b, 1993). This indicated that Initial Middle Missouri tradition peoples were using the Badlands seasonally soon after they established their first villages along the Missouri River. The site appears to represent a warm-season base camp from which hunting, stone tool production, and group maintenance activities took place.

In 1998, Nebraska National Forest archaeologists investigated two sites, 39JK98 and 39JK99, through surface collection and limited excavation (Frost and Redmond 1998). Both sites were widely dispersed scatters of chipped stone tools and debris all of rock found nearby in cobble form. The main activity at each site was procuring tool-stone and roughing out bifacial tools. Site 39JK98 contained three stone tool production areas. In addition, one section of 39JK98 had a metate and several hammerstones, suggesting that some plant food processing may have taken place there. Site 39JK99 contained a Late Prehistoric projectile point as well as about 60 flakes, a few core fragments, and a hammerstone. Neither site had subsurface deposits.

More recently, archaeologists under contract to the National Park Service compiled an overview of the region's archaeology (Hannus *et al.* 2003). This study summarized previous archaeological and geomorphological research in the area.

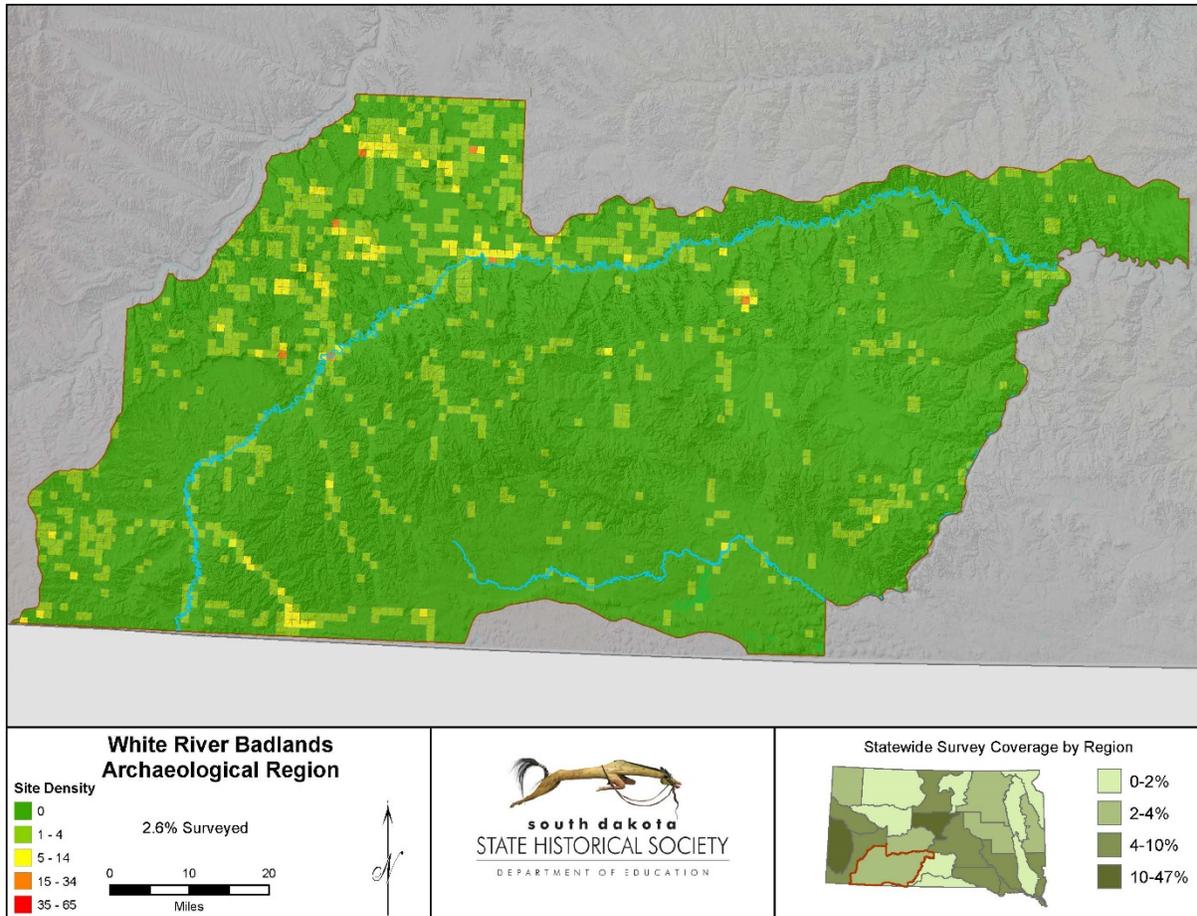


Figure 146. Density of known archaeological sites, White River Badlands archaeological region.

## Historic Contexts

**Paleoindian.** The Lange-Ferguson site, 39SH33, is a mammoth kill and butchering site excavated in the early 1980s (Hannus 1985, 1990). The site produced direct evidence for the use of mammoth bone tools for butchering. Excavations unearthed two complete Clovis projectile points (reworked) and the base of a third. The points are produced on chert, likely from White River gravels. One tertiary flake recovered from the Lange-Ferguson site is produced on a brown chalcedony, probably derived from the nearby West Horse Creek quarry (39SH37). The presence of this flake suggests that the quarry site was used during the Clovis period. Projectile points in private collections indicate several other Clovis sites in the region. The Folsom Spring site, 39SH101, is a camp area associated with an ancient spring. Unfortunately, it is deflated, meaning that the surrounding fine sediments have eroded away, leaving behind a pavement of the larger gravels and artifacts. Projectile points in private collections indicate that more Folsom sites occur in the Badlands, but these have not been formally recorded.

Several sites in the Badlands region contain late Paleoindian projectile points. These sites vary from an isolated projectile point to a multiple-component buried site. Site 39SH85 had only an isolated Alberta-like point. Another site, 39PN5, had a projectile point similar to a Plainview type (D. Taylor 1961:80). Late Paleoindian materials are commonly reported in surface collections made by avocational archaeologists in the region; however, the locations of these sites have not been confirmed. Apart from Lange-Ferguson, no Paleoindian sites have been excavated in the region.

**Early Archaic.** Four Badlands sites contained Early Archaic projectile points: 39JK100, 39SH54, 39SH100, and 39SH207. Two of the sites are isolated finds of side-notched projectile points. The other two are multiple component sites that appear to have Early Archaic materials but have not been test excavated. Virtually nothing is known of this period of Badlands history.

**Middle Archaic.** Site 39SH74 is an eroded hearth with flaking debris and part of an Oxbow projectile point (Hannus *et al.* 1989:160). Another Oxbow point was found at 39PN1747, a small scatter of prehistoric and historic artifacts on a hill slope. This complex marks the Early to Middle Archaic transition. Several sites have produced projectile points assigned to either Duncan or Hanna complexes. Most of these were deflated surface sites, meaning that the artifacts were left behind when the surrounding sediments eroded away. Four other sites are assigned to the Middle Archaic period, including one investigated in 1948 (Wheeler 1949b:2–3). Test excavations at 39TD37 yielded radiocarbon dates near the end of the Middle Archaic period: 2940±60 BP, 2670±70 BP, and 2690±200 BP (Haberman 1985a). In the Badlands a multiple-component site, 39PN561, had a buried hearth containing a McKean projectile point exposed in a cutbank (Sundstrom and Malone 1982). Another multiple component site in the Badlands, 39JK62, also contained a Middle Archaic projectile point, as did a series of hearths (39SH89) exposed in a creek bank (Lueck and Butterbrodt 1984). Test excavation of this site revealed a non-ceramic component underlying a ceramic-bearing level; however, little was found in it, apart from a concentration of lithic debris and bone fragments (Keller *et al.* 1984).

**Late Archaic.** Several types of sites are recorded for the Late Archaic. The Sod Table site, 39PN102, contained a large amount of fire-cracked rock and charcoal, a few bison bones, a chipped stone chopper, and small pressure retouch flakes from resharpening stone tools (Haberman *et al.* 1984). Charcoal from the cultural horizon was dated to 1560, 1750, and 1490 BP. The excavated portion had a dense layer of bison bone fragments, fire-cracked rock, chipped stone debris, a chopper, and a few charred edible seeds. The bone was smashed, suggesting extraction of marrow grease. In this process, bones were broken and boiled and the fat thus rendered skimmed from the surface. Most identifiable bone was bison, but rabbit, other small mammal, reptile/amphibian, and bird bone were also found at the site. The site also contained carbonized seeds of *Plantago*. This suggests a late summer or early fall occupation. The site was interpreted as a bone grease and pemmican production station used by a small group. It may represent one part of a seasonal round that would include large-scale communal hunting in late fall or winter (Haberman *et al.* 1984). A second, lower cultural level contained a hearth radiocarbon dated to 2490 BP, the Middle to Late Archaic transition.

The Pelican Lake complex is well represented in the Badlands. More than 20 sites contain Pelican Lake projectile points. At site 39PN607, a series of radiocarbon dates indicates a Late Prehistoric occupation, while the diagnostic projectile points were Late Archaic Pelican Lake and

Besant types (Rood *et al.* 1984:119–187). The earliest date from the site,  $1510 \pm 70$  BP, falls at the Late Archaic-Late Prehistoric transition. Artifacts and features indicated several activities: stone tool production, butchering, and plant food processing. Features included hearths, post holes, and concentrations of chipped stone debris and bone fragments. Hearths were shallow to deep basins, most containing large amounts of fire-cracked rock. The post holes were near hearths and may be the remains of drying racks or cooking apparatus. Six of the features contained carbonized seeds, most from the chenopod (goosefoot) family. Bone from the features included mouse, squirrel, rabbit, wood rat, and bison; however, most pieces were too fragmentary for identification.

About ten sites in the region contain Besant projectile points. Most of these are multiple-component sites. Another thirty sites are assigned to the Late Archaic period based on radiocarbon dates or projectile point types. Again, many of these are part of multiple-component sites.

**Woodland.** Three sites are assigned generally to the Woodland period, and two sites are described as Woodland or Plains Village (39JK111 and 39JK119).

Ceramics identified as Early and Middle Woodland occurred at 39JK63, along with Hanna, Besant, Avonlea, Pelican Lake, and Prairie Side-Notched, and Late Prehistoric triangular unnotched projectile points. A 4-meter-square excavation unit yielded Woodland ceramics classified as Badlands Thick (Early Woodland) and Kadoka Cord-Imprinted (Middle Woodland) (Keller *et al.* 1984; Lueck and Butterbrodt 1984:48–50). These came from a cultural level at 173 cm below surface. This upper level contained a series of 7 postmolds in an arc arrangement that may be part of a circle, such as might be left by supports for a tipi or other circular structure. This level also contained a few areas of charcoal-stained sand, a pit hearth, a charred log fragment, and small refuse pit. The pit and pit hearth contained tiny flakes, bone fragments, and charcoal. This level had chipped stone tools and debris and small amounts of bone, as well as ceramics. A lower cultural level did not contain diagnostic artifacts or datable charcoal. The relationship of the ceramics to the projectile points was not determined.

Limited excavations at the Long John site, 39JK68, uncovered a hearth radiocarbon dated to  $1200 \pm 130$  BP. The excavations recovered a few flakes and pieces of bone as well as fragments of two Plains Woodland vessels, one globular and cord impressed and one conoidal and smoothed (Keller *et al.* 1984).

Site 39JK111 is a Plains Village from either a Late Woodland or an Initial Middle Missouri complex (P. Miller 1994). Activities indicated by limited excavations and surface survey at the site include tool-stone acquisition, stone tool production, processing and consumption of meat, and camping. Tool-stone at the site came from nearby gravel deposits. A site with a Pelican Lake point, 39JK70, contained two cord-impressed and two plain sherds (Lueck and Butterbrodt 1984).

**Late Prehistoric.** The region contains seven or eight Avonlea complex sites, most in the Pass Creek and Fog Creek drainages (Hannus *et al.* 1984:40–41). Dates from these sites cluster around 1500 BP. Sites 39SH59 and 39SH62 contained Avonlea projectile points (Hannus *et al.* 1989:99) in association with radiocarbon dates of 1380 and 1410 BP. Another carbon sample from 39SH62 had an age of 1170 BP (Hannus *et al.* 2003). Site 39SH72 contained an Avonlea point and a ceramic rim sherd (Hannus *et al.* 1989:130). Site 39PN616 had two features, a hearth and a large charcoal-stained area that probably resulted from cleaning out the hearth (Rood *et al.* 1984). A

radiocarbon date from the hearth was 990 BP, placing the site in the Late Prehistoric period. A blue glass trade bead found on the surface indicates use of the area in Protohistoric or Historic times, as well. Charred fragments of pocket gopher and cottontail rabbit bone may indicate that these were used for food. A few pieces of ground stone were found, suggesting the use of plant foods, as well, but no carbonized plant remains were discovered.

Another Badlands site, 39PN607, produced evidence of multiple uses throughout the Late Prehistoric period but contained no ceramics (Rood *et al.* 1984). The site contained four basin-shaped hearths containing varying amounts of fire-cracked rock and carbonized seeds. Other features were three concentrations of chipped stone and three post holes. The chipped stone features contained mostly heat-treated cherts. The post holes were difficult to interpret but may represent drying racks. Dates from the hearths range from Late Archaic to Late Prehistoric. The presence of projectile points similar to Besant and Pelican Lake types supports the earlier dates. No definite Late Prehistoric projectile points were found, but the dates indicate sporadic use of the site throughout much of the period. The seeds and ground stone tools (including a pitting or nutting stone) clearly indicate that plant food processing was an important activity at this site. These included unspecified chenopods, goosefoot, grasses, dock, beans, prickly pear, *Plantago*, and cocklebur. The site also contained bone, including jackrabbit, pocket gopher, fish, and woodrat. Overall, 39PN607 appears to be a campsite focused on plant food processing but also used for stone tool production and general group maintenance. The diverse food remains suggest a generalized subsistence pattern making use of a wide variety of local resources.

Many more sites belong to the Late Prehistoric period. Of these, 24 are part of multiple-component localities. The majority of the sites are artifact scatters, but other site types are represented as follows: a possible bison kill (39JK3); West Horse Creek quarry (39SH37); a quarry site for West Horse Creek chert and Scenic chalcedony (39SH81); and a burial (39SH117) radiocarbon dated to 1090±70 BP (Beta-14771).

**Plains Village.** About 39 sites (excluding 39JK111 and 39JK119 discussed above) are assigned to the Middle Missouri tradition based on ceramics. A series of sites in the Fog Creek drainage contained Plains Woodland, Initial Middle Missouri, and Plains Village Tradition materials (A. Johnson 1993). These sites were interpreted as temporary camps. They contained thin buried cultural levels comprising charcoal, ash, fire-cracked rock, and flakes, with some bone and potsherds.

The Badlands region contains several Initial Middle Missouri variant sites, including the Johnny site (39JK4), 39PN586, and 39SH133. The Cedar Pass Butte site, 39JK2, contained Initial Middle Missouri and Extended or Post-Contact Coalescent ceramics, a triangular projectile point, and chipped stone artifacts. Associated with the ceramics was a dry-laid stone foundation for a two-room structure (Britt 1970). Initial Middle Missouri and Post-Contact Coalescent groups used the Johnny site, 39JK4 (D. Taylor 1961). Excavations there yielded a component dated at 1000 BP. One component represented an Initial Middle Missouri early summer camp (A. Johnson 1993). The assemblage contained 315 potsherds from about 9 vessels, arrow points, triangular bifaces, preforms, Badlands knives (reworked pieces of plate chalcedony), retouched flakes, scrapers, a bone spatula, and an incised rib. While the first researcher found the ceramics congruent with Initial Middle Missouri materials found along the Missouri River (A. Johnson 1993), a later study

recognized possible Central Plains Tradition wares, as well (Hannus *et al.* 2003). Bone included deer or pronghorn and duck. Virtually all of the tool-stone was from local (Badlands) sources.

Other sites in the region belong to the Extended Coalescent or Post-Contact Coalescent variants (39JK3, 39JK101, 39PN9, 39PN10, 39PN11, 39PN32, 39PN54, 39PN590, 39SH60, 39SH80). One site, 39SH111, is tentatively assigned to the Initial Coalescent variant (Church 1985). The Pinnacles site, 39PN9, appears to represent an Extended Coalescent base camp or hunting camp (D. Taylor 1961) that may have been used by Woodland tradition groups, as well. Ceramics at 39PN590 were similar to Extended Coalescent ware. The site contained a Plains Village unnotched triangular projectile point, along with end scrapers, ground-stone tool fragments, chipping debris, and fire-cracked rock. The site was interpreted as an occupation (Rood *et al.* 1984). Site 39PN54 contained a layer of fire-cracked rock, charcoal, bone, chipped stone artifacts, and ceramics. The ceramics were of Plains Village age and belong to either the Dismal River or Extended Coalescent cultural complex (Sigstad and Luoma n.d.; Haberman *et al.* 1984). Some researchers in Nebraska recognize an Extended Coalescent occupation of the Pine Ridge area just south of the Badlands (Bozell and Ludwickson 1988). This includes seasonal hunting camps and semi-permanent villages engaged in maize farming. The sites in the White River Badlands with both Extended Coalescent and Central Plains Tradition traits probably belong to this western Extended Coalescent complex. Besides 39JK2 and 39PN54, these include 39JK4, 39PN9, and 39SH68.

Plain, sand-tempered ceramics were found at 39SH81, a chalcedony quarry (Lueck and Butterbrodt 1984:17). Incised, grit-tempered pottery, probably from a single vessel was found at 39SH82. At 39SH90 cord impressed ceramics were found in a hearth dated at 845 BP (Lueck and Butterbrodt 1984). Cord-marked, punctated sherds were found eroding from a paleosol at 39JK66, along with chipped stone debris, bone fragments, and a possible hearth (Lueck and Butterbrodt 1984). A hearth designated 39SH93, containing a grinding slab but no ceramics, was similarly dated at 785 BP. Several others sites in the Badlands contain small numbers of sherds associated with undated artifact scatters (Lueck and Butterbrodt 1984; Sundstrom and Malone 1982). Incised and cordmarked ceramics at 39PN18 were associated with a radiocarbon date of 710 BP, near the end of the Initial Middle Missouri and Upper Republication (Hannus *et al.* 2003).

These results indicate four things. First, the Badlands area was used extensively during the Late Prehistoric period. Second, many if not most Late Prehistoric sites in the area contain ceramics of various types. This suggests movement of people or technology from the Middle Missouri culture area westward along the White River. Third, some archaeological material in the Badlands can be confidently affiliated with Plains Village Tradition complexes from the Missouri River and from Nebraska. Fourth, the Badlands and the area east of the Black Hills appear to have been used by a variety of groups, with homelands to the east, west, and south of the area, throughout the Late Prehistoric period.

**Protohistoric.** Besides the Post-Contact Coalescent sites discussed above, several other Badlands sites contained small amounts of Euroamerican trade goods. Site 39PN32 had an iron projectile point (D. Taylor 1961). At 39SH310, seed beads were found along with chipping debris, fire-cracked rock, and charcoal (A. Johnson 1987). Both 39PN561 and 39PN616 were multiple component sites with glass beads in the uppermost level (Sundstrom and Malone 1982; Rood *et al.* 1984). Excavation of 39PN616 unearthed large amounts of fire-cracked rock and a hearth, along with some bone, grinding stone fragments, and chipped stone artifacts. Apart from the bead, no

diagnostic items were found. A hearth was dated at 990 BP, within the Late Prehistoric period and much too early for the glass bead. Although this site clearly represents more than one use, the various components lacked vertical separation, and, thus, few conclusions could be drawn. A gunflint at 39SH202 points to a Protohistoric age for one component of the site.

**Historic.** The first non-Indian expedition into the White River Badlands Region occurred in 1823 when the Jedediah Smith party passed through the Badlands, camping along the White River. Two early exploration parties to cross the region were those of Dr. John Evans in 1849 and Lieutenant G. K. Warren in 1855.

Most historic sites in this region are typical of western South Dakota. Sites are associated with corporate ranching, the early reservation period, homesteading, and family ranches. In addition, this area contains the Wounded Knee National Historic Landmark and other sites important in the history of Indian-white conflict. Early churches and missions dot the landscape of the Pine Ridge Indian Reservation. Historic camps include Lip's Camp (39JK84), the Hollow Horn Bear Camp (39TD32), and the Stronghold Camp used during the Ghost Dance scare (39SH38).

**Summary.** Sites from the Middle Archaic and earlier are rare in the Badlands because most sediments of that age have eroded away (Kuehn 1997). The area was occupied by Clovis and Folsom complex hunters during the early Paleoindian period. With only one excavated Paleoindian site, it is impossible to gain a complete picture of their life-ways. The archaeological record of the Early and Middle Archaic periods is similarly incomplete for this region, supplying few details of how people lived. During the Late Archaic, hunting and foraging groups used the area, gathering local tool-stone and eating a variety of small and large animals and local plant foods. They rendered fat from bison bone, probably to use in making pemmican—a product that could ensure a winter food supply and permit the groups greater mobility rather than requiring them to stay near the bison herds. By the end of the Late Archaic period, Woodland influences appeared from the east in the form of ceramics. During the subsequent Plains Village and Late Prehistoric period, the area appears to have been used by Initial Middle Missouri and Extended Coalescent Tradition groups either expanding into the region west of the Missouri or using the area seasonally for resource gathering. At the same time, localized groups continuing the old bison hunting and foraging pattern also used the area. Central Plains Tradition villagers also made limited use of the area, as evidenced by small amounts of their typical pottery.

During the Protohistoric period, Lakota groups came to dominate the area. Eventually, it would be reserved for their use under a series of treaties and agreements, and much of the region is today within the bounds of the Rosebud and Pine Ridge Indian Reservations. The history of this region from fur trade days through the present is a series of dramatic events and radical transformations, from the development of the Plains Indian equestrian culture to the ill-fated attempts at turning former horse warriors into farmers, from the prosperity of the fur trade to the material poverty of the reservation period, and from the rise of the militarily undefeated Lakota alliance to the tragic events of Wounded Knee.

## **Sites by Period**

*Paleoindian:* 39FA67, 39JK4?, 39JK5?, 39JK195 (Agate Basin or Hell Gap), 39PN3?, 39PN5, 39PN751 (Agate Basin), 39PN894?, 39SH15, 39SH33 (Clovis), 39SH37, 39SH80 (Parallel

Oblique), 39SH85 (Alberta), 39SH100, 39SH101 (Folsom), 39SH207, 39SH129 (Agate Basin), 39SH207

*Early Archaic:* 39JK100, 39PN5, 39SH100, 39SH207

*Middle Archaic:* 39JK62 (Hanna), 39JK63 (Hanna, Yonkee), 39JK220 (Hanna), 39PN4 (Oxbow, McKean), 39PN435, 39PN538, 39PN561 (McKean), 39PN742 (McKean), 39PN743, 39PN744 (McKean), 39PN750 (McKean), 39PN752 (McKean), 39PN755 (McKean), 39PN943, 39PN974, 39PN1544 (McKean), 39PN1747 (Oxbow), 39SH1, 39SH36 (McKean), 39SH37, 39SH81 (Hanna), 39SH89 (Hanna), 39SH100, 39SH207, 39TD37

*Late Archaic/Plains Woodland:* 39BT2, 39BT10 (Besant), 39BT18 (Besant), 39FA1069 (Pelican Lake), 39JK5?, 39JK35 (Besant), 39JK39 (Pelican Lake), 39JK40 (Besant), 39JK62 (Besant), 39JK63 (Pelican Lake, Besant, Plains Woodland), 39JK68, 39JK70 (Pelican Lake), 39JK82 (Pelican Lake), 39JK118, 39JK171 (Pelican Lake, Besant), 39JK192 (Pelican Lake), 39JK207, 39JK214, 39PN4 (Pelican Lake), 39PN9 (Pelican Lake, Plains Woodland?), 39PN29 (Plains Woodland), 39PN53, 39PN101 (Plains Woodland/Sonota), 39PN102, 39PN517, 39PN529, 39PN532, 39PN535 (Besant), 39PN607 (Besant), 39PN744 (Pelican Lake), 39PN748 (Besant), 39PN753 (Pelican Lake), 39PN754 (Besant), 39PN756, 39PN895 (Besant), 39PN943 (Pelican Lake), 39PN968, 39PN969, 39PN976, 39PN1034, 39PN1135 (Plains Woodland), 39PN1144, 39PN1147, 39PN1160 (Pelican Lake), 39PN1174 (Pelican Lake, Besant), 39PN1182, 39PN1183, 39PN1536, 39PN1537, 39PN2529, 39SH5, 39SH36, 39SH37 (Besant), 39SH48 (Pelican Lake), 39SH52, 39SH57 (Pelican Lake, Plains Woodland), 39SH58 (Pelican Lake), 39SH59, 39SH62 (Plains Woodland), 39SH63, 39SH67, 39SH68 (Pelican Lake), 39SH69 (Plains Woodland), 39SH71, 39SH75 (Besant), 39SH80 (Besant), 39SH81 (Pelican Lake), 39SH96 (Besant), 39SH97 (Pelican Lake), 39SH99 (Pelican Lake), 39SH124, 39SH137 (Plains Woodland), 39SH175, 39SH183, 39SH195 (Pelican Lake, Plains Woodland), 39SH212, 39SH229 (Besant), 39SH240, 39SH266, 39SH281 (Pelican Lake?), 39SH314 (Besant), 39SH315 (Besant), 39SH316 (Pelican Lake), 39TD69, 39TD86 (Woodland)

*Unspecified Archaic:* 39PN5, 39PN538, 39PN968

*Late Prehistoric:* 39BT8, 39FA64, 39JK4 (Late Plains Woodland), 39JK36, 39JK59, 39JK63 (Avonlea or Prairie Side-Notched), 39JK64, 39JK68 (Late Plains Woodland), 39JK71 (Prairie Side-Notched), 39JK82, 39JK99 (Prairie Side-Notched), 39JK111, 39JK172, 39JK192 (Avonlea?), 39JK197, 39JK221, 39JK229 (Plains Side-Notched), 39MT46, 39PN15, 39PN18, 39PN28, 39PN53, 39PN56, 39PN67 (Avonlea?), 39PN102, 39PN331, 39PN561, 39PN607, 39PN616, 39PN809, 39PN937, 39PN943, 39PN966, 39PN972 (Plains Side-Notched), 39PN1161, 39PN1175 (Avonlea), 39PN1871, 39PN1874, 39SH36, 39SH37, 39SH57 (Plains Woodland), 39SH59 (Avonlea?), 39SH62 (Avonlea), 39SH63, 39SH62 (Avonlea), 39SH63, 39SH66 (Avonlea), 39SH70, 39SH71, 39SH72 (Avonlea), 39SH84 (Plains Side-Notched), 39SH90, 39SH93, 39SH133 (Late Plains Woodland), 39SH136, 39SH137, 39SH172, 39SH187, 39SH241, 39SH261, 39SH263, 39SH266, 39SH267, 39SH268, 39SH314, 39TD27, 39TD92, 39TD95

*Plains Village:* 39JK2 (Initial Middle Missouri, Extended or Post-Contact Coalescent), 39JK3, (Post-Contact Coalescent), 39JK4 (Initial Middle Missouri, Extended or Post-Contact Coalescent, Central Plains Tradition), 39JK6 (Initial Middle Missouri), 39JK7, 39JK8, 39JK9, 39JK10,

39JK101 (Extended Coalescent), 39PN9 (Initial and Terminal Middle Missouri, Extended Coalescent, Central Plains), 39PN10 (Extended and Post-Contact Coalescent), 39PN11 (Initial Middle Missouri, Extended or Post-Contact Coalescent), 39PN12 (Extended Middle Missouri), 39PN13, 39PN18 (Initial Middle Missouri or Upper Republican), 39PN22, 39PN28, 39PN30, 39PN32 (Extended or Post-Contact Coalescent), 39PN54 (Dismal River or Extended Coalescent), 39PN561 (Initial Middle Missouri), 39PN590 (Extended Coalescent), 39PN596, 39PN943, 39PN966 (Initial Middle Missouri), 39PN972, 39PN1135 (Initial Middle Missouri?), 39PN1161 (Initial Middle Missouri), 39SH14, 39SH27, 39SH37 (Coalescent), 39SH39 (Middle Missouri), 39SH60 (Post-Contact Coalescent), 39SH62, 39SH67/39SH68/39SH69 (Initial Middle Missouri, Dismal River), 39SH72, 39SH80 (Extended Coalescent), 39SH90, 39TD87

*Unspecified Woodland or Plains Village:* 39JK39, 39JK59, 39JK70, 39PN837, 39SH80, 39SH81, 39SH82

*Protohistoric:* 39PN561, 39PN616, 39PN1144, 39SH130, 39SH147, 39SH179, 39SH181, 39SH182, 39SH186, 39SH202, 39SH261, 39SH309?, 39SH344, 39TD93?

*Historic Artifact Scatter:* 39FA294, 39FA1383, 39FA1384, 39FA1478, 39FA1596, 39FA1597, 39JK113, 39JK117, 39JK204, 39JK222, 39JK256, 39JK263, 39JN28, 39JN29, 39PN615, 39PN829, 39PN1142, 39PN1146, 39PN1161, 39PN1579, 39PN1747, 39PN1946, 39PN1950, 39PN2525, 39SH153, 39SH202, 39SH213, 39SH248, 39SH265, 39SH302, 39SH309, 39SH310, 39SH316, 39SH339, 39TD61, 39TD67, 39TD70, 39TD89, 39TD91, 39TD94, 39TD96

*Farmstead:* 39FA1162, 39FA1709, 39JK105, 39JK149, 39JK154, 39JK156, 39JK161, 39JK164, 39JK173, 39JK175, 39JK177, 39JK242, 39JK249, 39JK255, 39MT37, 39MT45, 39MT48, 39MT51, 39PN201, 39PN609, 39PN624, 39PN866, 39PN918, 39PN921, 39PN923, 39PN924, 39PN926, 39PN928, 39PN932, 39PN935, 39PN936, 39PN773, 39PN1571, 39PN1922, 39PN1947, 39PN2523, 39PN2524, 39PN2532, 39PN2534, 39SH29, 39SH32, 39SH37, 39SH131, 39SH145, 39SH148, 39SH161 (allotment), 39SH162 (allotment), 39SH167 (allotment), 39SH197, 39SH199, 39SH200, 39SH211, 39SH231, 39SH236, 39SH237, 39SH238, 39SH239, 39SH247, 39SH270, 39SH304, 39SH343, 39SH362, 39SH304, 39TD66, 39TD72, 39TD74, 39TD75, 39TD84, 39TD85

*Foundation or Depression:* 39BT26, 39BT27, 39BT29, 39BT30, 39BT33, 39BT34, 39FA697, 39FA1068, 39FA1071, 39FA1072, 39FA1073, 39FA1163, 39FA1243, 39FA1296, 39FA1334, 39JK95, 39JK97, 39JK112, 39JK119, 39JK125, 39JK126, 39JK129, 39JK136, 39JK139, 39JK186, 39JK227, 39JK237, 39JK250, 39JK264, 39JK284, 39JN30, 39MT31, 39MT32, 39MT34, 39MT38, 39MT39, 39PN489, 39PN592, 39PN808, 39PN810, 39PN821, 39PN824, 39PN826, 39PN830, 39PN831, 39PN838, 39PN843, 39PN863, 39PN881, 39PN888, 39PN934, 39PN1143, 39PN1150, 39PN1193, 39PN1194, 39PN1327, 39PN1538, 39PN1552, 39PN1561, 39PN1775, 39PN1784, 39PN1896, 39SH30, 39SH31, 39SH144, 39SH177, 39SH186, 39SH188, 39SH324, 39SH332, 39SH333, 39SH341, 39SH342, 39SH360, 39TD29, 39TD31, 39TD34, 39TD41, 39TD45, 39TD49, 39TD58, 39TD90

*Dump:* 39BT26, 39JK97, 39JK109, 39JK130, 39JK152, 39JK155, 39JK212, 39PN562, 39PN583, 39PN601, 39PN603, 39PN626, 39PN630, 39PN633, 39PN887, 39PN894, 39PN933, 39PN964, 39PN976, 39PN1748, 39PN1775, 39SH155, 39SH159

*Other Historic:* 39BT25 (townsite), 39BT28 (grain elevator foundation), 39BT34 (road), 39FA696 (municipal dump), 39JK31 (railroad bridge), 39JK32 (road), 39JK51 (burial), 39JK58 (Lip's Camp cemetery), 39JK61 (corral), 39JK84 (Lip's Camp), 39JK124 (road bridge), 39JK180 (school?), 39JK189 (dump), 39JK251 (dance hall), 39JK2007 (railroad), 39JK2037 (road), 39MT18, 39MT40 (burial), 39MT47 (school), 39PN2 (Big Foot's Camp?), 39PN594 (school), 39PN603 (road bridge), 39PN605 (corral), 39PN837 (cabin), 39PN844 (tin cans), 39PN886 (burial), 39PN890 (bridge), 39PN894 (reported burial), 39PN930 (well), 39PN1549 (Civilian Conservation Corps camp), 39PN1561 (Civilian Conservation Corps camp), 39PN1952 (whistle stop), 39PN1966 (trestle), 39PN2007 (railroad), 39SH38 (the Stronghold, associated with Wounded Knee massacre), 39SH154 (Calico Community Building), 39SH228 (church), 39SH233 (school), 39SH249 (bridge), 39SH251 (historic marker), 39SH253 (bison bone), 39SH335 (well), 39SH337 (allotment boundary marker), 39SH345 (monument), 39SH2032 (irrigation), 39SH2094 (road), 39SH2114 (road), 39TD33 (cemetery), 39TD44 (burial), 39TD59 (bridge), 39TD62 (church), 39TD63 (church), 39TD65 (school), 39TD68 (camp), 39TD97 (burial), 39TD102 (ditch).

## **Prehistoric and Historic Themes**

*Sacred Sites, Traditional-Use Sites, and Burials.* Apart from historic graves and cemeteries, only three human burials have been recorded in the White River Badlands region. These were accidentally exposed through erosion and were reburied according to the wishes of local Indian tribes. One of these dated to the Late Prehistoric period; the rest are of unknown age. Historic cemeteries are those of *tiyospaye* (extended Lakota family groups). Many, if not most, of these places are still visited by family members today. Historic graves include both Indian and non-Indian individuals. These have been recorded as necessary to avoid their disturbance by construction or development activities.

The Badlands as a whole, and many places within it, are referred to in sacred stories of northern Plains Indians. For the Lakota, it is recognized as a place linked to the Underground world, and the fossils found there are believed to represent the bones of the creatures that dwell below the earth's surface and under the water (Erdoes and Ortiz 237; D. Smith 1949:310; Walker 1991:108). The area is also associated with the powers of the Above world, including the Thunders (E. Clark 1966:309–310; Dorsey 1894:422; D. Smith 1949:310). The Kiowa mythology links this area to the story of the Great Bear (J. Harrington 1939:168; Stone 1982).

Many other places in the region retain old names that refer to traditional uses or historic events. These include Bear in the Lodge Creek, Eagle Nest Butte, Big Foot Creek, Pass Creek or Travel Creek (also known as Deep Creek), Cheyenne Creek, Blackpipe Creek, Big Buffalo Creek, Corn Creek, Flint Butte, Bear Creek, Lost Dog Creek, Wolf Creek, and Wounded Knee Creek? (Bordeaux 1929:186; Ehrensperger 1941; Jensen 2005:195; Buechel 1970:228; Herman n.d.).

Many areas of the Badlands are used for religious activities such as the vision quest. These include many prominent buttes, such as Buzzard Butte, Snake Butte, Eagle Nest Butte, and Saddle Butte (Powers 1982:11; Hassrick 1964:273). Within Badlands National Park, portions of the South Unit, as well as Sheep Mountain, are frequently used for spiritual activities (Hannus *et al.* 2003; John Milner Associates 2005). It is important to remember, however, that such activities can take place anywhere that provides an atmosphere of seclusion; thus all areas should be considered

potential sacred sites (cf. John Milner Associates 2005). Places associated with the Wounded Knee Massacre, such as the Stronghold and the Big Foot Camp, are also considered sacred to many Lakota people. For more information on Lakota cultural landscapes in the Badlands area, the reader is referred to the Tribal Historic Preservation Office of the Oglala Sioux and Rosebud Sioux Tribes.

**Stone Circles.** Only ten stone circle sites are reported from the region: 39FA1072, 39PN925, 39SH34, 39SH35, 39SH40, 39SH262, 39SH263, 39SH264, 39SH266 and 39SH267.. These sites have not been excavated.

**Bison Jumps and Other Animal Kill Sites.** Site 39SH76 is a bone bed associated with a presumed bison jump (Hannus *et al.* 1989:178–180), while site 39JK3 is recorded as a possible bison kill site (Archaeological Research Center site files). The Pinnacles site, 39PN9, is identified as a camp and a possible bison jump locality (Beaubien 1953:1–2).

**Cairns.** Site 39TD39 is described as a rock cairn which may be natural or associated with nearby trails (Haberman 1985c:38). Site 39TD35, a rock cairn located on a high knoll, is judged to be conceivably of historic Dakota cultural affiliation (Haberman 1985c:33). At 39SH305 a sandstone cairn was noted on a hill that may have been used for scaffold burials or interments. A quarry site, 39SH91, contained a possible cairn as well as quarry features and stone mauls.

**Quarries.** An extensive quarry area, the West Horse Creek quarry, 39SH37, appears to have been in use throughout the Prehistoric era (Nowak *et al.* 1984; Nowak and Hannus 1985). Another quarry source for West Horse Creek chert is site 39SH81. Middle and Late Archaic projectile points were found there (Lueck and Butterbrodt 1984:17). At site 39PN599 exposed Chadron cobbles were quarried for tool-making (Rood *et al.* 1984:106–108). Many of the sites located during the Highway 44 project were quarries (Sundstrom and Malone 1982; Rood *et al.* 1984). These sites are located on gravel terraces where Chadron chert cobbles are exposed on the surface.

**Quarry Sites:** 39BT13, 39FA66, 39FA67, 39FA545, 39FA1311, 39FA1312, 39JK69, 39JK128, 39JK131, 39JK140, 39JK174, 39JK194, 39JK195, 39JK273, 39PN70, 39PN555, 39PN559, 39PN560, 39PN746, 39PN747, 39PN867, 39PN869, 39PN870, 39PN871, 39PN872, 39PN873, 39PN878, 39PN879, 39PN880, 39PN884, 39PN885, 39PN891, 39PN892, 39PN893, 39PN902, 39PN903, 39PN905, 39PN919, 39PN920, 39PN944, 39PN948, 39PN1144, 39PN1709, 39PN1713, 39PN1719, 39PN1721, 39PN1724, 39PN1725, 39PN1726, 39PN1877, 39PN1878, 39PN1879, 39SH37, 39SH51, 39SH53, 39SH78, 39SH81, 39SH83, 39SH91, 39SH107

**Early Reservation Period.** Lakota sites from the early reservation period include Lip's Camp (39JK84) and cemetery (39JK58). Lip's Camp was occupied by the Wazhazha band of the Upper Brule Sioux from 1880 to 1904 (Lueck and Butterbrodt 1984:54). Site 39PN2 is reported to be the campsite of Big Foot's band just prior to the slaughter at Wounded Knee in December 1890 (Beaubien 1953:3). A place referred to as "The Stronghold," where Lakota Ghost Dancers sought refuge during the Ghost Dance scare, is recorded as 39SH38. High Hawk's Camp is recorded as 39TD68. Cemetery Hill (39MT13) is reported to contain graves of members of the Foolish Heart family (Rood 1984:9–10). The old Calico Community building is recorded as 39SH154. Early reservation era farms and homes on allotments include 39JK255 (Long Soldier), 39SH148, 39SH199, 39SH200, 39SH211 (Swift), 39SH247, 39SH270 (White Bear Claw), 39SH343 (American Bear), 39SH377, 39SH362 (He Crow), and 39SH364 (Red Owl). The ruins of some

of the homesteads taken by non-Indians on former reservation lands include 39FA1709 (Klein), 39JK105 (Carlson). Towns that served the early homesteaders were 39JK112 (Weta), 39JK173, 39JK175 (Doss), 39JK177 (Salisbury), 39PN609, and 39SH131 (Bell).

Excavations at the Hollow Horn Bear Site, 39TD32, provide details of the material culture of an early reservation homestead (Haberman 1992). The site comprised the ruins of a log house, a dugout root cellar, a trash midden, and a feature that probably represents a privy. This site was occupied from about 1890 to 1915, probably by members of the Pocupine family. The site appears to be a homestead allotment from the period in which Lakota families were encouraged to start family farms within the bounds of Rosebud Reservation. The experiment in farming ultimately failed, primarily because the area gets too little precipitation. The Hollow Horn Bear Site materials indicate that Lakotas of the time depended on imported materials such as window glass and nails, while retaining many items acquired and used in traditional ways. The latter include catlinite and catlinite pipe fragments, tinkler cones, and dentalium shell. Factory items reflect both early contact-era tradition (beads, sequins, military buttons, a metal arrow point, and cartridge cases) and somewhat later items introduced specifically to assimilate individuals into mainstream society, such as farming implements, pens, and religious medals. Toys, including parts from cap guns and dolls, reflect the pre-contact and early contact-era tradition of providing children with miniatures of adult items. Ax parts, dish fragments, a paint can with red paint residue, and a brass kettle lid are simply modern equivalents of old items.

The site reflected a transitional food economy (Haberman 1992). Cattle and dog bones made up most of the bone, but a few pig bones were also present. Butchering was done according to traditional practice. Chokecherry and plum pits were abundant, indicating that these wild fruits continued to make up a substantial portion of the diet. The site also contained cans and bottles from factory-processed foods. Interestingly, the site contained no traps and very little bone from wild game. This probably reflects a lack of animals to hunt on the reservation, as opposed to a loss of interest in hunting, given the presence of cartridge cases at the site.

## **Archaeological Potential**

The White River Badlands region has considerable research potential for examining the entire prehistoric and historic past, particularly in regard to Paleoindian and Archaic occupations. Although the latter sites are often deeply buried, the unique erosional processes of the Badlands area frequently expose early components in isolated buttes, sod tables or deeply-cut drainages. In a sense, the Badlands are under constant test excavation through gullying and mass wasting. This makes archaeological deposits highly visible and highly susceptible to rapid loss through erosion. Due to depositional processes, cultural component separation is very good, thus providing an excellent source for developing radiometric temporal/cultural sequences. The development of multidisciplinary studies incorporating geomorphologists or soil scientists and land snail specialists would greatly benefit archaeological research in this region since many of the deeply-buried sites contain multiple archaeological components. The buried cultural strata contain microfaunal remains, such as land snails, that can provide critical environmental data. Research into tool-stone procurement (e.g., Ahler 1977; Nowak and Hannus 1981; Nowak *et al.* 1984) and bone tool technology (e.g., Hannus 1985, 1990a) could be expanded. Research into the protohistoric and historic periods can address historic Lakota adaptation to early reservation settlement, the identification and documentation of Lakota sacred sites, the development of early

transportation routes such as the Ft. Pierre to Ft. Laramie Trail, and homestead and ranching activities. Early explorations of the Badlands region by scientific and early trading and military expeditions could also be investigated.

## **Management Considerations**

Active erosion in the White River Badlands means that archaeological sites are both highly visible and highly vulnerable to natural destruction and looting. A few sites have been test excavated, but most have received only survey-level study. Badlands National Park has commissioned an overview of resources and management issues in the park (Hannus *et al.* 2003; John Milner Associates 2005).

## **Sites Listed in the National Register of Historic Places**

Only one archaeological site has been listed in this region, 39JK84, Lip's Camp. The site of the Wounded Knee massacre is also listed in the National Register; this has not been given an archaeological site number.

## **Region 9: Lower White**



*Figure 147. View of Lower White region landscape (ARC photo).*

## Setting

The Lower White Region encompasses the White River drainage from the Little White River east to approximately the Tripp-Lyman and Tripp-Gregory County lines. This area includes portions of Mellette, Todd, Lyman, and Tripp counties in south-central South Dakota. Physiographically, the area is situated within the Pierre Hills of the Missouri Plateau division of the Great Plains province (Rothrock 1943). The general topography of the area consists of rolling, grass-covered hills.

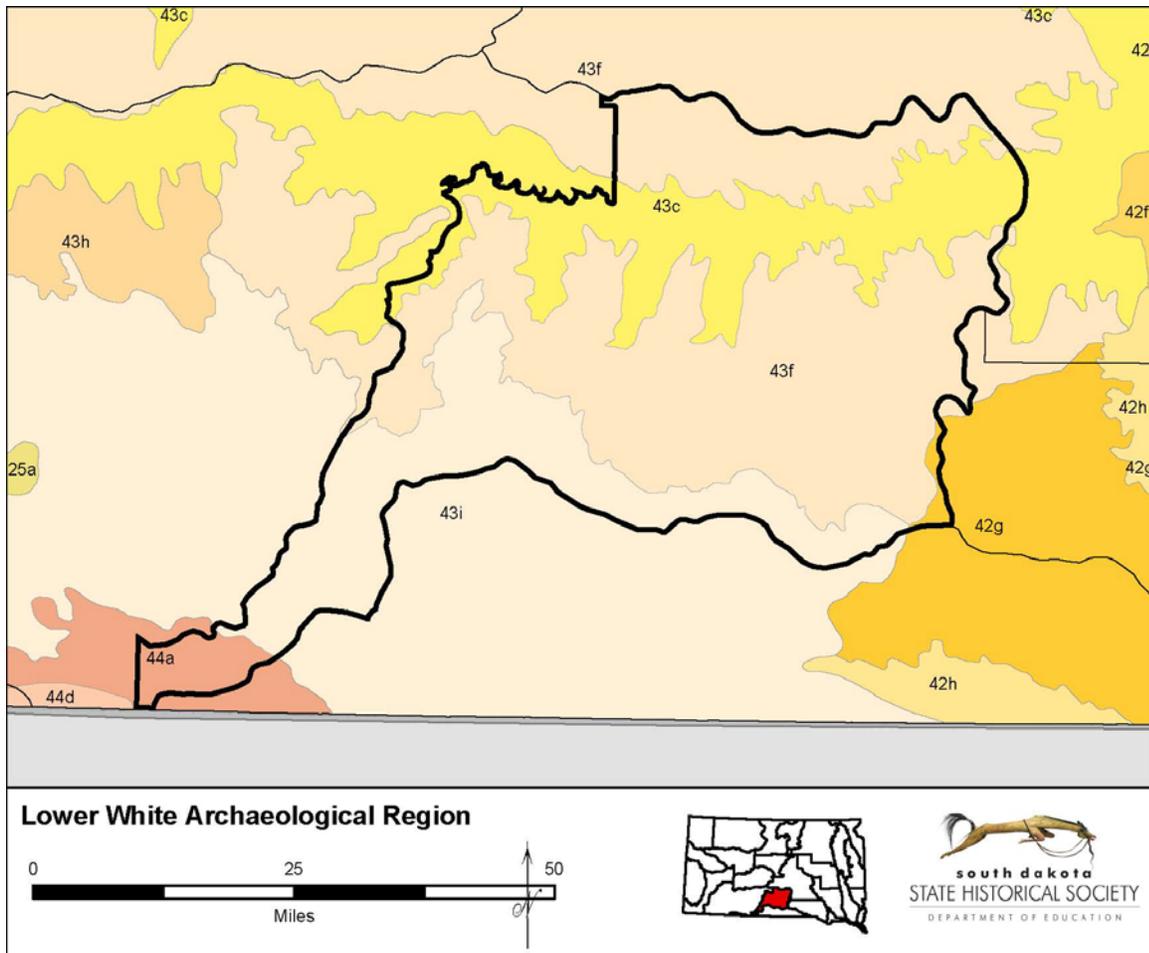


Figure 148. Ecoregions of the Lower White archaeological region.

43: Northwestern Great Plains

43c: River Breaks, unglaciated, highly dissected hills and uplands bordering major rivers and associated alluvial plains.

43f: Subhumid Pierre Shale Plains, unglaciated, undulating plain; steep-sided, incised stream channels.

43i: Keya Paha Tablelands, unglaciated, level to rolling sandy plains; dissected near streams.

44: Nebraska Sand Hills.

44a: Nebraska Sand Hills, sand sheets and extensive fields of barchanoid, parabolic, and domal sand dunes; high water table, interdune wetlands.

## Previous Archaeological Investigations

The archaeology of the Lower White region is known only from contract projects, most of very limited extent. These include surveys done for bridge replacements, stock dams, communication towers, range improvement projects, gravel pits, building sites on the Rosebud Indian Reservation, waterlines, and small road projects. Some of the larger projects were done for highway realignments (Haberman 1985a, 1986b; Donohue 2000, 2001; Byrne 2000; Watts and Long 2000), regional water projects (Buechler 1992, 1998b, 1999b; Kogel and Lueck 2002), a buried cable line (Harken and Miller 2004), and a timber sale (Ranney 1986). Excavated sites include 39MT30 (Donohue 2000) and 39TP30 (Donohue 2001).

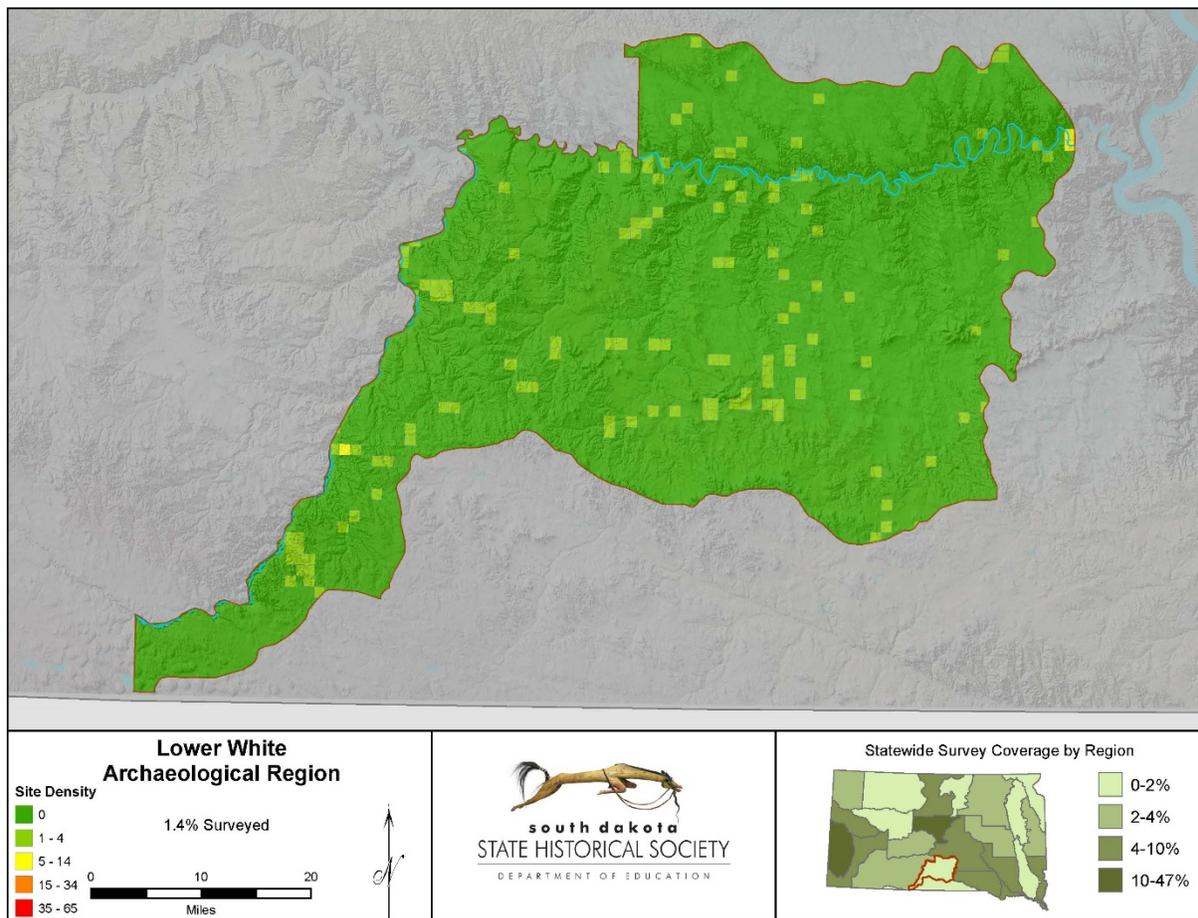


Figure 149. Density of known archaeological sites, Lower White archaeological region.

## Historic Contexts

Very little is known of the pre-contact history of the Lower White region. Because the region so far has no recorded sites from the Paleoindian, Early Archaic, or Middle Archaic periods, nothing can be said of its early human history. Site 39TP30 had very sparse cultural layers at 30–50 and 100–130 cm below surface (Donohue 2001), as well as a Plains Village component in the

first 30 cm below surface. The middle component is of unspecified Archaic age, but the age of the lowest component is not known. Regarding the Late Archaic and Woodland period, we have only one sparse artifact scatter that included a Late Archaic projectile point fragment and an isolated projectile point identified as Late Woodland. Two other sites had Late Prehistoric arrow points among small scatters of artifacts.

The Plains Village period seems to be better represented in the Lower White region. Three sites contain Extended Coalescent tradition pottery, suggesting either population expansion westward from the Missouri River during this time or temporary encampments of Middle Missouri groups traveling west for hunting or other resource-gathering. A deep, multiple component site, 39TP30, had a dense stratum assigned to the Extended Coalescent tradition (Donohue 2001). This cultural stratum contained 716 ceramic sherds, nine projectile points, two scrapers, 11 modified flakes, and a projectile point preform, as well as fire-cracked rock, animal bone, and chipping debris. An earth lodge village, the Erickson site (39LM113) is reported as an Extensive Extended Coalescent site (W.H. Over cited in Sigstad and Sigstad 1973), but it has not been excavated. Three other sites contained ceramics but not in sufficient amounts to suggest an age or cultural affiliation.

Historic sites in the region include homesteads (both Indian and non-Indian), rural schools, a townsite, and more uncommon types. The latter include early reservation-era community and council buildings, a general store, and a cannery established for use by members of the local Indian community.

## **Sites by Period**

*Paleoindian:* None

*Early Archaic:* None

*Middle Archaic:* None

*Late Archaic/Woodland:* 39TD40, 39TP24 (Late Woodland)

*Unspecified Archaic:* 39TP30

*Late Prehistoric:* 39MT15, 39MT16

*Plains Village:* 39LM113, 39LM308 (Extended Coalescent), 39LM373, 39MT301, 39TD4 (Extended Coalescent), 39TP30 (Extended Coalescent)

*Protohistoric:* 39MT52 (beads in an anthill)

*Historic farmsteads/homesteads:* 39LM493, 39MT19, 39MT21, 39TD7, 39TD8, 39TD17, 39TD71, 39TD76, 39TD77, 39TP31, 39TP34

*Other historic:* 39LM353 (possible school), 39LM374 (well and foundation), 39LM375 (school), 39LM391 (artifact scatter), 39LM440 (artifact scatter), 39MT20 (foundation), 39MT23 (two foundations), 39MT24 (foundation), 39MT26 (depression), 39MT41 (pumping station), 39MT42 (school), 39MT43 (Horse Creek Cannery), 39MT44 (Horse Creek community building),

39MT53 (foundation, dump), 39TD9 (graves and memorial marker), 39TD10 (council building and home), 39TD15 (depression), 39TD16 (burial), 39TD18 (depression), 39TD19 (well), 39TD20 (depression), 39TD21 (depression), 39TD46 (dump), 39TD47 (artifact scatter), 39TD48 (artifact scatter), 39TD81 (well), 39TD82 (foundation), 39TD83 (memorial marker), 39TD99–100 (store and house), 39TP21 (artifact scatter), 39TP22 (town of Carter), 39TP25 (school), 39TP33 (artifact scatter), 39TP44 (bottle)

## **Prehistoric and Historic Themes**

***Sacred Sites, Traditional-Use Sites, and Burials.*** This region contains a few historic graves and at least one prehistoric and one protohistoric burial of Native American individuals. These have been left in place with the exception of one that was accidentally washed out. That was returned to the Rosebud Sioux Tribe and reburied. Because much of this region has remained as Indian land, it contains many places of significance to native people. The reader is referred to the Rosebud Sioux Tribal Historic Preservation Office for more information on such places. The White River is called Smoking Earth River in Lakota, probably because of the white dust that arises from the soft claystone bedrock through which it flows (Bad Heart Bull 1967:290; Gilmore 1912:9; Robinson 1912:273; Warren 1875:193, 1922:89fn). The Cheyennes and Mandans called it by terms meaning white river (Grinnell 1906; Will and Spinden 1906:219). The south branch is called *opa owozjula* in Lakota, a term referring to a good place for planting crops (Gilmore 1912:9). According to Gilmore, Lakota people gathered wild rice from swampy places there (Gilmore 1912:9). This was also where Lakota groups had their winter camps (Gilmore 1912:14).

***Early Reservation History.*** Although none have been formally investigated, historic sites from this region reflect the basic themes of early reservation history. In sites such as community buildings and council houses one sees the continuity of old social organization patterns based on the *tiyospaye* (extended family group). In sites such as isolated farmsteads and the community cannery one sees the influence of government programs to promote farming-based subsistence on the reservation. Day schools reflect the Indian communities' desire to provide a modern education for their children without sending them away to residential schools.

## **Archaeological Potential**

Not enough archaeological or geomorphological data are available from the Lower White region to permit an accurate view of its potential for containing historically significant archaeological remains. Certainly this area will be important to understanding the expansion of village culture during the Extended Coalescent period, the influence of Central Plains Tradition cultures on the Middle Missouri and adjacent regions, and the early history of Indian reservations in the Great Plains.

## **Management Considerations**

Resource managers need basic information about site distribution and significance for the Lower White region. Every effort should be made to compile accurate location and environmental information about archaeological sites and traditional cultural properties so that resource managers can effectively protect significant sites for continued traditional use and, where appropriate, archaeological study. Much of the area is used for cattle ranching, which has a fairly low impact

on cultural resources. When other projects are proposed for the area, archaeologists and knowledgeable local elders should work together to ensure that historically significant places are identified and protected from damage.

### **Sites Listed in the National Register of Historic Places**

None.

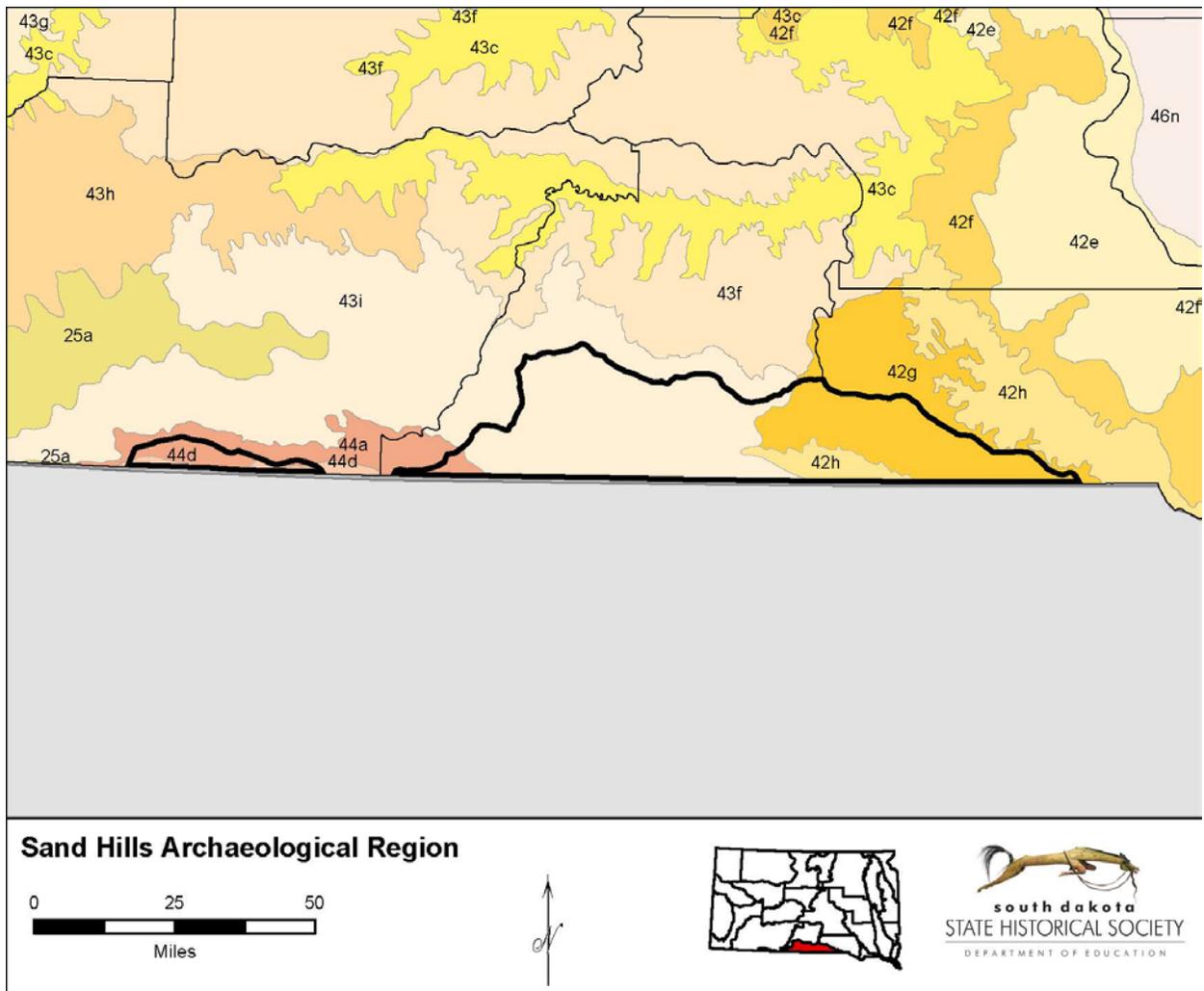
## **Region 10: Sandhills**

### **Setting**

The Sandhills Region encompasses portions of southern Bennett, Todd, Tripp, and Gregory counties. The area is characterized by rolling to gently rolling hills and sand dunes. It is the northernmost extension of the Nebraska Sandhills and is primarily drained by tributaries of the Niobrara River.



*Figure 150. Sand Hills Region landscape (L. Sundstrom photo).*



*Figure 151. Ecoregions of the Sand Hills archaeological region.*

*42: Northwestern Glaciated Plains*

*42h: Southern River Breaks, lightly glaciated dissected hills and canyons with slopes of high relief bordering major rivers and associated alluvial plains.*

*43: Northwestern Great Plains*

*43a: Missouri Plateau, unglaciated, moderately dissected level to rolling plains with isolated sandstone buttes.*

*44: Nebraska Sand Hills*

*44a: Nebraska Sand Hills, sand sheets and extensive fields of barchanoid, parabolic, and domal sand dunes; high water table, interdune wetlands.*

## Previous Archaeological Investigations

The Sand Hills region has seen very little archaeological work. A few small-scale linear surveys have been done for highway realignments, gravel quarries, phone cables, and water lines (Haberman 1982, 1985a; T. Chevance 1987; Nowak 1987; Fosha and Cumins 1990a; Buechler 1992; Shierts 1995; Lueck and Kogel 2002; Eschenbaum 2003; R. Williams 2007; Park 2007).

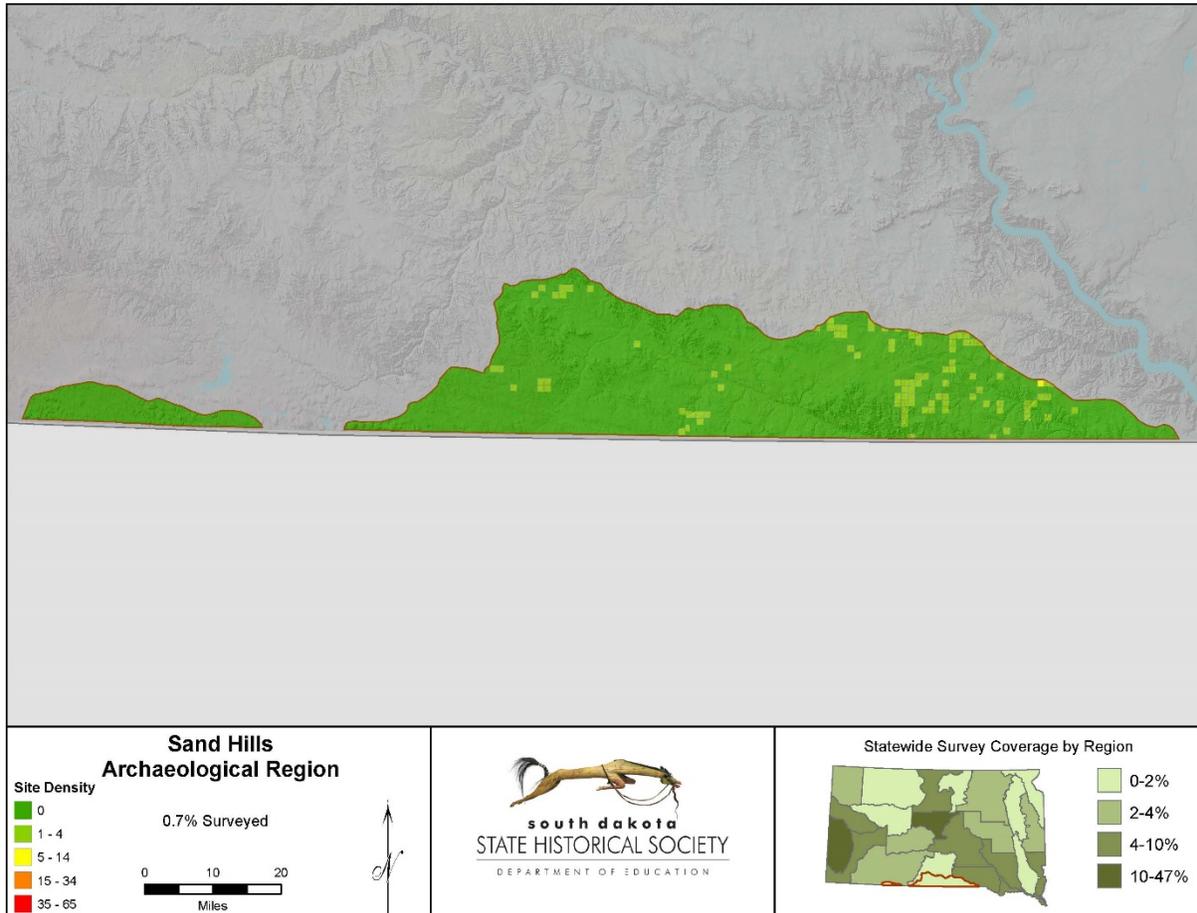


Figure 152. Density of known archaeological sites, Sand Hills archaeological region.

## Historic Contexts

Practically nothing is known of the pre-contact history of this region. Several purported Folsom complex sites were reported in the 1920s and 1930s. Local residents reported these to W.H. Over, who recorded them in his notes, but these sites have not been relocated, nor has any solid evidence of Paleoindian use of the area come to light. One of these also contained ceramics, so it apparently had a Woodland or Plains Village component. No other dated prehistoric sites are listed for the region. Prehistoric sites include two small Bijou Hills quartzite quarries, two surface scatters of flakes, cores, and bone fragments, two surface scatters with 3–8 flakes, and 6 surface scatters with only one flake or tool. Another surface scatter contained a few pieces of scoria and a scraper.

Another had a few flakes and one biface. A scatter of flakes, cores, and a scraper made up another site.

The historic period is better known archaeologically. It contains the usual preponderance of farmsteads, schools, and other homestead-related sites. More unusual are the site of a cannery (39GR77), a church and possible graveyard (39TD53), and a corral/chute complex (39TP50).

## Sites by Period

*Paleoindian.* 39GR30 (Folsom), 39GR31 (Folsom), 39TD1, 39TP1 (Folsom), 39TP2 (Folsom), 39TP3 (Folsom)

*Early, Middle and Late Archaic, Plains Woodland:* None

*Woodland or Plains Village:* 39TP3

*Late Prehistoric:* None

*Protohistoric:* None

*Historic Farmsteads and Foundations:* 39GR75, 39GR78, 39GR79, 39GR84, 39GR115, 39GR116, 39GR126, 39GR129, 39GR130, 39GR131, 39GR132, 39TD56, 39TP26, 39TP28, 39TP35, 39TP36, 39TP38, 39TP41, 39TP52

*Other Historic:* 39BT32 (dump), 39GR77 (cannery), 39GR83 (burial), 39GR91 (bridge abutment), 39GR117 (store), 39GR123 (artifact scatter), 39GR135 (school), 39GR137 (artifact scatter), 39GR2150 (road), 39TD53 (church and possible graves), 39TD98 (boundary marker), 39TP19 (cairn and milled lumber), 39TP27 (school), 39TP37 (state boundary marker), 39TP42 (artifact scatter), 39TP47 (windmill), 39TP48 (school), 39TP50 (depression, corral, cattle chute, machinery), 39TP51 (artifact scatter)

## Prehistoric and Historic Themes

*Sacred Sites, Traditional-Use Sites, and Burials.* Several graves are reported from this area. A landowner reported the presence of two or three unmarked graves on his property in Gregory County. The presence of burials has not been confirmed. The ruins of a church in Todd County may have three graves next to it; again, no attempt was made to confirm whether these are burials. Another site in Todd County consisted of a few human bones that eroded from a stock dam. These bones were remitted to the Cheyenne River Sioux Tribe for reburial.

Keyapaha River has retained its Lakota name meaning turtle butte river. The name of Turtle Hills or Keyapaha Butte refers to the butte's resemblance to that animal or because turtles lived there (Gilmore 1912:10). A Lakota story relates how a man sat down to rest on this hill and discovered that he was sitting on the back of a gigantic turtle (Ehrenperger 1941:13). The Omaha term for the river, *Weinazhi ke*, or *Hi-azi-ke*, translates to cedar ridge river (Fletcher and La Flesche 1911:92; Gilmore 1929:10), and the Skiri Pawnee name, *Ra kiz katit hibura*, translates to big black river (Hyde 1951:353). Minnechadusa Creek takes its name from the Lakota for swift moving

stream (Ehrensperger 1941:6). Bull Creek was so named because it lay along a migration path for bison herds and, thus, was an important hunting ground (Ehrensperger 1941:17).

The Keyapaha region was home at various times to Lakota, Ponca, Omaha, and Pawnee groups. The archaeological region includes part of the Rosebud Indian Reservation. Certainly the Brule Lakota and other Indian nations with ties to this area have retained traditions about its sacred places and special resource areas. For more information, the reader is referred to their Tribal Historic Preservation Officers or cultural offices.

## **Archaeological Potential**

The archaeological potential of the Sand Hills region is unknown. Too little research has been done to indicate whether historically significant prehistoric sites are present. This region should be uniquely suited for archaeological research into the historic transitions from the fur and hide trade to corporate cattle to the homestead era. Studies of the impact of allotting reservation lands to individual families might also be uniquely informed by the later archaeological record of the region.

## **Management Considerations**

At this point, cultural resource management should focus on identifying significant historic and traditional properties so that such places can be afforded appropriate study and protection. In addition to basic archaeological survey, resource managers should enlist the aid of local elders to learn more about important places within the landscape and how best to protect them for appropriate uses. At present no major changes in land use threaten the area.

## **Sites Listed in the National Register of Historic Places**

No sites are listed as of this writing.

## **Region 11: Grand-Moreau**

### **Setting**

The Grand-Moreau Archaeological Region encompasses the Missouri River valley from the North Dakota-South Dakota state line south to the southern border of Potter County on the east side of the river and a line extending west from there to the right bank of the river. On the west side of the Missouri River, the region includes portions of Corson and Dewey counties, as well as the portion of now-defunct Armstrong County that was annexed to Dewey County in 1951. On the east side of the river it includes portions of Campbell, Walworth, and Potter counties. It should be noted that this is not equivalent to Lehmer's (1971:29) Grand-Moreau archaeological region, which crosses into North Dakota.

The region is part of a large area of continental glacial till and glacial lake plains. It includes the terraces and breaks on both sides of the Missouri, as well as the mouths of the Grand and Moreau rivers entering from the west. It extends east to the western edge of the Missouri Coteau and west to the point at which the Grand and Moreau rivers discharge into the Missouri River

upstream of the Oahe Dam. The east side of the river is characterized by loess-mantled glacial till forming undulating plains, while the west side consists mostly of unglaciated plains. The till is underlain by Cretaceous marine shales. Vegetation is mixed grass prairie, with western wheatgrass, needleandthread, green needlegrass, blue grama, and little bluestem dominant and northern reedgrass, prairie cordgrass, big bluestem, and sedges occurring in wet areas. The climate is cold continental with warm summers and snowy winters. The portion of the area west of the Missouri River is drained by the Grand and Moreau rivers and their tributaries. East of the river, drainage is via minor tributaries of the Missouri River and via internal basins.



*Figure 153. Typical landscape of the Grand-Moreau region (ARC photo).*

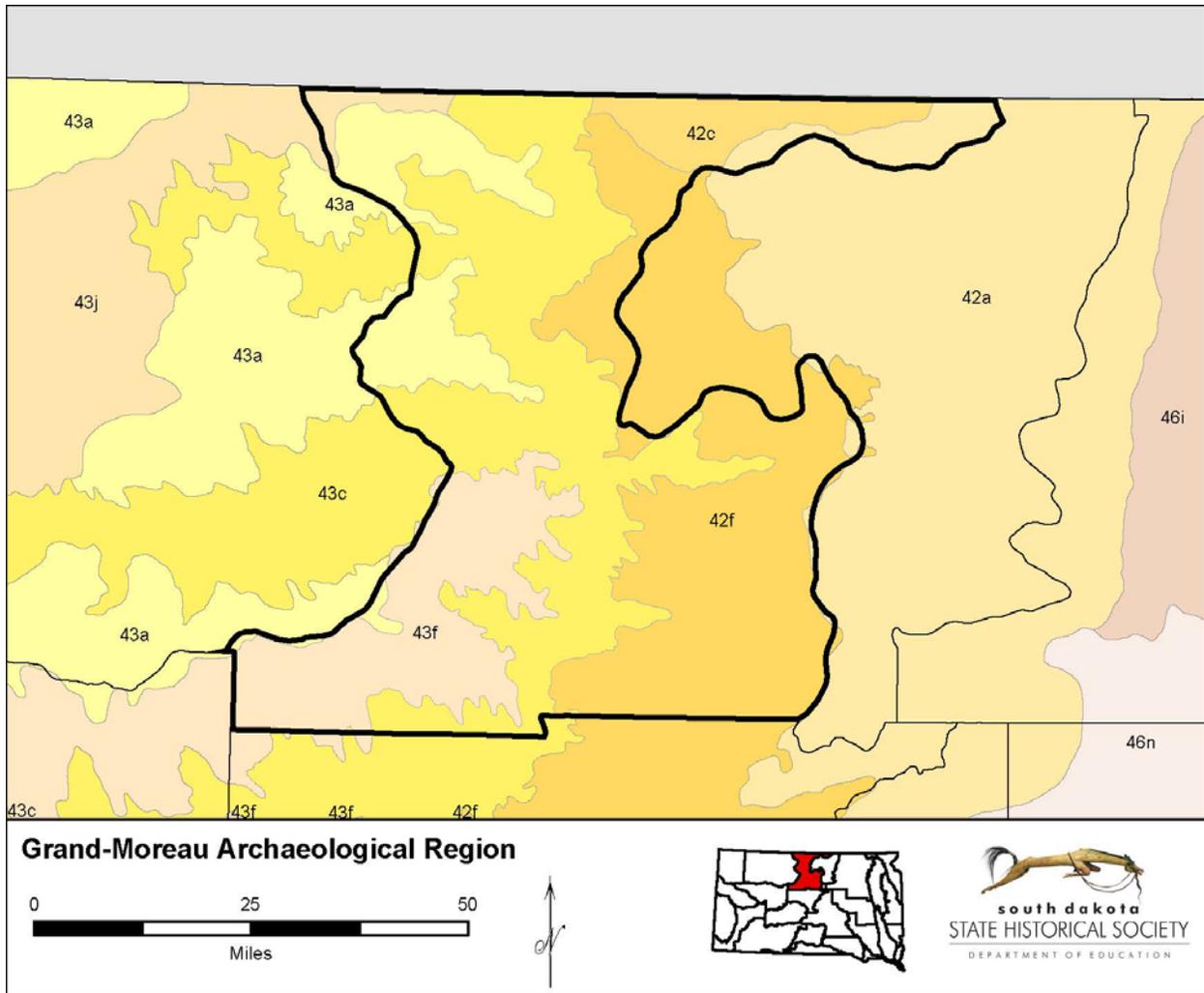


Figure 154. Ecoregions of the Grand-Moreau Archaeological Region.

42: Northwestern Glaciated Plains

42c: Missouri Coteau Slope, glaciated, level to gently rolling plain sloping to Missouri River.; sparse drainage pattern; few wetlands

42f: Southern Missouri Coteau Slope, glaciated, level to rolling uplands sloping westward to Missouri River; simple stream drainage.

43: Northwestern Great Plains

43a: Missouri Plateau, unglaciated moderately dissected level to rolling plains with isolated sandstone buttes.

43c: River Breaks, unglaciated, highly dissected hills and uplands bordering major rivers and associated alluvial plains.

43f: Subhumid Pierre Shale Plains, unglaciated, undulating plain; steep-sided, incised stream channels.

## Previous Archaeological Investigations

Formal archaeological investigations in the Grand-Moreau region began with W.H. Over of the University of South Dakota Museum recording sites along the Missouri River in the 1920s and 1930s (Sigstad and Sigstad 1973). In the late 1940s, the Missouri River valley became a major focus of intensive survey and excavation projects under the auspices of the Smithsonian Institution-River Basin Surveys program, with a few projects conducted by the University of South Dakota Museum (Barreis and Dallman 1961; Hoffman 1963, 1967; Hurt 1955, 1959, 1962, 1974; Hurt *et al.* 1959; Lehmer 1971; Meleen 1949; Neuman 1975; Wedel 1976; Wilmeth 1958). These research projects continued in the field until after the reservoirs reached full operating levels (e.g., Davis site, 1969; Walth Bay, 1970–1971; Helb, 1972–1973). Sites excavated during this effort include: Jones Village (39CA3), Anton Rygh (39CA4), , Bamble (39CA6), , Helb (39CA208), Demery (39CO1), Fort Manuel (39CO5), Leavenworth (39CO9), Davis (39CO14), Potts (39CO19), Red Horse Hawk (39CO34), Four Bear (39DW2) Swift Bird (39DW23), Calamity Village (39DW231), Molstad Village (39DW234), Grover Hand (39DW240), Stelzer (39DW242), Arpan (39DW252), , Rosa (39PO3), Hosterman (39PO71), Mobridge (39WW1), Larson (39WW2), Spiry-Elko (39WW3), Swan Creek (39WW7), Walth Bay (39WW203), and Payne (39WW302).

Analysis of data collected during the Smithsonian Institution-River Basin Surveys excavation projects is ongoing (Knudson *et al.* 1983; Kay 1993). Regarding the Helb Site, 39CA208, studies include overviews (Falk and Calabrese 1973; Kay 1995) and analyses of animal bone (Semken 1976; Ott 1998), charcoal (Zalucha 1985), fortifications (Kay 1995, 1996), shell artifacts (Lippincott 1997), chipped-stone artifacts (Galan 1996, Strait 1999), ground stone artifacts (O’Neal 2001), shellfish remains (Warren and Oliver 1998), ceramics (Rosebrough 1994, 1995), trade goods (Kendall 1997), clay (Cogswell *et al.* 1998, Dunn 1998; Kay *et al.* 2000), and human skeletons (Epley 1994). Another project analyzed radiocarbon data from the Stelzer site (Haberman and Travis 1995). Other studies focused on human skeletal remains from the Anton Rygh site (Ahler *et al.* 1988; Langdon *et al.* 1989; Nowak 1985; Owsley n.d.; Owsley and Jantz 1978; Stewart 1980; Willey 1990; Willey *et al.* 1987) and other aspects of the site, such as ceramics and lodge features (Fosha 1993; Knudson *et al.* 1983; Parmalee 1977; Wedel 1976). Data from the Bamble site, 39CA6, formed the basis for a thesis and was included in several other studies (Dallman 1958; Lippincott 1997; Porter 1962; Parmalee 1977; Warren and Oliver 1998). The Jones Village site, 39CA3, was included in the same group of studies, as well as an analysis of ceramics from the site (C. Johnson 1997, 1998a). Burials and trade goods from the Leavenworth site (39CO9), the Larson site (39WW2), and the Mobridge site (39WW1) informed several studies (Ahler *et al.* 1988; Bass 1964; Bass *et al.* 1971; Bradtmiller 1984; Gregg and Gregg 1987; Krause 1972; Langdon *et al.* 1993; Lueck 1984; Murdy 1994; Orser and Zimmerman 1984; Orser 1984; Owsley and Jantz 1978; Owsley and Orser 1982; Owsley *et al.* 1977; Palkovich 1981; Parmalee 1977; Ross *et al.* 1984; Owsley n.d., 1981; Stewart 1980; Sundstrom 1996c; Ubelaker and Wedel 1975; Toom 1979; Ubelaker and Wedel 1975; Willey 1990; Williams 1993). Two studies of human bone from sites within the region included data from 39CO34, the Red Horse Hawk site (Ahler *et al.* 1988; Nowak 1985). Studies of the Potts Village site (39CO19), Swift Bird Village (39DW233), and Molstad Village (39DW234) include overviews (Hoffman 1963, 1967; Stephenson 1971), besides some of the multisite studies already cited. Most of the studies on the Swan Creek site (39WW7), Four Bear site (39DW2), and Rosa site (39PO3) focused on human

skeletal remains (Langdon *et al.* 1989; Metternes and Jantz 1997; Owsley n.d.; Owsley *et al.* 1981; Willey *et al.* 1987).

The US Army Corps of Engineers and National Park Service sponsored several survey and excavation projects in the region since the 1970s (Ahler 1980; Ahler and Falk 1988; Ahler *et al.* 1977; Berg 1990, 1992; Clark *et al.* 2008; Falk *et al.* 1986; Haberman 1978; Hannus *et al.* 1983; Holst 2007; C. Johnson *et al.* 2007; Kay 1993; Lueck *et al.* 1991; Molyneaux *et al.* 1995; Pysarsky *et al.* 2001; Rothwell *et al.* 1997; Ruple 1991; Sander 1987; Sanders *et al.* 1988; Sanders *et al.* 1988; Tracy *et al.* 1992; Wandsnider *et al.* 1989; Winham and Lueck 1983, 1987; Winham *et al.* 1988).

Other projects in the Grand-Moreau archaeological region were done in advance of highway and bridge work (Haberman 1982; Rood 1983a, 1983b), large-scale irrigation projects on Indian lands (Winham 1985; Winham and Butterbrodt 1983), utility lines (Buechler 1998a, 2008), rural water projects (Buechler 1985b; Lueck *et al.* 1984), and an oil pipeline (Trader 2015).

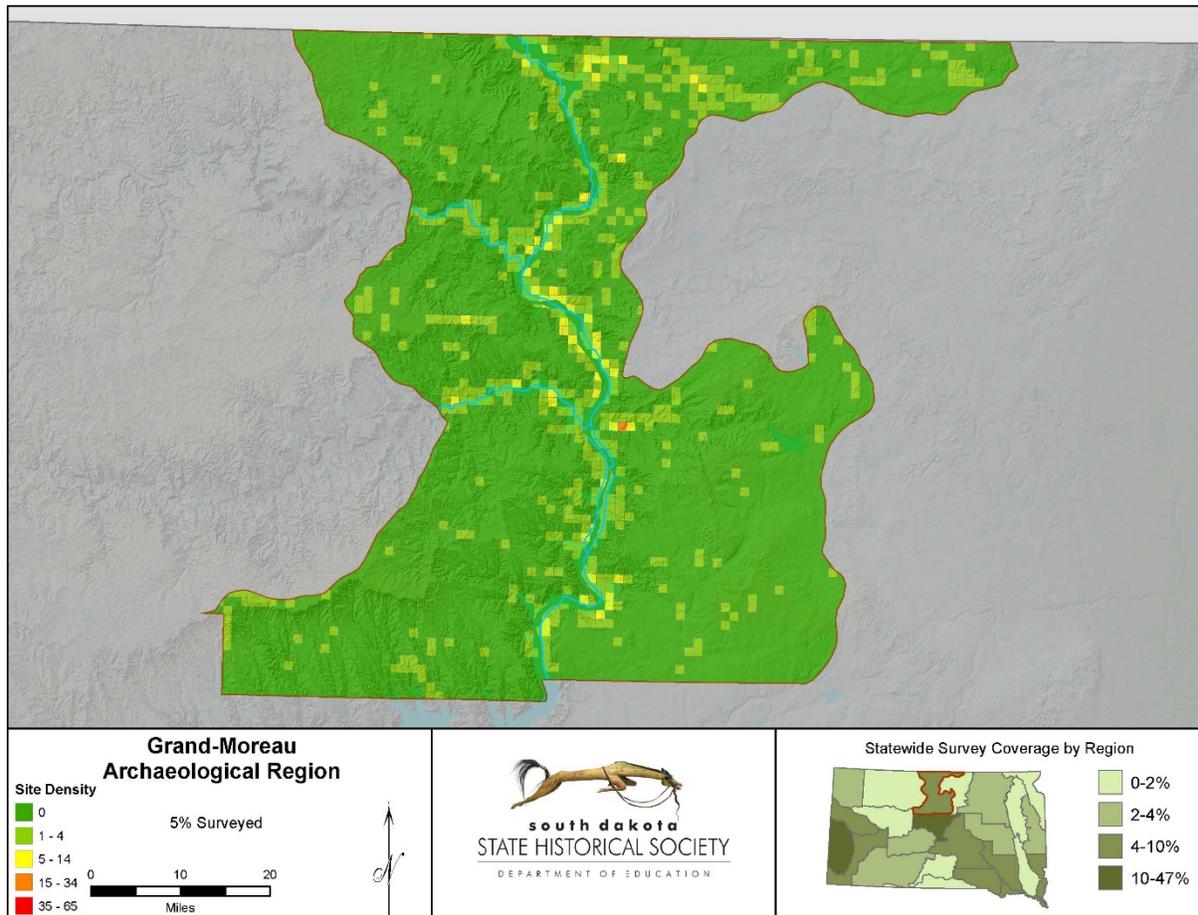


Figure 155 Density of known archaeological sites, Grand-Moreau archaeological region.

## Historic Contexts

**Paleoindian.** Paleoindian artifacts and sites have been found throughout the region. Finds include one Folsom point (Travis and Haberman 1983). Isolated finds of lanceolate projectile points have been recorded as sites 39CO113, 39DW118, and 39DW148 (Lueck *et al.* 1991; Sanders *et al.* 1988). An artifact scatter on an apparently deflated ridgetop overlooking the Missouri River (39DW391) contained an Agate Basin point, a drill, a core, 16 flakes and some fire-cracked rock (Espinoza 2010).

Five intact subsurface Paleoindian sites have been found in paleosols exposed in cut banks in this region. Unfortunately, two of those were destroyed and two others have been damaged by wave action from Lake Oahe. These are complex stratified sites with multiple components ranging in age from Paleoindian to Historic. The Travis II site (39WW15) contained a very productive buried Paleoindian component overlain by sparser Early Archaic, Middle Archaic, Late Archaic or Woodland, and Plains Village components. As the site was rapidly eroding from wave action, local resident Marion Travis visited frequently to gather up the artifacts that had eroded out and were lying on the beach. This resulted in the recovery of 56 Agate Basin-like projectile points and five Cody Complex points, as well as later points and pottery sherds from a different portion of the site. This indicates the presence of two Paleoindian complexes representing two different time spans. The density of artifacts in this level appears to have resulted from an episode of surface deflation via wind erosion (Toom 1994). The site's function is unclear: it lacks the variety of artifacts expected of a base-camp and the large amount of animal bone expected at a kill site. A small excavation at the site revealed a series of buried soils in an alluvial terrace. With most of the artifacts found out of place, little can be concluded except that this site—and the region—contained a rich buried deposit with the potential to yield crucial information about past climates and lifeways (Toom 1994).

Site 39WW53 similarly contained Paleoindian materials exposed in the side of a river terrace, as shoreline erosion ate away at it. In this case, three Cody Complex projectile points were found in a filled arroyo along with a bipolar core, two flakes, and some animal bone fragments. At the Mud Flat site, 39WW49, a Goshen or Plainview projectile point was among artifacts found on the beach below an eroding bank of Lake Oahe (Berg 1991). The Walth Bay site, 39WW203, was a stratified deposit exposed in the bank of an alluvial terrace. It contained two late Paleoindian Frederick Complex projectile points, as well as Middle and Late Archaic points, with a Plains Village component near the surface. Radiocarbon analyses on bone from the site yielded dates of  $7010 \pm 210$  and  $8030 \pm 1100$  BP. The Amundson site (39WW119) had Middle Archaic McKean and Late Archaic Pelican Lake projectile points on the surface along with Extended Coalescent and Post-Contact Coalescent pottery sherds. Excavations there focused primarily on a historic homestead component, but a portion of a Paleoindian projectile point was found in a paleosol at about 60–65 cm below surface, indicating the possibility of an intact archaeological deposit at that level (Oliver *et al.* 1996). Most of the 65 test units did not encounter pre-ceramic materials, so it may be that the Paleoindian component, if any, is offset from the later components. This site is inundated at normal pool level of Oahe Reservoir and thus is subject to damage from water movement.

**Early Archaic.** The White Cap site, 39WW43/39WW44/39WW137, is another terrace exposure with a series of buried soils. No diagnostic Paleoindian materials were found there, but

a radiocarbon date on a bone from the site gave a date of  $7120 \pm 360$  BP. Early Archaic materials are reported from the Mud Flat site, 39WW49, on a beach below an eroding river terrace (Falk and Pepperl 1986). This site has not been test excavated to determine whether intact deposits are present in the terrace. A lone Early Archaic projectile point was found at 39CO114 on a hill slope above Black Hawk Creek (Sanders *et al.* 1988).

**Middle Archaic.** A Middle Archaic component may have been present at 39CA153, based upon the presence of a Duncan-Hanna projectile point on the site surface. Test excavation at the site yielded chipped-stone artifacts, pottery sherds, a shell bead, and a pit feature, probably dating to the Plains Village period; however, the site was so damaged by agricultural activity and development of a state recreation facility that it was impossible to determine whether an intact Middle Archaic component was present (Muniz 2005c).

Site 39CO64 had Middle Archaic and Woodland projectile points on the surface, as well as some probable Plains Village sherds and non-diagnostic chipped-stone artifacts. One feature was uncovered during grader stripping of the site: the bottom of a shallow hearth containing some small pieces of burned bone. The top of the feature had been previously removed by agricultural activity (Rood 1983a).

Surface finds of Middle Archaic materials in the region include 39CO103, which had a McKean point near the edge of a bluff top overlooking the Grand River (Sanders *et al.* 1987). The Amundson site, 39WW119, had a McKean point on the surface, but excavations did not encounter features or a cultural level that could be assigned to that period (Oliver *et al.* 1996). A survey in 2008 found the site to be about 80 percent destroyed by shoreline erosion (Clark *et al.* 2010).

**Late Archaic and Woodland.** Sites with Besant or Pelican Lake projectile points that lack ceramics are typically listed as Late Archaic. The distinction between Late Archaic and Woodland is probably not significant in this region, because these projectile point types occur alongside Woodland pottery and in typical Woodland features such as burial mounds.

Surface finds of Besant projectile points, either as lone artifacts or alongside other chipped-stone artifacts, include 39CA189, 39CO88, 39CO97, 39CO152, 39DW147, 39DW150, and 39DW188. Sites with Pelican Lake points included 39CO111, 39DW61, 39DW120, 39DW122, and 39WW105. Sites 39CO64, 39DW121 and 39PO58 contained unspecified Late Archaic projectile points. These sites have not been test-excavated. They occur in a variety of settings: bluffs, river terraces, and floodplain.

A site exposed in a bank of the Missouri River, 39WW223, contained two Pelican Lake projectile points, two flakes, some animal bone fragments, fire-cracked rock, and a bison skull. These items occurred about 35 cm below surface. At 39DW392, two hearths exposed on a beach below a river terrace were associated with Plains Village ceramics and a Pelican Lake projectile point. These sites were not test-excavated.

At 39WW42, another river terrace site, limited excavation and shovel testing indicated a multiple-component site with a Pelican Lake-like projectile point indicating a Late Archaic use of the location. The site also contained a hearth dating to the late Middle Archaic period, non-diagnostic pottery sherds, fire-cracked rock, chipped-stone artifacts, and animal bone fragments.

Unfortunately, this potential Woodland-Plains Village occupation site has been heavily damaged by shoreline erosion and tree-planting. Another multiple-component site, the Amundson site (39WW119) had a Pelican Lake point on the surface, but extensive test excavation did not identify a clear Lake Archaic/Woodland level (Oliver *et al.* 1996). Most of the site has now been destroyed by shore line erosion (Clark *et al.* 2010).

One of the sites partially excavated during the Smithsonian Institution-River Basin Surveys program was a stratified Woodland site. The Natchke site (39DW238) was a series of five buried cultural horizons exposed in the bank of the Missouri River near Whitlock's Crossing (Wheeler and Johnson 1985). The top three levels contained little cultural material, but the lower two had animal bone, chipped stone artifacts, sherds, and bone tools. Both contained cord-marked conical pottery typical of the Woodland period. Two projectile points from the fourth layer fall in the Besant category; this layer also contained a hearth. Bone from the Woodland layers included pronghorn, bison, and catfish, suggesting a varied diet. Excavation techniques were not adequate to recover plant-food remains.

The region contains about seven mound sites (39CO14/39CO54, 39CO81, 39DW233, 39DW252, 39DW255, 39DW256, and possibly 39CA210). Some of these were excavated by Smithsonian Institution-River Basin Surveys archaeologists in advance of the construction of the Oahe Dam (Neuman 1975). The Woodland-era Sonota complex was defined on the basis of excavations of the Arpan mounds, the Grover Hand mounds, and occupation sites in the Grand-Moreau region (Neuman 1975). It is characterized by simple, sparse ceramics, evidence of use of bison and small animals, and intensive gathering—if not cultivation—of wild plants. The dead were buried in mounds, usually in a flexed (fetal) position and frequently accompanied by numerous items. The presence of nonlocal goods in the burial mounds is evidence of a far-flung trade network.

**Plains Village.** Like other stretches of the Missouri River valley, the Grand-Moreau region has many Plains Village tradition sites. The best known of these are the large and highly visible earth lodge villages, of which more than 70 have been recorded in this region. These include Extended and Terminal Middle Missouri, Initial Coalescent, Extended Coalescent, and Post-Contact Coalescent sites, as well as many that have not been assigned to a particular cultural tradition. Other Plains Village era sites are artifact scatters, burials, and cemeteries. No attempt will be made here to summarize the numerous survey and excavation projects that have taken place at earth lodge village sites. For a list of sites, see t), 39WW203 (Walth Bay Village)

. Summaries are available in Wedel 1961, Lehmer 1971, Zimmerman 1985, Winham and Calabrese 1998, C. Johnson 1998, and Ahler and Kay 2007.

The earth lodge villages of the Grand-Moreau region have been especially amenable to the “Direct Historical Approach” developed by William Duncan Strong and Waldo R. Wedel (Strong 1940; Wedel 1961). The approach moves backwards in time, as it were, from living people and historical records to develop informed interpretations of the archaeological sites. The immediate ancestors of today's Mandan, Hidatsa, and Arikara people built and occupied the village sites that dominate the archaeological record of the region. This has allowed a full picture of life in the area during the centuries preceding contact with non-Native people, as well as placing the archaeological sites into a specific historic context. A complex picture has emerged from these

sites: group expansion via establishment of daughter villages during times of peace and prosperity and group consolidation during times of shortfall and conflict. Villages were generally placed high above the floodplain on the river terraces, with gardens on the rich, well drained soils of the river bottoms. These groups supplemented their corn-maize-bean-sunflower diet with bison and other game and fish. Proto-Mandan and proto-Hidatsa villages tended to have rows of rectangular earth lodges arranged around a central plaza used for ceremonies. Proto-Arikara villages retained the circular lodges of their Pawnee ancestors placed randomly around the village area. When the two came together or “coalesced,” the houses and villages were a melding of each type. Villages might have up to 140 earth lodges. Some were fortified and some were not. In general, each earth lodge held an extended family of a woman, her husband, her daughters, and her daughters’ husbands. This matrilineal pattern allowed women to stay with the family gardens. These groups invented a sophisticated farming system, including developing many varieties of crops and techniques for long-term storage of the harvest.

**Protohistoric.** In addition to Post-Contact Coalescent villages, this region contains the ruins of Fort Manuel Lisa, 39CO5, one of the outposts of the newly established Missouri Fur Company (Smith and Ludwickson 1983) with an associated Arikara village. This post operated in 1812 and 1813. Indians attacked the fort in 1813, burning it to the ground and killing 15 of Lisa’s men. Lisa then moved his operations to a site near present-day Chamberlain. Site 39PO206 may be the remains of Valle’s trading post (Kapler 1987). Another monument to Indian-white conflict in this period is the Leavenworth Site (Krause 1972; Strong 1940). The US Army attacked this Arikara village in 1823 in retaliation for Arikara attacks on a Missouri Fur Company post and a Rocky Mountain Fur Company post. Leavenworth’s force was unable to penetrate the village’s defenses, and its inhabitants escaped unharmed; however, after he retreated some Missouri Fur Company personnel burned the deserted village. The Arikara refugees soon returned and rebuilt the village. When William Duncan Strong excavated the site in 1932, he discovered unexploded shells from Leavenworth’s attack in the upper levels (Strong 1940:366).

**Historic.** The Great Sioux Reservation established by the 1868 Fort Laramie Treaty reserved the western half of this region for Lakota, Yankton, and Dakota groups. Portions of the Standing Rock and Cheyenne River Indian Reservations extend into the Grand-Moreau region on the west side of the Missouri River. Non-Natives settled the eastern half of the region in the 1870s and 1880s. This period is typical of eastern South Dakota with the construction of rail lines and establishment of small towns to serve farming and ranching communities.

## **Sites by Period**

*Paleoindian:* 39CO13, 39DW118, 39DW148, 39WW15, 39WW119, 39WW203

*Early Archaic:* 39WW43/39WW44, 39WW49

*Middle Archaic:* 39CA153 (Duncan/Hanna), 39CO64, 39CO103 (McKean), 39DW119 (McKean), 39WW42, 39WW119 (McKean)

*Late Archaic:* 39CA189 (Besant), 39CO88 (Besant), 39CO97 (Besant), 39CO111 (Pelican Lake), 39DW120 (Pelican Lake), 39DW122 (Pelican Lake), 39DW147 (Besant), 39DW150

(Besant), 39DW188 (Besant), 39WW41, 39WW43/39WW44, 39WW105 (Pelican Lake), 39WW119 (Pelican Lake), 39WW203

*Woodland:* 39CO64, 39CO151, 39CO152, 39DW61, 39DW233, 39DW238, 39DW240, 39DW242, 39DW255, 39DW256, 39WW2, 39WW101

*Late Prehistoric:* 39DW121 (Avonlea), 39DW133, 39DW149, 39DW174, 39DW188

*Plains Village (Unspecified):* 39AR205, 39AR206, 39AR207, 39AR209, 39CA2, 39CA9, 39CA201, 39CA202, 39CA203, 39CA204, 39CA205, 39CO2, 39CO4, 39CO7/39CO10, 39CO8, 39CO15/39CO46, 39CO17, 39CO18, 39CO19, 39CO20/39CO43, 39CO21, 39CO22, 39CO29/39CO49, 39CO30/39CO48, 39CO37, 39CO42, 39CO44, 39CO52, 39CO54, 39CO64, 39CO95, 39CO96, 39CO201, 39CO202, 39CO203, 39CO204, 39CO205, 39CO206, 39CO207, 39CO208, 39CO210, 39DW5, 39DW7, 39DW8, 39DW15, 39DW16, 39DW17, 39DW20, 39DW52, 39DW59, 39DW187, 39DW201, 39DW202, 39DW203, 39DW204, 39DW205, 39DW206, 39DW207, 39DW208, 39DW209, 39DW210, 39DW211, 39DW212, 39DW215, 39DW217, 39DW218, 39DW221, 39DW223, 39DW227, 39DW228, 39DW229, 39DW230, 39DW231, 39DW232, 39DW235, 39DW236, 39DW241, 39DW253, 39DW254, 39DW333, 39DW357, 39PO2, 39PO5, 39PO6/39PO11, 39PO8, 39PO12, 39PO74, 39PO75, 39PO209, 39WW89, 39WW145, 39WW201, 39WW202, 39WW204, 39WW205, 39WW206, 39WW300, 39WW302, 39WW303

*Extended Middle Missouri:* 39CA1, 39CA3, 39CA4, 39CO3, 39CO6/39CO41, 39CO93, 39CO145, 39CO201, 39CO212, 39CO213, 39DW223, 39DW224, 39DW225, , 39DW231

*Terminal Middle Missouri:* 39CA208, 39CO212, 39DW231

*Initial Coalescent:* 39CO78, 39CO201, 39DW6, 39DW220, 39DW233

*Extended Coalescent:* 39CA4, 39CA117, 39CO1, 39CO5, 39CO9, 39CO12/39CO32, 39CO14, 39CO35, 39CO213, 39CO214, 39DW1, 39DW3, 39DW14, 39DW18, 39DW101, 39DW110, 39DW123, 39DW134, 39DW213, 39DW214, 39DW219, 39DW225, 39DW226, 39DW234, 39PO7, 39PO66, 39PO209, 39WW2, 39WW119, 39WW203, 39WW302

*Post-Contact Coalescent:* 39CA4, 39CA5, 39CA6, 39CA8, 39CA10, 39CA117, 39CO11, 39CO13/39CO34/39CO50, 39CO31, 39DW2, 39DW9, 39DW10, 39DW11, 39DW13, 39DW18, 39DW239, 39PO1, 39PO3, 39PO66, 39WW1, 39WW2, 39WW3/39WW4, 39WW5, 39WW7, 39WW8, 39WW9, 39WW41, 39WW119

*Protohistoric:* 39CO5 (fur trade post), 39CO9 (village), 39CO112 (gunflint), 39PO206 (fur trade post)

*Historic:* 39CA25 (occupation), 39CA37, 39CA90 (cabin), 39CA96 (foundation, depression), 39CA97 (depression), 39CA103 (foundation), 39CA104 (depression), 39CA115 (depression, foundation), 39CA134 (foundation), 39CA141 (foundation), 39CA143 (foundation), 39CA144 (foundation), 39CA147 (depression), 39CA149 (turntable), 39CA164 (depression), 39CA165 (foundation), 39CA166 (foundation), 39CA168, 39CA174 (school), 39CA178 (foundation), 39CA179 (burial), 39CA180 (foundation), 39CA183 (burial), 39CA184 (depression), 39CA186

(depression), 39CA187 (depression), 39CA194 (depression), 39CA197 (depression), 39CA204 (cabin), 39CA210 (depression), 39CA211 (depression), 39CA213 (non-farm ruins), 39CA220 (depression), 39CA221 (foundation), 39CA223 (foundation), 39CA225 (town), 39CA226 (depression), 39CA227 (dam), 39CA239 (depression), 39CA2017 (railroad), 39CO73 (foundation, depression), 39CO116 (foundation), 39CO118 (dump), 39CO121 (depression), 39CO122 (depression), 39CO123 (depression), 39CO124, 39CO127 (depression), 39CO128 (depression), 39CO131 (burial), 39CO132, 39CO133 (depression), 39CO134 (dump), 39CO135 (depression), 39CO136 (depression), 39CO137 (depression), 39CO139 (depression), 39CO140 (depression), 39CO141 (depression), 39CO142 (foundation), 39CO143 (foundation), 39CO145 (depression), 39CO217, 39CO219, 39CO230 (non-farm ruins), 39CO239 (foundation), 39DW26/39DW35 (depression), 39DW57 (depression), 39DW93 (depression, dump), 39DW95 (foundation), 39DW100 (burial), 39DW105 (depression), 39DW108 (burial), 39DW112 (town), 39DW116 (non-farm ruins), 39DW132 (depression), 39DW191, 39DW193, 39DW194, 39DW218 (foundation), 39DW222 (depression), 39DW224 (depression), 39DW225 (depression), 39DW329 (foundation), 39DW333, 39DW343, 39DW387, 39DW2213 (road), 39PO21, 39PO25 (depression, well), 39PO32, 39PO33, 39PO36 (depression), 39PO37 (depression), 39PO38 (foundation), 39PO39 (depression), 39PO40 (depression), 39PO54 (dump), 39PO57 (dump), 39PO60 (foundation, depression), 39PO64 (rock shrine), 39PO72 (industrial), 39PO210 (stock pond), 39PO2003 (railroad), 39PO2015 (railroad), 39PO2070 (railroad), 39WW17 (town), 39WW18 (depression), 39WW25 (foundation), 39WW26, 39WW27, 39WW29, 39WW33 (foundation, depression), 39WW39 (foundation), 39WW61 (foundation), 39WW66 (foundation), 39WW68 (depression), 39WW69 (depression), 39WW76 (depression), 39WW78, 39WW79 (industrial), 39WW84, 39WW100, 39WW108, 39WW109 (depression), 39WW111, 39WW117 (school), 39WW119, 39WW121 (dump), 39WW122 (dump), 39WW128 (WORKS PROGRESS ADMINISTRATION dam), 39WW130 (stone corral), 39WW138, 39WW139 (foundation), 39WW140 (roundhouse), 39WW141, 39WW143, 39WW144 (town), 39WW149 (dump), 39WW150 (dump), 39WW158 (foundation), 39WW183 (foundation), 39WW184 (dump), 39WW387, 39WW1015 (railroad)

*Historic Farmsteads:* 39CA91, 39CA92, 39CA95, 39CA98, 39CA105, 39CA116, 39CA160, 39CA161, 39CA163, 39CA209, 39CA222, 39CA224, 39CO117, 39CO119, 39CO120, 39CO125, 39CO126, 39CO129, 39CO130, 39CO138, 39CO144, 39DW58, 39DW92, 39DW96, 39DW104, 39DW114, 39DW115, 39DW117, 39DW192, 39DW240, 39PO71, 39WW42, 39WW110, 39WW120, 39WW126, 39WW127, 39WW146, 39WW182, 39WW185

## **Prehistoric and Historic Themes**

***Sacred Sites, Traditional-Use Sites, and Burials.*** An earlier name for the Grand River was the Ree or Arikara River, in reference to the Arikara villages near its mouth.

This region contains several rock art sites that were considered sacred places. Of particular note is the Gettysburg Medicine Rock, a large rock bearing the imprints of human feet that was used as a place of worship (Curtis1908:Plate 109; Drips 1894:39; Enoe 1903:162; Reid and Gannon 1929:30; Stilgebouer and Stilgebouer 1958:30–32). This and most of the other boulders with rock art have been moved from their original locations to city parks and museums. A glacial erratic boulder that served as a shrine in historic times is recorded as 39PO64. Another shrine constructed of wood and stone was noted near a historic Indian cemetery recorded as 39CO131

(Sanders *et al.* 1988). A mound site, 39DW255, contained a natural basin on a small ridge that held water from a spring. According to the land owner, local Lakotas considered this a holy place (RBS records).

The Cheyenne Hills in Corson County were so-named for an early Cheyenne village located there (Grinnell 1918:382). A Lakota ghost story referred to a butte about eight miles south of Fort Yates (Densmore 1918:496). A location which seems to be in Dewey County, opposite the Little Bend of the Missouri, was said to be the place of origin of the Badger, Night Dance, Night Eaters, and Grass Dance societies (Charger 1946:19). Several cairns and stone alignments in this region have been identified as traditional cultural properties (Archaeological Research Center records).

***Paleoindian Sites.*** Projectile points that are similar, but not identical, to Agate Basin and Angostura types occur in this area. The chronological placement of these projectile points is unclear at present. Besides determining the potential of these artifacts to pin sites to a particular time frame, basic research is needed regarding Paleoindian lifeways and developments in this region. Do Paleoindian sites in this region represent large-game hunting traditions or a more diverse lifeway that took advantage of riverine resources? What do these sites indicate in terms of group size and mobility? How are these sites related to Paleoindian sites in adjacent regions? More data and analysis will be needed to answer these questions.

***Woodland and Plains Village Developments.*** This region is of foremost importance in tracing the emergence of the Plains Village cultural pattern from the Woodland pattern. The beginnings of horticulture and construction of semi-permanent villages are rooted in the Woodland era; however, a clear picture of Woodland life has yet to emerge because few sites other than burial mounds have been excavated. This region is also uniquely suited to exploring the relationships between various Plains Village groups and the dynamics of group formation, expansion, and alliance for protection and trade.

## **Archaeological Potential**

This history of Woodland and Plains Village periods in this region is complex. Although many of the village sites were inundated or subsequently destroyed by the construction and operation of the Oahe Dam, some intact sites still exist in the region. In addition, many of the sites excavated under the Smithsonian Institution-River Basin Surveys salvage excavation program were never fully analyzed or reported. Much work remains to be done in bringing the salvaged data to bear on local and regional research questions. This region also retains pockets of older sediments that are likely to contain sites dating to the Paleoindian and Archaic periods. These tend to be alluvial stream terrace deposits on or near the Missouri River. Because such deposits are in danger of removal by shoreline erosion, efforts should be made to find and protect them.

Site No.	Name	Excavated?	Affiliation	Project	Condition	Principal Reference
39AR0205		No		RBS	Inundated	RBS records
39AR0206		No			Inundated	RBS records
39AR0207	Pascal Creek Village	No			Inundated	RBS records
39AR0209	Laloocatt Village #1	No			Inundated	RBS records
39CA0001	Vanderbilt Village & Post	No (tested only)	EMM		Largely destroyed by erosion	RBS records
39CA0002	Keen's Village	No			Damaged by erosion	RBS records
39CA0003	Jones Village	No	IMM			
EMM		Damaged by erosion	RBS records			
39CA0004	Anton Rygh	Yes	EMM			
EC						
PCC	UI, RBS	Largely destroyed by erosion	Lehmer 1971			
39CA0005	LaGrace Village	No, in Over's notes, but not found	PCC		Inundated?	RBS records
39CA0006	Bamble's Village	Yes	PCC	UW	Inundated	Baerreis and Dallman 1961
39CA0010	Kakawissassa Village	No	PCC		Inundated	RBS records
39CA0011	Ashley Island	No, in Lewis & Clark journal, but not found	PCC		Inundated?	Archaeological Research Center records
39CA0117		No	EC or PCC		Mostly destroyed by erosion	Falk and Pepperl 1986
39CA0140		No			Mostly destroyed by erosion	Falk and Pepperl 1986
39CA0153		No (tested only)			Damaged by park development	Falk and Pepperl 1986
39CA0202		No			Damaged by ag activities and roads	RBS records
39CA0205		No			Damaged by erosion	RBS records
39CA0208	Helb	Yes	TMM		Destroyed by erosion	Kay 1993, 1994, 1995; Falk and Ahler 1988
39CA0201	Foxley	No			Unknown	RBS records
39CO0001	Demery	Yes	EC	SHSND	Inundated	Woodworth and Wood 1964
39CO0002	Kato	No			Inundated	RBS records
39CO0003						

Site No.	Name	Excavated?	Affiliation	Project	Condition	Principal Reference
39WW009	Kenel	No	EMM		Destroyed by road and development	RBS records
39CO0004	Shooting Bear Village	No	EMM		Damaged, unknown	RBS records
39CO0005	Ft. Manuel Lisa	Yes	EC	RBS	Inundated	Smith and Ludwickson 1978
39CO0006						
39CO0041	Jake White Bull	Yes	EMM	UND	Unknown	Ahler <i>et al.</i> 1977
39CO0007						
39CO0010						
39CO0205	Standing Bear Village	No	EC		Inundated	RBS records
39CO0008	Broken Horn Bull	No			Unknown	RBS records
39CO0009						
39CO0044	Leavenworth Village	Yes	EC			
PCC	RBS	Inundated	Kraus 1972			
39CO0012						
39CO0032						
39CO0033						
39CO0209		No	EC		Unknown	RBS records
39CO0013						
39CO0034						
39CO0050	Red Horse Hawk Village	Yes	PCC		Unknown	Lehmer 1971
39CO0014	Davis	Yes	EC	RBS		
UM		Falk and Ahler 1988				
39CO0030						
39CO0048	Upper Pekelder	No			Unknown	RBS records
39CO0035			EC		Extant	Archaeological Research Center records
39CO0078	H & H	No	IC		Disturbed	Sanders <i>et al.</i> 1987
39CO0201	Timber Creek	No	EMM			
EC		Unknown	Johnson 1985			
39CO0212			EMM			
TMM		Destroyed by erosion?	Johnson 1985			
39CO0213	Travis I	Tested	EMM		Damaged by erosion	Haberman 1982
39CO0214		No	EC		Disturbed	Haberman 1978
39DW0001	Moreau River Village	No	EC		Disturbed	Winham 1984
39DW0002						
39DW0012	Four Bear	Yes	PCC	USD	Inundated	Hurt 1962

Site No.	Name	Excavated?	Affiliation	Project	Condition	Principal Reference
39DW0003	Tricia Village	No	EC		Inundated	RBS records
39DW0006	Calvary Church Village	No	IC		Inundated	RBS records
39DW0009		No	PCC		Inundated	RBS records
39DW0010	Lahoocat Village #2	No			Inundated	RBS records
39DW0011	Over's Fox Creek Village	No	PCC		Extant	RBS records
39DW0014		No	EC		Disturbed	RBS records
39DW0018		No	EC		Disturbed	RBS records
39DW0101		No	EC		Mostly destroyed by erosion	RBS records
39DW0110		No	EC		Extant	Sanders <i>et al.</i> 1988
39DW0213		No	EC		Disturbed	RBS records
39DW0214		No	EC		Inundated	RBS records
39DW0215		No			Disturbed	RBS records
39DW0219		No	EC		Inundated	RBS records
39DW0220		No	IC		Disturbed	RBS records
39DW0223		No			Disturbed	RBS records
39DW0233	Swift Bird	Yes	EMM	RBS	Partially inundated	Hoffman 1963, Neuman 1975
39DW0224		No	EMM		Disturbed	Johnson 1979
39DW0225	Three Rivers Farms Village	Yes	EMM			
EC		Disturbed	Ferris 1975			
39DW0226		No	EC		Extant	RBS records
39DW0231	Calamity Village	Yes	EMM			
TMM	RBS	Inundated	Lehmer 1971			
39DW0234	Molstad Village	Yes	EC	RBS	Inundated	Hoffman 1967
39DW0239	Stove Creek Village	No	PCC		Inundated	RBS records
39PO0003	Rosa	Yes	PCC	USD	Inundated	Hurt 1959
39PO0007	Hosterman	Yes	EC	RBS	Inundated	Miller 1964
39WW0001	Mobridge Village	Yes	PCC	SI	Disturbed	Strong 1940
39WW0002	Larson Village	Yes	PCC	RBS	Inundated	Lehmer 1971
39WW0003						
39WW004	Frisvold Village	Yes	PCC	UW	Inundated	Baerreis and Dallman 1956
39WW0007	Swan Creek	Yes	PCC	USD	Inundated	Hurt 1957
39WW0008	Lake Evarts	No	PCC		Inundated	RBS records
39WW0009	Blue Blanket	No	PCC		Inundated	RBS records
39WW0119	Amundson	Tested	EC			
PCC		Partially inundated	Oliver <i>et al.</i> 1996			
39WW0203	Walth Bay	Yes	EC	UM	Partially destroyed by erosion	Falk and Ahler 1988
39WW0302	Payne	Yes	EC	USD	Inundated	Wilmeth 1958

Table 3. Plains Village sites in the Grand-Moreau archaeological region.

## **Management Considerations**

While the Missouri River shoreline and terraces have been the focus of much archaeological research, areas away from the river and sites other than villages and burial mounds have received little attention. Off-river studies are needed to provide a more balanced picture of pre-contact life in the region.

A major management problem in this region is the wholesale loss of sites to construction of the Oahe Dam and continued damage from shoreline erosion. Efforts to protect sites via riprapping the shoreline have generally not succeeded. While in other regions site preservation is preferred over excavation, the continued loss of data to erosion is a worse option than salvaging at least some information at sites threatened by shoreline erosion. Looting has been another problem in this region with highly visible village sites located on public lands. Improvements in law enforcement and prosecution of looters have helped greatly in reducing this problem. The third big management problem in this region is destruction of sites on state lands. State parks and recreation areas have done a poor job of protecting archaeological resources. Significant sites have been damaged or destroyed by installation of recreational amenities, road construction, and tree planting. It is recommended that such public facilities develop and follow detailed plans to prevent further loss of historic resources.

The presence of deeply buried stratified archaeological deposits in this region should alert cultural resource managers to the necessity for thorough testing of all alluvial terrace settings, including excavation to bedrock or glacial till. These scarce remnant deposits are of great importance to understanding the pre-village history of the Missouri River valley.

## **Sites Listed in the National Register of Historic Places**

39CO5 (Fort Manuel Lisa and Village), 39CO39 (rock art), 39DW234 (Molstad Village), 39PO63 (rock art), 39PO205 (rock art), 39WW203 (Walth Bay Village)

## **Region 12: Bad-Cheyenne**

### **Setting**

The Bad-Cheyenne Region is located in central South Dakota. The area consists of the Missouri River valley, Missouri River breaks, and adjacent plains areas. The boundaries for this region are arbitrarily drawn to include all areas south of the Sully-Potter and Sully-Dewey county lines, west to the east edge of Ziebach County, north of the Stanley-Lyman county line, and east roughly as far as the eastern half of Hughes County and the Sully-Hyde county line. Roughly the southwestern half of Stanley County is excluded, lying instead in the Bad River Basin region. The eastern boundary takes in a small portion of Potter and Hyde counties and excludes the eastern half of Hughes County and the southeastern corner of Sully County. Present-day topography is characterized by the Missouri River valley, consisting of rough, steeply-rolling river breaks and adjacent grass-covered plains. The region as defined here differs from Lehmer's (1971) Bad-Cheyenne Region, which included only the Missouri River trench and extended from the mouth

of the Bad River to the old Cheyenne River Indian Agency (approximately where Highway 212 crosses Oahe Reservoir today).

The Missouri River divides South Dakota approximately in half north to south. The river is of recent geologic age. Its present course was established by the westernmost extent of the Laurentide Ice Sheet, which abruptly truncated east-west stream courses and diverted them southward to the central Missouri River (Flint 1955). The Missouri Basin formerly drained to Hudson Bay. This change in drainage created a distinctive environment. Because the Missouri River shortened the course of its feeder streams, it was a fast-flowing, sediment-laden, entrenched river before it was dammed by the US Army Corps of Engineers for hydroelectric projects in the 1950s and 1960s. Sandbars and islands dotted its course. Spring floods and summer drying created broad, level bottomlands ideal for horticulture. High terraces and bluffs sheltered the bottomlands from winter weather; thick stands of deciduous trees there provided both shelter and firewood for the winter camps of the Missouri villagers. A series of terraces rise like steps along both sides of the river, although the lower terraces are now largely inundated (Coogan 1987). The terraces are grass-covered, flat areas overlooking the water. Farther back, a heavily dissected zone known as the breaks lead to the uplands. Their bluffs lie 300 to 600 feet above the level of the river, providing an unimpeded view of the valleys below. These uplands consist primarily of grassy rolling tablelands on both sides of the river, but the intermediate breaks are more eroded and rugged on the west side.

For a more detailed discussion of the ages, morphology and archaeological potential of the Missouri River terraces, see the discussion of the Big Bend archaeological region below.



*Figure 156. View of typical Bad-Cheyenne landscape (ARC photo).*

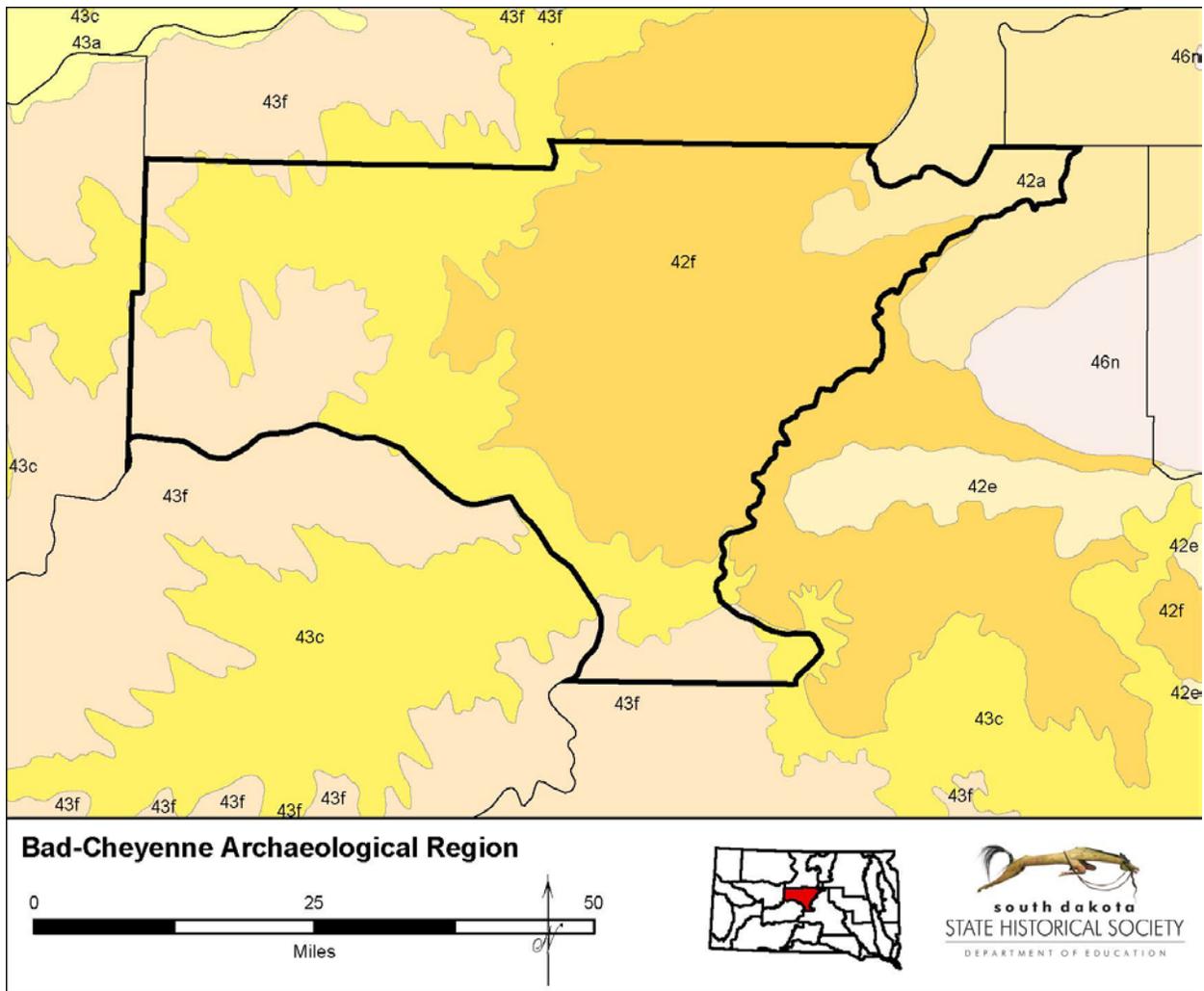


Figure 157. Ecoregions of the Bad-Cheyenne archaeological region.

42: Northwestern Glaciated Plains

42a: Missouri Coteau, glaciated, hummocky, rolling stagnation moraine; stream drainage absent or uncommon; numerous pothole wetlands between mounds of glacial till.

42f: Southern Missouri Coteau Slope, glaciated, level to rolling uplands sloping westward to Missouri River; simple stream drainage.

43: Northwestern Great Plains

43c: River Breaks, unglaciated, highly dissected hills and uplands bordering major rivers and associated alluvial plains.

43f: Subhumid Pierre Shale Plains, unglaciated, undulating plain; steep-sided, incised stream channels.

## Previous Archaeological Investigations

Early archaeological work in the Bad-Cheyenne region involved mapping large village sites. From 1881 to 1895, T.H. Lewis conducted a project to map all archaeological sites in Minnesota and the Dakotas. His maps and notes include “forts” along the Missouri River, but he did not publish on these (Helgevold 1981:9–10). Around the same time, Z.T. Daniel collected local Indian traditions about the ruins near the mouth of the Cheyenne River. Lakota informants told him these were the former homes of enemies (Daniel 1891). In 1898 DeLorme Robinson, a physician from Pierre, mapped the Arzberger site (39HU6). He attempted to evaluate this and other sites in terms of the Mound Builder controversy addressed only four years earlier in Cyrus Thomas’s landmark study (Robinson 1898:109–114; Thomas 1894). This was an international debate over the origins of mounds and other ancient features in North America: were they built by a now extinct race or by the ancestors of modern American Indians? Thomas’s study marshaled evidence from throughout the East and Plains that clearly demonstrated a direct link between historic Indian nations and archaeological features. Thomas listed some South Dakota village and mound sites in his study but did not conduct any first-hand research in the state. In 1906, Charles DeLand, a member of the South Dakota Historical Society, published a monograph on Arikara history that assigned many of these sites to the ancestors of that nation (Deland 1906).

The first formal field studies in the region were conducted by W.H. Over of the University of South Dakota (Sigstad and Sigstad 1973). Over attempted to map as many sites as he could along the Missouri River (Helgevold 1981:17). Over lacked the resources for large-scale excavations, but he made small excavations and collected materials from various sites for the University of South Dakota Museum. In 1934, the National Park Service asked Over, as the reigning expert on South Dakota archaeology, to recommend sites that should be preserved as national monuments. In the Missouri River trench, Over recommended six sites representing different archaeological patterns and, presumably, different cultures. These included the Buffalo Pasture (39ST6) and Thomas Riggs (39HU1) sites in the Bad-Cheyenne region. University of South Dakota Museum crews excavated Thomas Riggs and a crew from Columbia University excavated Buffalo Pasture and Arzberger in the years preceding World War II (Meleen 1949; Hurt 1953; Spaulding 1956). The University of South Dakota Museum crew also worked at the Spotted Bear site (39HU26) and the LaRoche site (39ST9) (Meleen 1948; Hurt 1954).

From the late 1940s through the late 1960s, the River Basin Surveys unit of the Smithsonian Institution conducted major survey and excavation projects in the region (Lehmer 1971; Thiessen 1994). These projects were reported through the 1970s (Brown 1966, 1974; Caldwell 1961, 1966c; Cooper 1949; Hoard 1949; Hoffman 1967, 1968, 1970; Hoffman and Brown 1967; Jensen 1964, 1967; Jones 1967; Johnston 1967a, 1982; Johnston and Hoffman 1966; Lehmer 1952, 1954, 1971; Lehmer and Jones 1968; Mattison 1954; Metcalf 1956; C. Miller 196, 1964; Neuman 1960, 1964a, 1975; G. Smith 1960; Thiessen 1977; Wedel 1947, 1949, 1955; W. Wood 1976). Intended to salvage data and materials from sites that would be destroyed or inundated by major hydroelectric dams, these projects demonstrated that the Bad-Cheyenne region had a rich and complex history. They focused on the large and highly visible earth lodge villages of the Plains Village period and on a few historic forts and fur trading posts. From these projects arose the complex terminology still in use for the area, which describes archaeological cultures in terms of a nested set of spatial-temporal units: pattern, tradition, horizon, variant, phase, and focus (McKern 1939; Stephenson 1954; Caldwell 1966a; Lehmer and Caldwell 1966; W. Wood 1965b, 1969; Lehmer 1971).

The period from the 1960s through the early 1980s was when most of the studies of human skeletons from the region took place (Bass 1962, 1966; Birkby 1962; Gregg 1965; Lyon 1970; Jantz 1970; Owsley and Jantz 1978; Jantz and Owsley 1982, 1994; Orser 1980; Owsley *et al.* 1981; Holliman and Owsley 1994).

Beginning in the mid-1970s, the US Army Corps of Engineers incorporated large-scale surveys and limited test excavations into their cultural resource management program (Adamczyk 1975; Toom and Artz 1985; Falk and Pepperl 1986; Tracy *et al.* 1992; Toom and Picha 1984; Toom and Steinacher 1980; Winham and Lueck 1987; Winham *et al.* 1988; Berg and Bozell 1997). Two projects independent of the US Army Corps of Engineers focused on assessing the condition of sites along the reservoir banks (Ebert *et al.* 1987; Ruple 1991); another such project was Corp-sponsored (Nowak 1979). Other large surveys in the Bad-Cheyenne region were done for housing developments (Buechler 1999c; Winham 1989), canals (Tratebas 1976; L. Alex and Zimmerman 1977), highway reconstruction projects (Abbott 1995; Fosha 1992c; Kurtz 1988c), rural water systems (Buechler 2003c, 2006b, 2006c), a reservoir (Sigstad and Biggs 1973), grazing allotments (Winham *et al.* 1984), and prescribed burns on state lands (P. Miller 2002a, 2002b, 2002c). The Corps also sponsored an excavation project involving volunteers at 39ST106, a site with Extended Coalescent and contact-era components (Nowak 1983).

Small-scale contract surveys and test excavations in the region are too numerous to list here. These were done in advance of stock water projects, gravel pits, bridge replacements, small road improvements, recreational facilities, utility lines and cables, irrigation projects, shelterbelts, wastewater treatment facilities, and housing developments. In recent years, large surveys were done for a railroad expansion (Zietz *et al.* 2008) and land transfers along the Missouri River (Clark *et al.* 2010). The Woodland and Plains Village archaeology of the Bad-Cheyenne region is well known through the large amount of information collected through these projects and the high visibility of earth lodge village sites. The archaeology of the Archaic and Paleoindian periods, by contrast, is very poorly known.

Several collections of papers on Plains Village culture have served to reassess and refine early attempts at cultural chronology and typology, as well as to apply data from the Middle Missouri to questions of cultural development, response to climate change, long-term trade interactions, symbolism, and warfare and conflict (Orser 1980, 1984; Orser and Owsley 1982; Kay and Ahler 2007; W. Wood 1976, 1977, 1998; Steinacher 1990; Tiffany 1993; Winham and Calabrese 1998; Toom 1992c; Owsley 1992b; Winham and Lueck 1994; Banks 1994; Rogers 1987, 1990). Other research has also reexamined old ideas about responses to drought among the Plains Village farmer-hunters (Tiffany 2007a). Another area of research has sought to identify factors in village location and relocation patterns (Griffin 1977; Hoffman 1977; Zimmerman *et al.* 1982).

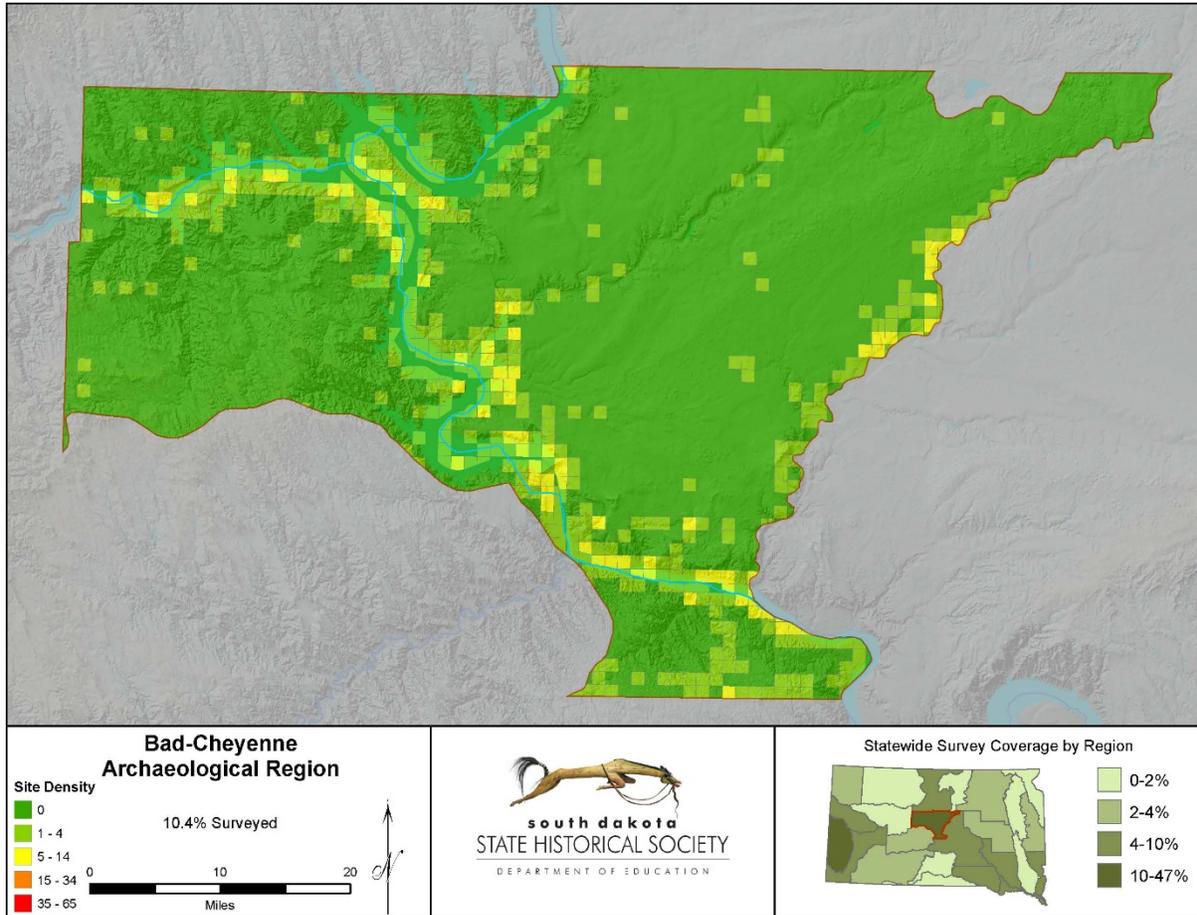


Figure 158. Density of known archaeological sites, Bad-Cheyenne archaeological region.

## Historic Contexts

**Paleoindian.** The Bad-Cheyenne Region has only two recorded Paleoindian sites. Archaeologists found a spurred endscraper on the surface of 39ST185. This artifact is typical of early Paleoindian sites in the Northern Great Plains. Site 39ST228 is a diffuse village site with Initial Middle Missouri and Extended Coalescent components. Jerry McQuay of Pierre collected an Agate Basin point from the base of the terrace and turned it over to the South Dakota State Historical Society. The point is made of Knife River Flint. Excavation at the site was limited to salvaging a few features and burials exposed by erosion. Plains Village features and artifacts lie as much as 95 cm below surface in the exposed bank of the site. The origin of the Paleoindian projectile point was not discovered; no deep trenching or excavation has been done at the site. These finds raise the possibility of Paleoindian use of the area but reveal nothing definite about it.

**Archaic.** No Early Archaic components have been found in the region. A few Middle Archaic components occur there. A large chipped-stone artifact scatter, 39SL286, contained two Middle Archaic (McKean Complex) and two Late Prehistoric projectile points (Falk and Pepperl 1986), but the site was too shallow to yield reliable information about Archaic use of the area (Rothwell

*et al.* 1987). Site 39HU174 had three cultural zones exposed in a bank. A crew from Augustana College dug nine test units there in 1988 and found materials dating to the Middle Archaic (McKean Complex), Late Archaic (Pelican Lake or Besant Complex), and the Plains Village tradition. Work at the site was too limited to reveal how prehistoric people used it (Winham and Hannus 1988). Test excavations at 39HU102 revealed four cultural levels: historic, Plains Village (Extended Coalescent), Woodland, and Archaic. Hearths in the lowest level were dated between 4600 and 3000 BP, suggesting a Middle Archaic age for this level. The Woodland level contained no pottery but had projectile points that fit those expected for the Sonota Complex (Toom and Steinacher 1980). Another site, 39HU194, is known only from artifacts found on the surface. These included a few flakes, a few bone fragments, a chipped-stone knife, and a small, side-notched projectile point. Two other sites contained only projectile point fragments. That at 39HU304 was not identified as to type; that at 39SL357 was a Besant or Pelican Lake type. Another possible Pelican Lake point was found on the surface of 39ST139 along with two flakes, but the site apparently lacked subsurface deposits. (Winham *et al.* 1984).

It appears that intact Archaic archaeological components in this region are very deeply buried. Deep trenching will be necessary to locate whatever Archaic sites the region holds. The handful of Archaic sites known so far merely hint that the area was used by hunting and foraging groups during this long time span but provide little information as to their houses, settlements, community organization, or belief systems.

**Woodland.** With the onset of the Woodland and Late Archaic periods, the number of sites and the amount of information increase significantly. Component D at Over's La Roche site is perhaps the best known Woodland component within this region. Excavations at the site provided the northernmost evidence of Woodland structures in South Dakota (Hoffman 1968). Features included a post structure with an interior hearth. The structure was oval in outline and measured 23 by 27 feet. Among the artifacts were Besant project points and ceramics classified as Valley focus.

Along the Missouri River, sites with Besant-like corner-notched dart points are placed within a Woodland component referred to as the Sonota complex (Neuman 1975). These are identical to projectile points in western sites classed as Late Archaic. The difference is not in the ages of the two sets of sites, but in the presumed historical trajectory of each tradition. In the west, Late Archaic sites are basically similar to those of the preceding Early and Middle Archaic, which vary only in the degree to which local populations hunted bison, in the specifics of techniques used for communal game drives, and occasionally in the presence of ceramics in the Late Archaic sites (Frison 1991). Along the Missouri and areas to the east of the river, sites of this period are thought to be the antecedents of the Plains Village tradition. The transition from Woodland to Plains Village cultures was not absolute; some Woodland sites overlap in time with early Plains Village sites (Kay and Ahler 2007:xviii). Woodland sites in the eastern Plains show a tendency toward more sedentary patterns of settlement, based on hunting and gathering of riverside resources, and perhaps some incipient farming. Woodland sites along the river and in eastern South Dakota contain large amounts of pottery—the earliest in the state. Those in the west may have a few pieces of pottery, but many have no ceramics.

Mounds are another hallmark of the Woodland period in eastern and central South Dakota. These were constructed by piling up earth in linear, round, or conical forms. Some are capped with

cobbles. Some, but not all, contain human burials. Most of the mounds are dome-shaped, 30 to 100 meters in diameter, and up to two meters in height. Many contain a rectangular subfloor pit, into which secondary burials were placed, with a log or timber ceiling. The number of burials in each mound varies from none or one to dozens.

The complex surface expression of 39HU48 included 67 stone circles in three clusters, seven cairns, five small depressions, and two large stone mounds. The site's identification as Woodland rests mainly on the presence of the stone-covered mounds and excavation of a Woodland pot from within one of them in the 1930s (Ferry *et al.* 2007:5.16). This and a later, similarly undocumented excavation done in 1962 uncovered more than 14 secondary human burials (the exact number is not clear) (Ferry *et al.* 2007:5.18). Because the area around the mounds is devoid of stone circles, the site's occupants may have taken stone circle rocks to make the mounds. Based on this possibility, researchers suggest the mounds may postdate the stone circles (Ferry *et al.* 2007:5.16). The second undocumented excavation project included one stone circle feature, but the only information on this is a notation that the feature was "obviously a habitation but the cultural remains were very sparse" (William Bass, 1962 notes, cited in Ferry *et al.* 2007:5.18). The age of the stone circles thus remains an unknown. A nearby site, 39HU153, contained one stone mound and three clusters of stone circles, two with two rings and one with six. Excavation in the center of the mound uncovered an unspecified number of burials, along with Woodland pottery and an iron projectile point (William Bass, 1962 notes, cited in Ferry *et al.* 2007:5.21).

Site 39ST225 is an earth lodge village also containing low, linear mounds of presumed Woodland age. Smithsonian Institution-River Basin Surveys work at the site in the 1950s neither recorded nor investigated the mounds. Test excavations at 39ST122 revealed a more convincing Woodland component. A University of North Dakota crew excavated six test units in 1987 (Toom *et al.* 1990). These produced evidence for a Late Plains Woodland component.

A small, compact earth lodge village at 39ST120 contained a possible Plains Woodland component underlying a Post-Contact Coalescent component (Toom 1990a). The possible Woodland component was minimal, consisting only of a few animal bone fragments, and thus contributes little to our understanding of the period. A small occupation site, 39ST80, lacked subsurface deposits. The surface contained two Besant and two possible Pelican Lake projectile points, two scrapers, and a core. No ceramics were present. The site was interpreted as a short-term seasonal hunting camp assigned to the Sonota complex (Haberman 1979). Site 39SL312 was a surface scatter of chipped stone artifacts, ceramics, and bone fragments. Three test units suggested that the site might have two components: an upper, Extended Coalescent component and a lower, possible late Woodland component, based on the form of the projectile points from the site. The excavations were not adequate to confirm the presence of a Woodland cultural level (Falk and Pepperl 1986).

**Great Oasis.** The core area of Great Oasis on the Missouri River is downstream of the Bad-Cheyenne region. Only one site has been identified as Great Oasis thus far in the region. At 39ST239, ceramics and other artifacts formed a buried midden exposed in a stream bank. This cultural layer includes a possible house floor. Initial Middle Missouri (Sanford/Anderson Ware) and Great Oasis pottery sherds occurred with bone and other cultural debris. This dates the site to the Woodland-Plains Village transition period.

The Great Oasis complex of southeastern South Dakota has similarities to Woodland and Plains Village patterns alike. Most researchers now consider the Great Oasis complex a terminal Woodland development, dated at 950–1100 CE, although some place it in the Plains Village pattern (Henning and Henning 1978; Tiffany 1983, 2007a). Great Oasis is thought to have developed from local Woodland complexes. Specifically, Valley, Loseke Creek, and Randall phase sites are hypothesized to represent the antecedent of Great Oasis. All three are marked by globular vessels with high flared or S-shaped rims and decorated on the exterior rim by trailing, cord-marking, tool impressions, or cross-hatching (Tiffany 2007a). Great Oasis groups, like Plains Village groups, practiced both hunting-foraging and maize horticulture. Some researchers consider Great Oasis an early variant of the eastern Initial Middle Missouri, suggesting a complex mix of immigration from the eastern Woodlands and contact with Mississippian cultures farther south (Tiffany 2007a). Along the Missouri River in South Dakota, sites suggest a gradual development of maize horticulture along the bottomlands. Recent studies of local chronologies show that the temporal ranges of Great Oasis and Initial Middle Missouri overlap very little (Tiffany 2007a).

***The Middle Missouri Tradition.*** The Middle Missouri tradition includes Initial, Extended and Terminal variants. Each has a distinct spatial and temporal range, but these overlap among the variants. The Initial variant generally includes Initial Middle Missouri sites of the Missouri River trench from the White River to the Cheyenne River in South Dakota (Anderson, Cattle Oiler, Sommers, Grand Detour, and Swanson phases); the Lower James River phase and the Brandon phase of southeastern South Dakota; the Mill Creek culture of northwestern Iowa and, possibly, the Cambria phase of southeastern Minnesota (Tiffany 1983:92–98, 2007a; Henning and Toom 2003). It dates from 1000 to 1300 CE (C. Johnson 1996). The eastern sites are slightly earlier than those on the Missouri River. Most researchers think the Middle Missouri developed locally from Late Woodland and Great Oasis cultures (C. Johnson 1996:208–210; Winham and Calabrese 1988:273–274; Henning and Toom 2003; Tiffany 1983, 2007a), but shows influences from and contact with the Mississippian cultures of the Southeast.

It is important to note here that Middle Missouri terminology is inconsistently applied. The terms *focus* and *phase*, in particular, are applied in different ways by various researchers. Researchers disagree even as to the number of phases, foci, aspects, and the like in any given region. No attempt is made here to reconcile the various taxonomic systems appearing in the current archaeological literature, but the reader is hereby alerted to the inconsistencies that will confront anyone delving into the archaeology of the Middle Missouri subarea. This discussion generally follows Henning and Toom (2003) and Tiffany (1983, 2007a) for Middle Missouri taxonomy.

The eastern and western Initial Middle Missouri cultures either developed alongside one another (Tiffany 1983, 2007a; Henning and Toom 2003:190) or the western version resulted from migrations from the eastern area (Toom 1992a, 1992b; Winham and Calabrese 1998:278; W. Wood 2001:190). Sites with Middle Missouri pottery occur far to the west of the Missouri River; these are coeval with the earliest Middle Missouri Tradition sites on the river (Tiffany 2007a). The Extended variant is dated to 1200–1400 CE. Its core area is the Missouri River from the Big Bend to the Little Missouri River in North Dakota (Lehmer 1971; Ahler and Toom 1989; Tiffany 2007a). It comprises three regional phases, based primarily on ceramics: the Bad-Cheyenne (Thomas Riggs phase); the Cannonball-Grand-Moreau; and the Knife (C. Johnson 1996:249). This variant appears to have developed from Late Woodland cultures in the North Dakota portion of the Missouri River

or from contemporaneous cultures of the Northeastern Plains. In central South Dakota, Extended Middle Missouri apparently developed largely independent of the Initial Middle Missouri variant with which it apparently overlaps in time (Johnson 1996, 2003; Tiffany 2007a). The Terminal variant occupies the same region from 1400 to 1500 CE.

***Initial Middle Missouri.*** The first large farming villages in southeastern South Dakota and along the Missouri River date from 1100 to 1230 CE. This Initial Middle Missouri Tradition comprises a series of localized village clusters distinct from the dispersed hamlets of the preceding Woodland period. The hallmarks of the Initial Middle Missouri tradition include: compact, fortified villages; rectangular earth lodges with interior hearths and numerous storage pits inside and out; villages fortified by trench and palisade systems, sometimes with bastions; extensive use of bone for tools; notched triangular projectile points; and globular, grit-tempered pottery with various rim forms and decorations (Lehmer 1971; Winham and Lueck 1994; Winham and Calabrese 1998; Wood 2001; Tiffany 2007a). The sites provide evidence of farming, as well as bison hunting. Primary crops include maize, beans, squash, sunflowers, chenopods, and amaranth (Benn 1974; Nickel 1977; W. Wood 2001). Wild species, such as chokecherry, plum, and junberry supplemented the diet. An important Initial Middle Missouri trait is the presence of items and motifs related to Stirling Phase materials from Cahokia and other sites of the Middle Mississippi region (Ludwickson *et al.* 2003).

Initial Middle Missouri houses were 1.5 to 2 times longer than wide. They varied from 35 to 60 feet in length. They were constructed by excavating a floor about one meter below the surface, sometimes leaving a raised bench along one or two sides of the interior. The superstructure was made of a heavy pole support structure with smaller poles propped against the supports and covered over with branches and dirt. The houses had a single entrance on the south side, with earthen steps or a ramp leading from a narrow antechamber to the house proper. The hearth was built between the entrance and the center of the lodge. The houses contained many bell-shaped and cylindrical cache pits excavated into the floor. Additional cache pits were placed outside the houses.

Initial Middle Missouri settlements in this region usually had 20–30 houses, often arranged in regular rows. Fortified villages tended to be more compact with less space between houses. Some villages had an open plaza in the village center. Fortifications at this time usually simply enhanced an easily defended topographic position. For example, many villages were placed on the point of a steep river bluff. A ditch was then constructed on the open side(s) of the settlement away from the river. Many villages had a palisade along the inner edge of the ditch, some with projecting bastions. Fortifications, of course, indicate armed conflict; most archaeologists attribute this to nomadic groups raiding the villages for their stockpiles of maize. Burial practices are not well understood. Occasionally human bones are found in trash middens or inside cache pits, but this does not account for all bodies (Lehmer 1971).

Most Initial Middle Missouri ceramic vessels are globular, grit-tempered jars. Grit-tempered bowls, seed jars, water bottles, and miniature vessels occur in small numbers. A few pieces replicate Mississippian ceramics from the Southeast (Tiffany 2007a). Jars of the Missouri River region have plain to smoothed-over-cordmarked surfaces with outflared, S-shaped or collared rims. Sometimes simple linear decorations were applied to the top of the lip, juncture of the lip and rim, the rim, or shoulder. A few pieces with curvilinear designs on shoulders, red-slipped

surfaces or shell temper have been found in Initial Middle Missouri components. Common wares are Sanford/Anderson ware (including Cable ware), Foreman ware (including Monroe Collared type and Grass Rope ware), Chamberlain ware, and Stuart Collared (braced) ware.

Other typical artifacts include small unnotched or side-notched arrow points, grooved stone mauls, and celts. Bone tools include bison scapula hoes, awls, horn scoops and spoons, fleshers, knife handles, scapula knives, hooked bone knives, arrow shaft wrenches, and fishhooks. Personal ornaments of bone and shell also occur, including some made of Pacific or Gulf shell. Other indicators of long-distance trade between the Middle Missouri and the Gulf of Mexico include shell-tempered pottery, pottery with Southeastern motifs such as the weeping eye and spiral scrolls, Mississippian pottery vessel forms (Powell and Ramey rolled-lip jars and bottles), and red-slipped pottery (Tiffany 2007a). Eastern and western divisions are recognized on the basis of differences in ceramics (A. Alex 1981a; Kivett and Jensen 1976; Toom 1992a, 1992b; Winham and Lueck 1994; Tiffany 1983, 2007a; Winham and Calabrese 1998). In the western Initial Middle Missouri variant of the Bad-Cheyenne and Big Bend regions, pottery appears to have been produced locally with Mississippian influences, but not imported. In the eastern variant, centered at the South Dakota-Iowa border, shell-tempered pottery probably represents imports from the Middle Mississippi region.

The Initial Middle Missouri classification includes several coeval phases, or clusters of village sites that appear to have been periodically reoccupied by a single group tied to a single locality. The Bad-Cheyenne region includes sites assigned to the Anderson, Cattle Oiler, and Sommers phases (L. Brown 1974; Lehmer 1954, 1971; Tiffany 2007a; Toom 1992, 1992b; Henning and Toom 1992; see also Winham and Calabrese 1998). The region forms the northern extent of the main Initial Middle Missouri culture in South Dakota. Important Initial Middle Missouri village sites in the Bad-Cheyenne region include: La Roche (39ST9), Fay Tolton (39ST11), H.P. Thomas (39ST12), Breedon (39ST16), Cattle Oiler (39ST19/39ST224), Gillette (39ST23), Dodd (39ST30), Hallen I (39ST37), Hallen II (39ST38), Antelope Creek (39ST55), Sommers (39ST56), 39ST91, Ketchen (39ST223), Eagle Feather (39ST228), Stony Point (39ST235), Durkin (39ST238), and Huston Ranch Village (39HU211). Sommers, Ketchen, Durkin, and a late component at Cattle Oiler seem to represent later Initial Middle Missouri developments (Lehmer 1971:42). Some researchers now assign Durkin, Ketchen, and Hallen I to the Extended variant (Winham and Calabrese 1998:280). Two sites in the region are listed as occupations or possible villages: 39ST89 and 39ST90. Otherwise Initial Middle Missouri materials in this region have been recorded only at village sites.

***Extended Middle Missouri.*** The Bad-Cheyenne region is the main area in South Dakota where Initial Middle Missouri and Extended Middle Missouri sites co-occur (Lehmer 1971). The region marks the southern extent of the main cluster of Extended Middle Missouri sites. While the Extended Middle Missouri of North Dakota and the Initial Middle Missouri of southern South Dakota are largely coeval, Extended Middle Missouri in north-central South Dakota occurs somewhat later and seems to represent a shift southward by the first Extended Middle Missouri cultures from their core area of central and south-central North Dakota. The Extended Middle Missouri variant in the Bad-Cheyenne region is limited to the Thomas Riggs phase, which dates after 1200 CE (Lensink 1997; C. Johnson 2003; Tiffany 2007a). The Initial and Extended variants are similar in house type but distinct in their pottery types. Extended variant houses were somewhat larger than those of the Initial variant. Extended variant villages were larger (up to 100 houses),

with houses arranged in rows around a central plaza. While the earlier Extended Middle Missouri sites of North Dakota are not fortified, those in South Dakota have fortifications similar to those of Initial Middle Missouri sites.

Most Extended Middle Missouri variant ceramics are grit-tempered, globular jars, usually with plain and simple stamped surface treatments (Hurt 1952:22–31; Lehmer 1971:70–73, 122–123). Some have a red slip. Rim types include flared, S-shaped, castellated, and filleted. Decorations consist of punctuates, horizontal and diagonal cord impressions, and horizontal, diagonal and crosshatch incising. On some vessels, the shoulders have incised linear designs. Extended Middle Missouri ceramics lack Mississippian influences, probably because they appear after the main period of contact between the Middle Missouri and Mississippian centers.

The Extended Middle Missouri culture emerges in historic times as the Mandan and Hidatsa living along the Missouri River in North Dakota. Whether these groups can be traced back to earlier variants is not clear. Some researchers now hypothesize that the Initial Middle Missouri had regular contact with Central Plains peoples (Tiffany 2007a:12).

Major Extended Middle Missouri village sites in the Bad-Cheyenne region include: Cheyenne River (39ST1), Black Widow (39ST3), Breedon (39ST16), 39ST39, 39ST203, Glasshoff (39SL42), C.B. Smith (39SL29), Zimmerman (39SL41), Sully School (39SL7), Thomas Riggs (39HU1), Pitlick (39HU16), McKensy (39AR201), and Indian Creek (39ST15). In addition, some researchers now place Hallam I (39ST37), Ketchen (39ST223), and Durkin (39ST238) in the Extended variant (Winham and Calabrese 1998:280). Cattle Oiler (39ST224), King (39LM55), and Sommers (39ST56) apparently have both Initial and Extended pottery types; thus, their correct classification is debated (Winham and Calabrese 1998:280). The region contains only one non-village Extended Middle Missouri site, 39SL381, recorded as an artifact scatter. The social implications of Extended Middle Missouri sites coexisting with Coalescent Tradition sites in the Bad-Cheyenne region—especially as regards the Thomas Riggs site—are explored in a study (Bamforth and Nepstad-Thornberry 2007a).

***The Coalescent Tradition.*** Around 1250 CE, groups from the Central Plains began to shift north into territory occupied by the western Middle Missouri tradition villagers. This period of contact between Central Plains and Middle Missouri village cultures created a distinctive new tradition, known as the Coalescent tradition (Lehmer 1971; C. Johnson 1998). The tradition was new to the Dakotas portion of the Missouri River, but was recognizable as a transplantation of the Central Plains tradition of Nebraska and Kansas (C. Johnson 1998:308). Probably derived from Caddoan-speaking ancestral Pawnee village cultures of Nebraska, the Initial Coalescent groups built large, compact villages of round or square houses arranged randomly within or near fortification ditches and palisades. These villages were supported by gardening and bison hunting. Their core area was in the Big Bend region of South Dakota. Three Initial Coalescent sites occur in the adjacent Bad-Cheyenne region: Arzberger Village (39HU6), Breedon Village (39ST16), and possibly Gillette (39ST23). The Arzberger phase is the main Initial Coalescent unit in the Bad-Cheyenne region (Caldwell 1966c:84–85; Deetz 1965; Kivett and Jensen 1976:77–78). Some researchers postulate that Central Plains immigrants gradually replaced Middle Missouri groups between 1350 and 1500 CE, with a larger, more dispersed Extended Coalescent variant emerging along most of the Missouri River in South Dakota by 1500 (Lehmer 1971; C. Johnson 1998:308). Other researchers hypothesize a more complex scenario, with Extended Middle Missouri groups

pushing out the Central Plains groups about 1350, followed by a resurgence of Central Plains groups into the region about 1500 (C. Johnson 1998; Ludwickson 1979). In either case, the Extended Middle Missouri groups eventually relocated to North Dakota, emerging in historic times as the Mandan and Hidatsa.

As with the Middle Missouri Tradition, researchers do not agree on either the taxonomy or details of local expression of the Coalescent Tradition (C. Johnson 1998); however, that it is related to the Central Plains is not in question.

According to an old model (Bryson and Barreis 1968; Ehrenhard 1972), the Central Plains groups entered the Middle Missouri area in response to a prolonged dry period; however, more recent research has failed to confirm such a drought (Laird *et al.* 1996, 2003; Tiffany 1982). The reasons for the northward migration or expansion of Central Plains groups are not clear, but they likely involved factors other than climate.

The Extended Coalescent variant, whether developed in place from Initial Coalescent settlements or constructed by an incursion of new groups from Nebraska, quickly expanded to occupy most of the Missouri River valley in South Dakota by 1650. Their villages were somewhat smaller and more dispersed than those of the Middle Missouri Tradition and included three forms: fortified, unfortified, and villages with fortifications enforcing only a small portion of the whole. Burial places include houses, refuse areas, and cemeteries (Birkby 1962; Bass 1962, 1966; Bass and Jantz 1965). Researchers agree that the Extended Coalescent Tradition primarily represents the ancestors of the historic Arikara (e.g. Deetz 1965; Hoffman 1977; Grange 1981; Owsley *et al.* 1981; Johnston 1982); however, the ancestors of other historic groups probably also are represented at Coalescent Tradition sites, including the Mandan, Hidatsa, Cheyenne, and Pawnee (C. Johnson 1998:309). From 1500–1550 CE, the number of Extended Coalescent villages in the Big Bend region increased, but the number dropped off after 1500 CE, perhaps because the smaller villages relocated to form the large Sully Site (39SL4) (C. Johnson 1998:329). Extended Coalescent village sites in the Bad-Cheyenne region include: McClure Ranch (39HU7), Pierre Village (39HU77), Little Pumpkin (39HU97), Medicine Knoll (39HU202), 39HU208, Three Sisters (39HU219), Sully (39SL4), 39SL15, Cheyenne River (39ST1), Black Widow (39ST3), La Roche (39ST9), H.P. Thomas (39ST12), Breedon (39ST16), Fort Bennett (39ST26), 39ST39, Leavitt (39ST215), Buffalo Calf (39ST218), Lame Deer (39ST219), Prairie Owl (39ST222), and 39ST232. Site 39ST175 is listed as an occupation rather than a village. Reflecting the more dispersed settlement pattern of this period, Extended Coalescent materials have also been found in several sites recorded as artifact scatters: 39HU28, 39HU44, 39ST35, 39ST117, 39ST124, and 39ST249.

By the end of the Extended Coalescent period at 1650 CE, European manufactured goods, weapons, and epidemic diseases had reached the groups living along the Missouri River in South Dakota. Horses arrived via trade from the Southwest about 1700. The first non-native explorers reached the area about 1730. At this time, the Arikara occupied most of the river in South Dakota, the Mandans having resettled farther upstream in North Dakota. With high demand for maize, arms, horses, and metal tools, the river villages prospered by managing the exchange of these products with the hunting-foraging groups that surrounded them. Soon after, however, a series of severe epidemics decimated the Plains Village settlements. By 1780, the Arikaras, too, had shifted northward, first to the mouth of the Grand River and then near the Mandan settlements at the Knife

River in the 1830s. These semi-sedentary farming communities combined in fortified villages to provide protection from their now well-mounted nomadic enemies. They eventually settled in two villages, Like-a-Fishhook and Fort Clark, after the devastating smallpox epidemic of 1837. By 1862, the Arikara had permanently joined the Mandan and Hidatsa at Like-a-Fishhook. Little Pumpkin village may prove important in understanding the trajectory of Coalescent culture. While primarily associated with the Extended Coalescent, the site also contained Initial Coalescent and Post-Contact Coalescent ceramics (Berg and Bozell 1997). As the Arikara abandoned the Missouri River in the Big Bend and Bad-Cheyenne regions, eventually leaving South Dakota altogether, bands of Lakotas and Yankton-Yanktonais moved across the river and expanded throughout most of the Dakotas.

The Bad-Cheyenne and Big Bend regions were the core of Coalescent tradition territory from its onset (Lehmer 1971; Ahler 1975a; C. Johnson 1998). The rich alluvial sediments of the bottomlands proved well suited for large scale maize farming. The Arikara developed a lucrative trade in maize with non-farming groups (Orser 1984)—their nickname and sign in the Plains Indian sign language both signify “corn eaters.” They continued to maintain villages and fields in the Bad-Cheyenne region well into the post-contact period. Post-Contact Coalescent sites in the Bad-Cheyenne region include several villages: Oahe (39HU2), Mush Creek (39HU5), 39HU42, Amos Shields (39HU220), Sully (39SL4), Lyman (39SL5A), Cheyenne River (39ST1), Buffalo Pasture (39ST6), H.P. Thomas (39ST12), Phillips Ranch (39ST14), Indian Creek (39ST15), Breedon (39ST16), Fort George (39ST17), Dodd (39ST30), Lower Antelope Creek (39ST106), Ghost Lodge (39ST120), Sitting Buzzard (39ST122), Stony Point (39ST235), and Johnston (39ST244). No non-village Post-Contact Coalescent sites are recorded in the region, except a cemetery (39ST216) disturbed by earth-moving equipment during work on the Oahe Dam. This contained the remains of at least 25 individuals.

***Other Protohistoric.*** During the late 1700s and early 1800s, the Arikara, Mandan, and Hidatsa began to consolidate in a few large villages along the Missouri in North Dakota. These nations had been decimated by a series of epidemics, the most devastating coming in 1837. The Cheyenne lived for a time with the river tribes but soon adopted a more nomadic life way and moved southwest into the Black Hills country, following the Missouri and then the Cheyenne River. The Lakota bands expanded westward across the Missouri, increasing in numbers and military might as they, too, transformed into full-time bison hunters. When Lewis and Clark entered the Bad-Cheyenne region in 1804, they camped at the mouth of the Bad (Teton) River, in hopes of engaging the Lakota in talks. The Lakota leaders refused a meeting and attempted to deter the expedition from proceeding upriver (DeVoto 1953:33–44). The Lakota were by then in a position to exert considerable influence on the river-based trade network. It is likely that many of the stone circle sites found in the region are the remains of Lakota tipi camps from the period immediately before they had access to large amounts of Euroamerican trade goods.

***Historic.*** The historic era in the Bad-Cheyenne region begins with the establishment of fur-trading posts in the early 1800s. Despite the recalcitrance of the Lakota regarding Lewis and Clark’s visit in 1804, the US government succeeded in getting most of the Indian nations then living along the Missouri to agree in 1825 to permit white traders to set up operations in the region. From that time forward, the history of the region was one of increased white-Indian contact and interdependence. Smithsonian Institution-River Basin Surveys archaeologists excavated the ruins of some of these posts in the 1950s, including Fort Pierre II (39ST217), Fort Sully I (39HU52),

Fort Sully II (39SL45), Fort George (39ST202), and Fort Bennett (39ST26) (C. Miller 1960; G. Smith 1960, 1968; Carlson 1984). The exact location of another early trading post, Fort LaFrambois (39ST83) is in question. This trading post was in operation from 1818–1821 and was replaced by Fort LaFrambois II (39ST82) in 1862. The latter has not been systematically studied.

Fort Pierre Chouteau (39ST237) was a prominent fur trade post, and later a military fort. Constructed in 1832 to replace the short-lived Fort Tecumseh (1822–1832), the fort represents one of the earliest substantial non-Indian structures in the region and an important point of contact between native and Euroamerican cultures. The fortified fur post was sold to the military and remodeled in 1855. The military abandoned the site in favor of Fort Randall in 1857 (Fosha 2000). The site was the focus of a series of volunteer excavation projects (Ruple 1990; Fosha 1997b, 1998, 1999, 2000). These identified the fortification walls, the bourgeois house, the military hospital, several other buildings, and a sawmill (Fosha 1998, 1999, 2000).

Fort Sully I (39HU52) was a military post for a little more than two years during and after the Dakota Conflict of 1862, after which it became a trading post for the Northwestern Fur Company (D. Williams 2005). The remains of this early post have been destroyed partially by construction and maintenance of recreational facilities, including a shelter belt, but nevertheless the site retains many intact features and artifact deposits. Test excavation there in the 1970s showed that parts of the site still contained significant archaeological deposits, including structural remains, features, and artifacts (Ruple 1984). Subsequent study of the site confirmed this (Toom and Steinacher 1980; Archaeological Research Center site records from 2003 reevaluation; D. Williams 2005; Ferry *et al.* 2007); however, no systematic attempt has been made to protect or excavate the site. A GIS analysis of historic maps, combined with metal detecting, indicates that features corresponding to the palisade, interior buildings, and outbuildings may have survived the modern recreation development activities (D. Williams 2005).

Fort Sully II (39SL45) was constructed in 1866 to replace the deteriorating Fort Sully I. This fort was much larger and remained a military post throughout its three years of occupation. Although many of its 63 buildings were sold and moved off site in 1894, and other portions have been damaged by wave action from Lake Oahe, much of the site remains intact (Archaeological Research Center site records from 2003 reevaluation). Features still present as of 2003 include scatters of brick and foundation stones, foundations, mounds of rock, a concrete monument base, the base of a tower, and artifact scatters. Although minor excavations were done there (G. Smith 1960; Carlson 1984), no attempt has been made to fully document and study this site.

Two other forts are known from the Bad-Cheyenne region. Fort Bennett (39ST26) was recorded during Smithsonian Institution-River Basin Surveys work in the 1940s. In the 1980s a small portion of the site was excavated (Carlson 1984). Surface survey located a concentration of early Euroamerican artifacts including gunflints, clay pipes, dish fragments, trade beads, and building material near Fort Pierre Chouteau. This may be the remains of Fort Galpin (39ST292), a fortified post that replaced Fort Pierre Chouteau as the main trading station after the latter was sold to the military in 1855 (Fosha 1999). Other early contact-era sites expected in the region are military posts, steamboat landings, and wagon and stagecoach trails.

Sites related to the establishment of Indian reservations include administrative buildings, cabins, camps, and military facilities. The next period of history is represented by the sites of

Indian allotment-based farmsteads, reservation hamlets, homesteads, rural schools, towns, and cemeteries. The reservations in this area trace their roots to the trading posts established by French, American, and Anglo-Scots fur traders in the early 1800s. Treaties involving regional Indian nations and the US government signed in 1825 and 1851 sought to establish friendly relations that would permit non-Indians freedom of travel and trade in the region. The 1868 Fort Laramie Treaty established the Great Sioux Reservation for the unrestricted use of the Lakota, Yankton, Dakota, and their Arapaho and Cheyenne allies. Originally this reservation encompassed all of western South Dakota, plus the area now designated as Crow Creek Reservation, and set aside the Powder River basin as unceded hunting territory. Economic depression in the US and gold strikes in Montana and the Black Hills soon made the 1868 treaty undesirable for the US. The Black Hills were excluded from the reservation in 1877, following the Black Hills gold rush and a campaign of unabashed coercion of the Lakota leaders on the part of US government representatives.

Little work has been done at sites representative of this period in the Bad-Cheyenne region. Breeden Village is a large, complex village site with Initial Middle Missouri, Extended Middle Missouri, Initial Coalescent, and Post-Contact Coalescent components. The site also had an occupation attributed to historic Lakota (Lehmer 1971; Brown 1974). Other historic Lakota sites listed in the state site inventory include 39HU41 (grave), 39HU96 (farmstead), 39HU218 (dugout), 39HU220 (cabin), 39HU226 (burial), 39ST97 (farmstead), 39ST114 (farmstead), 39ST116 (farmstead), 39ST227 (graves), 39ST298 (farmstead and cemetery).

The next period would be represented by sites associated with cattle drives from the era of the “cow capitalists” and the somewhat later, but overlapping, homestead era sites. No cattle industry related sites have been studied in the region, but two homestead sites in the region have been test excavated (Ferry *et al.* 2007). Dating to 1891 and 1893, these sites contained foundation remains and depressions indicating the locations of wells or outbuildings, but each has been disturbed by unspecified earth-moving activities.

## Sites by Period

*Paleoindian:* 39ST185, 39ST228 (Agate Basin)

*Middle Archaic:* 39HU102, 39HU174 (McKean), 39SL104, 39ST321 (McKean/Duncan)

*Late Archaic:* 39HU174 (Pelican Lake), 39HU194, 39HU304, 39SL357 (Pelican Lake, Besant), 39ST139

*Unspecified Archaic:* 39SL135, 39ST202

*Late Archaic or Late Prehistoric:* 39ST126

*Late Prehistoric:* 39SL201, 39SL270, 39ST183, 39ST186, 39ST257, 39ST261, 39ST278, 39ST326 (Avonlea)

*Woodland:* 39HU48, 39HU102, 39SL286, 39SL312, 39ST9/39ST69, 39ST48?, 39ST80, 39ST120?, 39ST122, 39ST225, 39ST239, 39ST318

*Great Oasis:* 39ST239?

*Initial Middle Missouri:* 39ST9/39ST69, 39ST11, 39ST12, 39ST16, 39ST19, 39ST23/39ST66, 39ST30, 39ST37, 39ST38, 39ST45, 39ST55, 39ST56, 39ST74, 39ST88, 39ST89, 39ST90, 39ST91, 39ST214, 39ST223, 39ST224, 39ST228, 39ST235, 39ST238

*Extended Middle Missouri:* 39AR8, 39AR201, 39AR210, 39HU1, 39HU16, 3SL7, 39SL12, 39SL13, 39SL29, 39SL41, 39SL42, 39SL381, 39ST1, 39ST3, 39ST15, 39ST16, 39ST37, 39ST39, 39ST56, 39ST203, 39ST238

*Initial Coalescent:* 39HU6, 39HU97, 39HU286, 39ST16, 39ST23, 39ST98, 39ST214, 39ST235

*Extended Coalescent:* 39AR2, 39AR4, 39AR5, 39AR7, 39AR203, 39HU7, 39HU15, 39HU23, 39HU28, 39HU29, 39HU39, 39HU44, 39HU45, 39HU46, 39HU47, 39HU61, 39HU63, 39HU77, 39HU97, 39HU202, 39HU203, 39HU204, 39HU205, 39HU206, 39HU208, 39HU210, 39HU219, 39SL2, 39SL4, 39SL7, 39SL8, 39SL9, 39SL10, 39SL12, 39SL13, 39SL14, 39SL15, 39SL16, 39SL17, 39SL18, 39SL20, 39SL21, 39SL22, 39SL23, 39SL24, 39SL26, 39SL29, 39SL30, 39SL31, 39SL34, 39SL36, 39SL37, 39SL40, 39SL51, 39SL55, 39SL56, 39SL202, 39ST1, 39ST2, 39ST3, 39ST7, 39ST8, 39ST9/39ST69, 39ST10, 39ST12, 39ST13, 39ST16, 39ST18, 39ST21, 39ST23, 39ST26, 39ST35, 39ST39, 39ST42, 39ST43, 39ST44, 39ST45, 39ST49, 39ST117, 39ST122, 39ST124, 39ST175, 39ST215, 39ST216, 39ST218, 39ST219, 39ST222, 39ST223, 39ST224, 39ST228, 39ST231, 39ST232, 39ST236, 39ST249, 39ST282, 39ST300, 39ST318

*Post-Contact Coalescent:* 39HU2, 39HU5, 39HU22, 39HU24, 39HU42, 39HU97, 39HU174, 39HU220, 39SL1, 39SL3, 39SL4, 39SL5A, 39SL13, 39SL19, 39SL28, 39ST1, 39ST5, 39ST6, 39ST12, 39ST14, 39ST15, 39ST16, 39ST17, 39ST25, 39ST30, 39ST33, 39ST45, 39ST50, 39ST106, 39ST120, 39ST122, 39ST203, 39ST215, 39ST216, 39ST235, 39ST244

*Unspecified Plains Village:* 39HU3, 39HU4, 39HU8, 39HU14?, 39HU15, 39HU16, 39HU23, 39HU26, 39HU27, 39HU29, 39HU30, 39HU31, 39HU32, 39HU33?, 39HU34?, 39HU37?, 39HU38?, 39HU39?, 39HU45?, 39HU46, 39HU102, 39HU114, 39HU131, 39HU132, 39HU174, 39HU218, 39HU234, 39SL1, 39SL2, 39SL3, 39SL8, 39SL9, 39SL13, 39SL14, 39SL16, 39SL18, 39SL19, 39SL20, 39SL21, 39SL22, 39SL23, 39SL24, 39SL25, 39SL26, 39SL27, 39SL28, 39SL29, 39SL33, 39SL34, 39SL36, 39SL50, 39SL51, 39SL55, 39SL56, 39SL57, 39SL204, 39SL312, 39ST2, 39ST3/39ST4, 39ST5, 39ST7, 39ST8, 39ST10, 39ST13, 39ST18, 39ST21, 39ST24, 39ST25, 39ST26, 39ST29, 39ST33, 39ST42, 39ST44, 39ST45, 39ST46, 39ST50, 39ST67, 39ST187, 39ST201, 39ST203, 39ST220, 39ST221, 39ST225, 39ST226, 39ST229, 39ST230, 39ST231, 39ST233, 39ST239, 39ST243, 39ST294

*Unspecified Woodland or Plains Village:* 39ST36, 39ST40, 39ST51, 39ST169, 39ST236

*Protohistoric:* 39HU48, 39ST16, 39ST20, 39ST26, 39ST29, 39ST52, 39ST83 (post), 39ST186, 39ST212, 39ST217 (post)

*Historic Farmsteads.* 39HU91, 39HU96, 39HU102, 39HU130, 39HU172, 39HU198 (irrigation, farmstead), 39HU218, 39HU220, 39SL5, 39SL64, 39SL65, 39SL66, 39SL69, 39SL70, 39SL71, 39SL76, 39SL82, 39SL83, 39SL84, 39SL86, 39SL87, 39SL88, 39SL89, 39SL88, 39SL89, 39SL90, 39SL97, 39SL99, 39SL112, 39SL118, 39SL119, 39SL120, 39SL123, 39SL124, 39SL127, 39SL128, 39SL131, 39SL132, 39SL133, 39SL138, 39SL139, 39SL140, 39SL141,

39SL142, 39SL145, 39SL148, 39SL156, 39SL157, 39SL161, 39SL170, 39SL171, 39SL172, 39SL178, 39SL180, 39SL185, 39SL206, 39SL211, 39SL214, 39SL231, 39SL244, 39SL245, 39SL261, 39SL271, 39SL277, 39SL280, 39SL293, 39SL353, 39ST87, 39ST93, 39ST97, 39ST114, 39ST115, 39ST111, 39ST132, 39ST134, 39ST135, 39ST164, 39ST234, 39ST247, 39ST248, 39ST298, 39ST309, 39ST327, 39ST329, 39ST343, 39ST387, 39ST435

*Other Historic Sites* (artifact scatters, unless otherwise noted). 39HU38, 39HU41 (burial), 39HU52 (fort), 39HU97, 39HU120 (foundation), 39HU134 (foundation), 39HU135 (foundation), 39HU143 (foundation), 39HU148 (foundation), 39HU155 (depression), 39HU193 (foundation), 39HU209 (cemetery), 39HU226 (burial), 39HU249 (depression), 39HU256, 39HU259 (depression), 39HU260 (depression), 39HU261 (depression), 39HU262 (railroad depot), 39HU274 (depression), 39HU279, 39HU280 (foundation, depression), 39HU288 (railroad depot), 39HU295–39HU298 (bridge supports), 39HU301, 39HU305, 39HU315, 39HU316 (Civilian Conservation Corps causeway), 39HU317 (Civilian Conservation Corps gateway), 39HU318 (youth camp), 39HU319 (building), 39HU321 (scout cabin), 39HU323 (dump), 39HU324 (youth camp), 39HU325 (golf clubhouse), 39HU326, 39HU327 (swimming beach), 39HU328 (picnic shelters), 39HU329 (picnic shelters), 39HU330 (campground), 39HU331 (road), 39HU346 (dump), 39HU2003 (railroad), 39HU2073 (railroad), 39HU2113 (highway), 39HU2200 (ditch complex), 39SL32 (townsite), 39SL45 (fort), 39SL67 (foundation), 39SL68 (foundation, dump), 39SL74 (cemetery), 39SL80 (school), 39SL93 (foundation), 39SL110 (townsite), 39SL121 (depression), 39SL126 (burial), 39SL169 (depression, dump), 39SL176 (depression), 39SL260 (foundation), 39SL233 (school), 39SL260 (foundation), 39SL262 (depression), 39SL263 (depression), 39SL267 (foundation), 39SL273 (foundation), 39SL276 (depression), 39SL284 (school), 39SL310 (fishing resort), 39SL352 (school), 39SL363 (depression), 39SL367 (depression), 39SL368 (depression), 39SL369 (depression), 39SL372 (depression), 39SL374 (cairn), 39SL375 (dump), 39SL382 (monument), 39SL397 (depression), 39SL2003 (railroad), 39ST16, 39ST17 (post), 39ST26 (post), 39ST49 (burial), 39ST54 (burial), 39ST60 (burial), 39ST81 (foundation), 39ST82 (post), 39ST83 (fort), 39ST89, 39ST92 (depression), 39ST94 (depression), 39ST95 (depression), 39ST96 (depression), 39ST98 (dump), 39ST99 (depression), 39ST100 (foundation), 39ST113 (post office), 39ST117, 39ST118 (cabin), 39ST123, 39ST125 (cabin), 39ST133 (depression), 39ST136, 39ST137, 39ST138 (depression), 39ST167 (cabin), 39ST168 (cabin), 39ST170 (depression), 39ST171 (cabin), 39ST172, 39ST176 (dump), 39ST182 (depression), 39ST188 (dump), 39ST193, 39ST202 (post), 39ST217 (fort), 39ST222, 39ST223, 39ST227 (cemetery), 39ST235, 39ST237 (fort), 39ST269 (burial), 39ST273 (depression), 39ST281 (cemetery), 39ST290 (school), 39ST292 (fort?), 39ST301 (depression), 39ST316 (foundation, earthworks), 39ST318 (dump), 39ST319 (dump), 39ST333, 39ST337 (stage station), 39ST342 (depression), 39ST350 (depression), 39ST373, 39ST386, 39ST388, 39ST401, 39ST407, 39ST409, 39ST411 (trap), 39ST412, 39ST430, 39ST436, 39ST438 (foundation), 39ST439 (burial), 39ST2003 (railroad), 39ST2049 (railroad), 39ST2151 (road), 39ST2266 (road)

## **Prehistoric and Historic Themes**

*Sacred Sites, Traditional-Use Sites, and Burials.* Mandan and Arikara people recognize the village sites of the Bad-Cheyenne region as the homes of their ancestors. Some of these villages contain graves and cemeteries. The Bad River takes its name from a Dakota term, referring to the loss of an entire village in a flash flood when an ice-dam broke in early spring (Bordeaux 1929:186; E. Deloria n.d.:416; Ehrensperger 1941:14; Mattison 1954:18). This event is recorded in the

Lakota winter counts for 1826. An entire Yanktonai camp of 30 lodges was washed away in a spring flood on the Missouri (Mallery 1886). Fur traders and explorers called the Bad River the Teton River, because the western, or Teton, Sioux (Lakota) lived there when they first crossed the Missouri (Warren 1922:68). The Cheyenne River was known in Lakota and Cheyenne as the good or beautiful river—a name it retains in French for its northern branch, the Belle Fourche (Bordeaux 1929:186; Hyde 1968:16; Odell 1942:173; Petter 1915:921; Robinson 1912:273; Warren 1922:68).

An important Native American sacred site in this region is Medicine Knoll (39HU70). A huge boulder effigy of a snake and numerous vision quest sites extend along the top of this hill (Todd 1886:209–210; V. Deloria 1987:93; E. Deloria 1967; Howard 1972:293; T. Lewis 1889:161–162; Helmick 1897). Medicine Knoll Creek or Medicine Creek is called Wiyopahawakan, East Medicine Knoll, in Dakota and Lakota, in reference to the sacred butte (Mattison 1954:269). Another Medicine Butte near Reliance also remains a sacred place for Native Americans (Ehrensperger 1941:9; Howard 1972:293)

Another important cultural site is marked with a long line of rocks leading up to the outline of a turtle (39HU74). According to tradition, Lakota warriors created these to commemorate the death of a brave Arikara enemy who died there (Ehrensperger 1941:11; Hunt 1974:155; Lewis 1889:162–163; Over 1941:50–51; T. Riggs 1904:108–109; Robinson 1904:37; South Dakota Writers Project 1941:130–131).

Mush Creek in Hughes County is a translation of *Wozapi owaste*, or Good for Mush, because the chokecherries used in *wozapi* were abundant there (Howard 1972:299). Another name for this creek, *Padani Tiyohé*, refers to the old Arikara earth lodges there (Howard 1972:299). Okobojo Creek takes its name from a Dakota/Lakota term for “planting in the spaces,” perhaps referring to corn gardens there (Ehrensperger 1941:48; Mattison 1954:40). Another traditional name for this creek is *Howozu*, meaning where reeds grow (E. Deloria n.d.:545); this likely refers to the cultivation of sweetflag (*Calamagrostis acorifolia*) there. This plant had a variety of medicinal applications and is still found in many local Native American medicine cabinets today (Kindscher 1992:24–25). Lance Creek takes its name from a Dakota term, *Wahukeza Wakpala*, because a war lance was found there (Ehrensperger 1941:39). At this place, Leaf performed a Bear Dreamer dance that enacted how his vision had given him great healing powers (Buechel and Manhart 1998:406).

This area contains other places with historic significance and ongoing traditional use. The reader is referred to the Tribal Historic Preservation Offices or cultural offices of the Lakota tribes of South Dakota, the Yankton tribe of South Dakota, Three Affiliated Tribes of North Dakota, and the Northern Cheyenne Tribe of Montana for more information.

***Fur Trading Posts and Military Forts.*** Military forts and fur trade posts are concentrated along the Missouri River shores. The location of some historically recorded forts are unknown, and some known forts have been inundated by Lake Oahe. For a list of sites investigated by archaeologists, see the discussion under Historic Contexts: Historic, above. For a survey of posts and forts on the Missouri River in South Dakota, the reader is referred to Kapler 1987.

*Stone Circles, Cairns, and Alignments.* The Bad-Cheyenne area contains many stone alignments, including the large boulder effigies discussed above in the section on sacred sites. As surface features, such sites are both easily accessible to archaeologists and difficult to study using the traditional methods of excavation. Alignments in the area include effigies (outlines of snakes, turtles, and rectangles), as well as a large number of sites described simply as “mosaics”—that is, pavements or outlines that do not form recognizable figures. There is little doubt that the effigies were made for religious and/or commemorative purposes; however, the purpose of the mosaics is not known at present (Sundstrom 2006).

Stone circle sites are common in the Bad-Cheyenne region. It appears that most of these are the former locations of tipi camps; however, it is clear that not all stone circles resulted from anchoring tipis, as the discussion of stone circles in the Subcontexts section of this report explains. One stone circle site with several cairns, 39HU173, was test excavated and found to contain significant subsurface deposits, including chipped stone tools, chipping debris, and bone. Site 39ST175 also had stone circles and cairns exposed on the surface. This site also contained buried archaeological deposits, including a hearth, ceramics, chipped stone tools, and chipping debris. The limited excavations at these sites suggest that at least some stone circles mark the location of base camps. Until more such sites are explored, their function and information potential will remain an unknown. The function of cairns is even more variable and ambiguous (see discussion in Subcontexts section).

Stone circle, cairn, and alignment sites in the Bad-Cheyenne region have received little attention from archaeologists beyond basic recording and mapping. A more comprehensive treatment of their historic significance to the region awaits more detailed studies, including excavation of a sample of these features.

*Stone Circle Sites:* 39HU48, 39HU70, 39HU151, 39HU153, 39HU156, 39HU169, 39HU171, 39HU173, 39HU175, 39HU177, 39HU186, 39HU191, 39HU192, 39HU248, 39HU258, 39HU268, 39HU276, 39SL91, 39SL102, 39SL103, 39SL106, 39SL109, 39SL113, 39SL117, 39SL141, 39SL150, 39SL152, 39SL153, 39SL154, 39SL159, 39SL160, 39SL165, 39SL166, 39SL167, 39SL173, 39SL186, 39SL188, 39SL208, 39SL215, 39SL226, 39SL236, 39SL241, 39SL242, 39SL243, 39SL248, 39SL272, 39SL275, 39SL276, 39SL280, 39SL289, 39SL292, 39SL296, 39SL299, 39SL300, 39SL315, 39SL316, 39SL366, 39SL370, 39SL371, 39SL386, 39SL387, 39SL390, 39SL392, 39SL394, 39SL395

*Cairn Sites:* 39HU157, 39HU162, 39HU164, 39HU173, 39HU176, 39HU180, 39HU185, 39HU195, 39HU276, 39HU287, 39SL21, 39SL46, 39SL96, 39SL247, 39SL259, 39SL274, 39SL289, 39SL298, 39SL300, 39SL301, 39SL302, 39SL307, 39SL308, 39SL309, 39SL319, 39SL320, 39SL324, 39SL325, 39SL326, 39SL337, 39SL338, 39SL339, 39SL340, 39SL341, 39SL342, 39SL343, 39SL344, 39SL345, 39SL346, 39SL347, 39SL348, 39SL349, 39SL350, 39SL351, 39SL373, 39SL374, 39SL383, 39SL384, 39SL385, 39SL389, 39SL391, 39SL393, 39SL395, 39ST98, 39ST112, 39ST160, 39ST166, 39ST175, 39ST181, 39ST195, 39ST253, 39ST268, 39ST279, 39ST330

*Boulder Effigy Sites:* 39HU66 (snake, turtle), 39HU70 (snake), 39HU74/39HU201 (turtle), 39HU80 (snake), 39SL94 (medicine wheel or turtle), 39SL143, 39SL163 (human), 39SL181 (medicine wheel), 39SL184 (bird), 39SL213 (possible animal effigy), 39SL246 (horse)

*Alignment Sites Described as Mosaics, Lines, Rings, or Rectangles:* 39HU70, 39HU251, 39HU252, 39HU253, 39HU276 (line of cairns), 39SL35, 39SL91, 39SL92, 39SL98, 39SL102, 39SL103, 39SL106, 39SL109, 39SL113, 39SL136, 39SL143, 39SL146, 39SL147, 39SL149, 39SL151, 39SL158, 39SL162, 39SL165, 39SL167, 39SL168, 39SL175, 39SL177, 39SL179, 39SL183, 39SL186, 39SL205, 39SL208, 39SL213, 39SL227, 39SL228, 39SL229, 39SL230, 39SL232, 39SL236, 39SL243, 39SL251, 39SL252, 39SL276, 39SL308 (cairn with line), 39SL309 (two cairns and line), 39ST330 (two cairns)

## **Archaeological Potential**

The Middle Missouri is recognized worldwide as an important archaeological district. Here a unique pattern of horticulture and bison-hunting developed to support semi-permanent villages. The accomplishments of Plains Village groups in horticulture and trade are prominent among pre-contact American cultures. Archaeological materials from the area have also been important in understanding the social dynamics of conflict and warfare. Many human remains were removed from sites in the area in pre-NAGPRA times; these were important in studies of demographics, migrations, and health. Understandably, the descendants of Plains Village groups, as well as other Native Americans, today object to removal of human remains from their resting places. If human remains are encountered today, they generally will be left in place or immediately reburied in a place designated by descendant communities. This means that such studies are not likely to take place in the future. The rich archaeological record of the area, however, offers many other sources of information on the social dynamics of the Plains Village pattern. Earlier sites are likely to occur in the area, as well, but few have been studied thus far because they tend to be very deeply buried within the higher river terraces.

The archaeology of the Plains Village pattern sites is supported by a rich ethnographic literature compiled by explorers, traders, missionaries, and scholars who were privileged to live with and learn from the Mandan, Hidatsa, and Arikara people.

That said, the region's archaeological potential was greatly damaged by the construction and filling of huge hydroelectric dams and reservoirs along the Missouri River. This destroyed or inundated many of the villages and trading post sites. Those that remain are continually being lost to erosion from wave action, from construction and maintenance of recreational facilities associated with the reservoirs, and from looting. Many sites remain to be adequately studied.

## **Management Considerations**

The US Army Corps of Engineers has retained responsibility for cultural resources on lands along the Missouri River transferred to the State of South Dakota. The US Army Corps of Engineers also retains responsibility for cultural resources on lands along the Missouri River located within the exterior boundaries of the Standing Rock Sioux Tribe, Crow Creek Sioux Tribe and the Yankton Sioux Tribe. . The reader is, therefore, referred to the US Army Corps of Engineers management documents for a discussion of cultural resources issues and policies in the Bad-Cheyenne region (Latham 2002; US Army Corps of Engineers 2004). Relatively little is known of the archaeological potential and management concerns outside of the lands for which the US Army Corps of Engineers has responsibility for cultural resource management. The areas away from the Missouri River have not been surveyed or otherwise studied except incidentally to

construction or agricultural projects. Cultural resource management in these portions of the Bad-Cheyenne region should focus on gathering basic data on site distribution, density, type, cultural affiliation, and age.

*Sites Listed in the National Register of Historic Places:* 39HU5, 39HU6, 39HU7, 39HU52, 39HU66, 39HU74/39HU201, 39HU96, 39HU102, 39HU114, 39HU202, 39HU208, 39HU209, 39HU218, 39HU219, 39HU220, 39HU226, 39ST16, 39ST17, 39ST55, 39ST56, 39ST90, 39ST91, 39ST93, 39ST94, 39ST95, 39ST96, 39ST97, 39ST98/39ST243, 39ST101, 39ST102, 39ST106, 39ST202, 39ST217, 39ST218, 39ST219, 39ST220, 39ST221, 39ST222, 39ST223, 39ST224, 39ST225, 39ST226, 39ST227, 39ST228, 39ST229, 39ST230, 39ST232, 39ST233, 39ST234, 39ST235, 39ST237, 39ST238, 39ST239

## **Region 13: Big Bend**

### **Setting**

The Big Bend archaeological region is in central South Dakota within the Missouri Trench physiographic division. It takes in all of Brule and Buffalo counties, most of Lyman County, and portions of Jerauld, Jones, Aurora, Hughes, Hyde, and Hand counties. The region is named for the Big Bend of the Missouri, a large, nearly closed loop in the course of the river.

The Missouri Trench is a deep, narrow valley that extends from central North Dakota to south-central South Dakota. During the Illinoian glacial advance, about 700,000 years ago, the Laurentide ice sheet advanced into what is now South Dakota, blocking off east-flowing rivers and diverting them to the south-southeast to form the Missouri River (Flint 1955).

The Missouri Trench cuts through thick beds of Cretaceous Pierre shale and Niobrara marl (calcareous mudstone). High, remnant Pleistocene alluvial strath (bedrock) terraces line portions of the valley. These are capped by glacial till and outwash deposits. In places Late Pleistocene and Holocene alluvial, lacustrine, and aeolian deposits cap the glacial outwash or form lower terraces. A loess deposit capping the Missouri River terraces in this region is referred to as the Oahe formation.

The Missouri Trench is approximately 10 miles wide, with a floodplain about a mile in width. Within this narrow valley, the river channel tends to shift from side to side, undercutting the bluffs and terraces and forming point bars on the inner side of meanders and sometimes in mid-channel. The bluffs rise about 120 meters above the floodplain. Numerous deep gullies dissect the bluffs, forming a rough topography referred to as the Missouri Breaks. The valley sides vary from steep, cliff-like exposures of Pierre shale to more gentle step-and-riser terrain where Holocene terraces are preserved between the river channel and the higher bluffs.

The Missouri Trench cuts through the middle of the Big Bend archaeological region. The Missouri Coteau lies to the east of the trench. This is a broad, low, gently undulating plateau lying between the Missouri and the James River. It comprises Pierre shale and Ogallala sandstones overlain by a thick layer of till dating to the Wisconsin glaciation. The Missouri Coteau contains several sets of more prominent hills: the Orient, Wessington, Ree, and Bijou hills. Two areas of low relief cut across the Missouri Coteau from east to west: the Great Ree Valley and the Crow

Creek-Smith Creek Valley. These are remnants of pre-Wisconsinan river valleys. The Missouri Coteau contains a few internal lakes and marshes but largely drains into the Missouri River on the west and the James River on the extreme eastern margin. On the west, the Pierre Hills border the Missouri Trench. This area comprises rounded, rolling hills and valleys comprised of exposed Pierre shale or thin Pleistocene till and Pleistocene and Holocene loess atop the weathered shale bedrock. A few higher buttes of resistant remnants of Tertiary sandstones dot the area west of the Missouri Trench, including the Iona Hills and Medicine Knoll.

The Missouri River valley contains a complex of five terraces, designated MT-4 to MT-0 (the floodplain prior to artificial damming of the river). These terraces form a series of broad steps on which most of the region's archaeological sites are found. The highest (MT-4) terrace is adjacent to the Pierre Hills. This broadly sloping remnant surface pre-dates the formation of the Missouri Trench (Coogan 1987:53). The terrace rises approximately 91 meters above the Missouri River (as it existed before dam construction). It is a bedrock, or strath, terrace of Pierre Shale covered by glacial outwash and till and dissected by meltwater streams. The terrace grades gradually into the upland hills. The MT-3 is also a strath terrace cut into the Pierre Shale. It rises about 60 meters above the river. Like the MT-4, it is a broadly sloping terrace. Its lower edge is typically eroded, exposing areas of Pierre Shale bedrock. In places it is mantled by glacial deposits, including some glacial erratics. Oahe formation loess caps much of the MT-3. The most prominent terrace of the Missouri River valley is the MT-2. It is broad, flat, widespread and nearly continuous throughout the state. The terrace lies 25 to 30 meters above the river (Coogan 1987:54). The MT-2 is a cut-and-fill terrace. It cuts into Pierre Shale or Niobrara Marl, with fill of stream and lake deposits. The fill episode probably resulted from formation of a glacial ice dam during the Pleistocene raising the river level. Streams entering the Missouri River contain the same MT-2 sediments. These deposits are often capped by thick deposits of Oahe formation loess. The western loop of the Big Bend contains dormant dune fields atop the MT-2 (Coogan 1987:58). The dune sands may have derived from MT-2 sediments deposited during the high stand of the river.

The MT-1 is less prominent than the MT-2 terrace. This terrace is now almost completely inundated by the reservoirs. Before dam construction, this terrace rose 9 to 15 meters above the river. It is a cut-and-fill terrace formed in a manner similar to that of MT-2 (Coogan 1987:61–62). Downcutting of the MT-1 terrace occurred near the end of the Pleistocene and may have coincided with formation of the Leonard paleosol. The MT-1 is also typically capped by Oahe formation loess. The former valley floodplain (MT-0) consists of a broad, flat plain and islands rising 3 to 4.5 meters above the former river. In the past, during exceptionally high flood stages, the entire MT-0 terrace would be inundated. The surface deposits of the floodplain date to the Holocene and recent periods. Older Pleistocene deposits underlie these Holocene and recent sediments. Today, the floodplain is entirely covered by artificial reservoirs. The lower reaches of the Missouri River tributaries are lined by terraces that correlate to the MT-1 and MT-2 and are believed to have been formed as a result of the same ice-dam events (Coogan 1987:54, 57). These stream terraces are designated CMT-1 and CMT-2 (i.e., Creek Missouri Terrace-2).

The Oahe formation dates from 14,000 BP to recent and thus is the main locus for archaeological deposits along the Missouri Valley and areas to the west (Coogan 1987:Figure 10; Donohue 2000:21–24). The Oahe formation is primarily an eolian deposit, although colluvial sediments make up part of the formation in places. To date, alluvial or lacustrine equivalents of the Oahe formation are not defined, but the Holocene alluvium of the Missouri River and its

secondary streams clearly contain extensive archaeological remains. The Oahe formation sediments derive from the wind transport of loose sediments from exposed surfaces with little or no vegetation (Donohue 2000:20–21, 25). These wind-borne sediments accumulated in swales, basins, remnant terraces, stream valleys, and adjacent uplands. This process probably took place during periods of low precipitation. During cooler, moister climatic periods, vegetation forms on slopes, preventing erosion. During warmer, drier periods, vegetation decreases on slopes, permitting erosion. The Oahe formation varies from a few centimeters to nine meters in thickness.

Episodes of soil formation, indicating surface stability, are represented in the Oahe formation as paleosols or buried soils. The Oahe formation has been divided into four members. Paleosols found within these four members are typed as submembers (Donohue 2000:20). The members are time-stratigraphic units that are believed to reflect alternating periods of wet and cool versus warm and dry climatic episodes (Coogan 1987:17). The oldest unit is the Mallard Island member, dating to 14,000 to 13,000 BP, or terminal Pleistocene. It coincides with the last glacial advance in South Dakota. No submembers are associated with the Mallard Island, and no cultural remains have been associated with this unit in South Dakota. The Mallard Island member may partially coincide with the Peoria Loess of Kansas and Nebraska (Donohue 2000:20). Several possible archaeological sites have been reported within the Peoria formation in Nebraska. The next oldest unit is the Aggie Brown member, ca. 13,000 to 8500 BP or the Late Pleistocene-Early Holocene transition. The Aggie Brown has two submembers: a lower is a light-reddish brown silt and the upper is the Leonard paleosol. Phytolith samples from the Leonard soil indicate that it initially formed in a cool-weather tall-grass prairie, perhaps a spruce parkland setting (Donohue 2000:26–27). The climate then appears to have become warmer, supporting a mixed tall- and shortgrass regime, and finally changing back to cool-climate tall grass. The Leonard soil dates around 12,000 to 9000 BP or the Late Pleistocene-Early Holocene transition. Elsewhere in South Dakota, remains of various Paleoindian cultures—including the Goshen, Folsom, Alberta, Agate Basin and Cody complexes—have been found within the Leonard soil.

The Pick City member of the Oahe formation dates to the Middle Holocene, 8500 to 5000 BP. The Pick City member corresponds to the Altithermal, a long, dry climatic episode. This member contains no paleosols, but dune fields are thought to have formed on the uplands of western South Dakota during this time. The Pick City deposits correspond roughly in age to the Late Paleoindian and Early Plains Archaic periods. The uppermost portion of the Oahe formation is the Riverdale member. It dates to the Late Holocene, 5000 BP to present. It has Lower, Middle and Upper submembers (Clayton *et al.* 1976:6). The lower submember includes two paleosols, termed Thompson soils. Two bulk soil dates of the lower Thompson soil from West-River South Dakota fell at 4100 and 3300 BP (McFaul *et al.* 1993). These correspond to the Middle Plains Archaic period. The upper Thompson soil dates to about 2300 BP, corresponding to the Late Plains Archaic period (McFaul *et al.* 1993). The middle Riverdale submember does not contain paleosols. It is recognized as a lighter colored horizon of sediments separating the Thompson soils from the upper Riverdale submember. This submember probably dates around 2300 to 1500 BP. The upper Riverdale submember is represented by the Mandan paleosol and the modern soil horizon. The Mandan paleosol probably dates around 1100 to 1000 BP.

There are few exposures of the Oahe formation in which an entire sequence of the members and submembers are present. The most widespread deposit of the Oahe formation occurs on the MT-2, which is also the most heavily occupied topographic feature of the Missouri River valley. The Oahe formation sediments of the MT-2 have been found to contain a nearly complete, often dense, cultural sequence from Paleoindian times through the historic period. The MT-2 is the most likely landform in the state to contain archaeological deposits.



*Figure 159. Big Bend region landscape (ARC photo).*

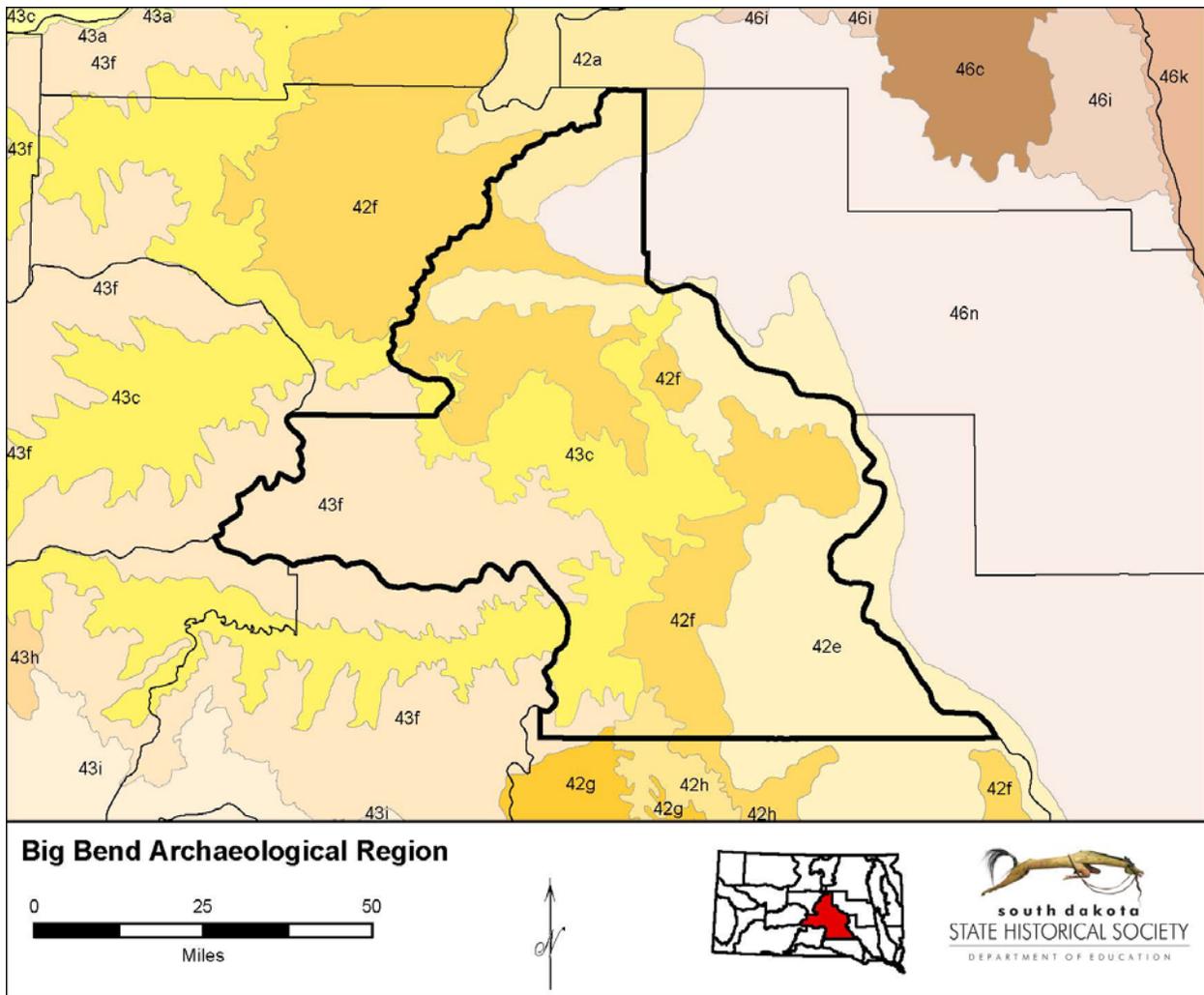


Figure 160. Ecoregions of the Big Bend archaeological region.

42: Northwestern Glaciated Plains

42e: Southern Missouri Coteau, glaciated, gently undulating topography; scattered areas of high wetland density

42f: Southern Missouri Coteau Slope, glaciated, level to rolling uplands sloping westward to Missouri River; simple stream drainage.

43: Northwestern Great Plains

43c: River Breaks, unglaciated, highly dissected hills and uplands bordering major rivers and associated alluvial plains.

43f: Subhumid Pierre Shale Plains, unglaciated, undulating plain; steep-sided, incised stream channels.

46: Northern Glaciated Plains

46n: James River Lowland, glaciated level to slightly rolling plain composed of glacial drift; dense concentrations of temporary and seasonal wetlands.

The modern climate of the area is semi-arid and temperate, characterized by cold dry winters and warm summers. Annual precipitation is about 17 inches (Schumacher 1987:1–2). Roughly 80% of the precipitation occurs between April and September. Average winter air temperature is around 20° F, and the average summer temperature is around 73° F. The record low, set in 1962, was -35 degrees; the record high, set in 1965, was 114°F. Wind speed averages 13 miles per hour across the region, with the highest wind velocities attained in the spring. Natural vegetation is mixed-grass prairie (Johnson and Nichols 1982:7) with extensive wetlands and forest in the floodplain, dominated by cottonwood, American elm and willow. Historically, the area supported a few kinds of fish and many species of waterfowl and mammals, including deer, bison, elk, pronghorn, coyote, swift fox, mountain lion, grizzly bear, bobcat, gray wolf, badger, beaver, and small mammals. Besides mammals, channel catfish, waterfowl, and freshwater mussels were important food animals in this region.

The Big Bend Archaeological region as defined here is larger than Lehmer's (1971) Big Bend Region, which included only the Missouri River trench and extended from below the mouth of the White River to just above the mouth of the Bad River.

## **Previous Archaeological Investigations**

Formal archaeological research in the Big Bend region began with W.H. Over of the South Dakota State Museum, who spent three field seasons surveying the Missouri River for archaeological sites (Meleen 1948:1). With the help of local informants, Over recorded hundreds of sites along the Missouri River in South Dakota, including the Big Bend region (Sigstad and Sigstad 1973; Helgevold 1981:36). Over excavated portions of a few sites but without the benefit of professional-grade field techniques. Within the region, Over conducted limited excavations at Medicine Creek (39LM2) (Sigstad and Sigstad 1973). Over also recorded several Folsom point finds in South Dakota, including some in the Big Bend region (Helgevold 1981:25). From 1929–1931, Alfred W. Bowers of Beloit College's Logan Museum did archaeological surveys and excavations at 27 sites in the Big Bend and Bad-Cheyenne regions (Huscher and McNutt 1958:14).

Passage of the Flood Control Act of 1944 launched an era of large-scale professional archaeology projects along the Missouri River. From 1946 to 1969, the Smithsonian Institution-River Basin Surveys Program, administered by the National Park Service and the Smithsonian Institution undertook large-scale survey and excavation projects in areas expected to be destroyed or inundated with the construction of a series of large hydroelectric dams. The Missouri River Basin received priority because of its numerous sites and the size of the proposed hydroelectric projects. The Missouri River Basin Project, directed by Waldo Wedel of the US National Museum, included three years of survey and 19 years of excavation involving 90 sites (Lehmer 1971). The Missouri River Basin Project produced numerous reports and publications on the Big Bend region (Cooper 1949; Cumming 1953; Mallory 1965; Huscher and McNutt 1958; Mattison 1953; Franz 1962; Husted 1965b; Jensen 1966; C. Smith 1968, 1975, 1977; Smith and Grange 1958; Caldwell *et al.* 1964; Caldwell 1966c; Caldwell and Jensen 1969; C. Miller 1960; Neuman 1961a, 1961b, 1962b, 1964a, 1964b; Karklins 1970; A. Johnson 1979; Stephenson 1962; Lehmer 1971). Some excavation reports were never completed; however, drafts and field notes are on file at Archaeological Research Center (Miller n.d.; Jones n.d.).

In 1960, Wesley Hurt of the W.H. Over Museum surveyed portions of the Big Bend region for buried sites exposed in the river bank, under contract to the National Park Service and the US Army Corps of Engineers (Hurt 1960c). The Over Museum staff followed this with a study of human remains unearthed in the region (Gant 1962b) and excavations at the Arp Site, 39BR101 (Gant 1967).

The period from the 1960s through the early 1980s was when most of the studies of human skeletons from the region took place (Gant 1962b; Bass 1976; Bass and Jantz 1965; Jantz 1970; Lyon 1970; Orser 1980; Gregg *et al.* 1981; Gregg 1982; Bumsted 1984; Willey and Mann 1986; Willey 1993; Willey and Emerson 1993; Jantz and Owsley 1994; Zobeck 1983; Zimmerman *et al.* 1981; Zimmerman and Bradley 1993; Zimmerman and Whitten 1980; Zimmerman and Gregg 1989). Protests against such studies on a national level triggered discussions in South Dakota about balancing archaeological studies of human remains and Native American opposition to treatment of ancestors' bones as scientific specimens (Zimmerman and Alex 1981; Zimmerman and Gregg 1989).

In the late 1970s, the US Army Corps of Engineers began another extensive survey program along the Missouri River, contracting the work to the University of North Dakota, the University of Nebraska, the University of Kansas, the University of South Dakota, Augustana College, and the South Dakota State Historical Society (Olson and Zimmerman 1979; Toom and Picha 1984; Falk *et al.* 1981; Winham 1983b; Winham and Lueck 1984; Lees *et al.* 1985; Hanenberger *et al.* 2004; Toom *et al.* 1979; Steinacher and Toom 1980, revised 1985; Falk *et al.* 1983). By 1990, almost all federally administered lands along the Missouri River in South Dakota had undergone archaeological survey and National Register evaluations. A few sites in imminent danger of destruction were excavated (e.g. Winham 1983a, 1987; Haug *et al.* 1986). This program continues today. Smaller projects in the area have been done in advance of development of roads, recreational facilities, mining, logging, irrigation projects, utility lines, public housing and public buildings (e.g. Lazio 1977; J. Wood 1977; Boyd 1978a-e; Watts and Estep 1998b; Haberman 1985b; Berg 1993; Hannus and Winham 2004). A South Dakota State Historical Society project in 1991 assessed the condition of various archaeological sites in the region (Ruple 1991). A few small-scale excavation projects were designed to assess the National Register potential of sites in the region (Grady and Carrasco 1989; Kordecki and Toom 1998; Toom 1990a; T. Larson 1997; Steinacher 1983). Another excavation project was accomplished with field students and volunteers (Fosha 1999). Other studies involving Big Bend region archaeological sites are site inventories (Adamczyk 1975; Winham *et al.* 1994) and a study of Middle Missouri chronology (C. Johnson 1996).

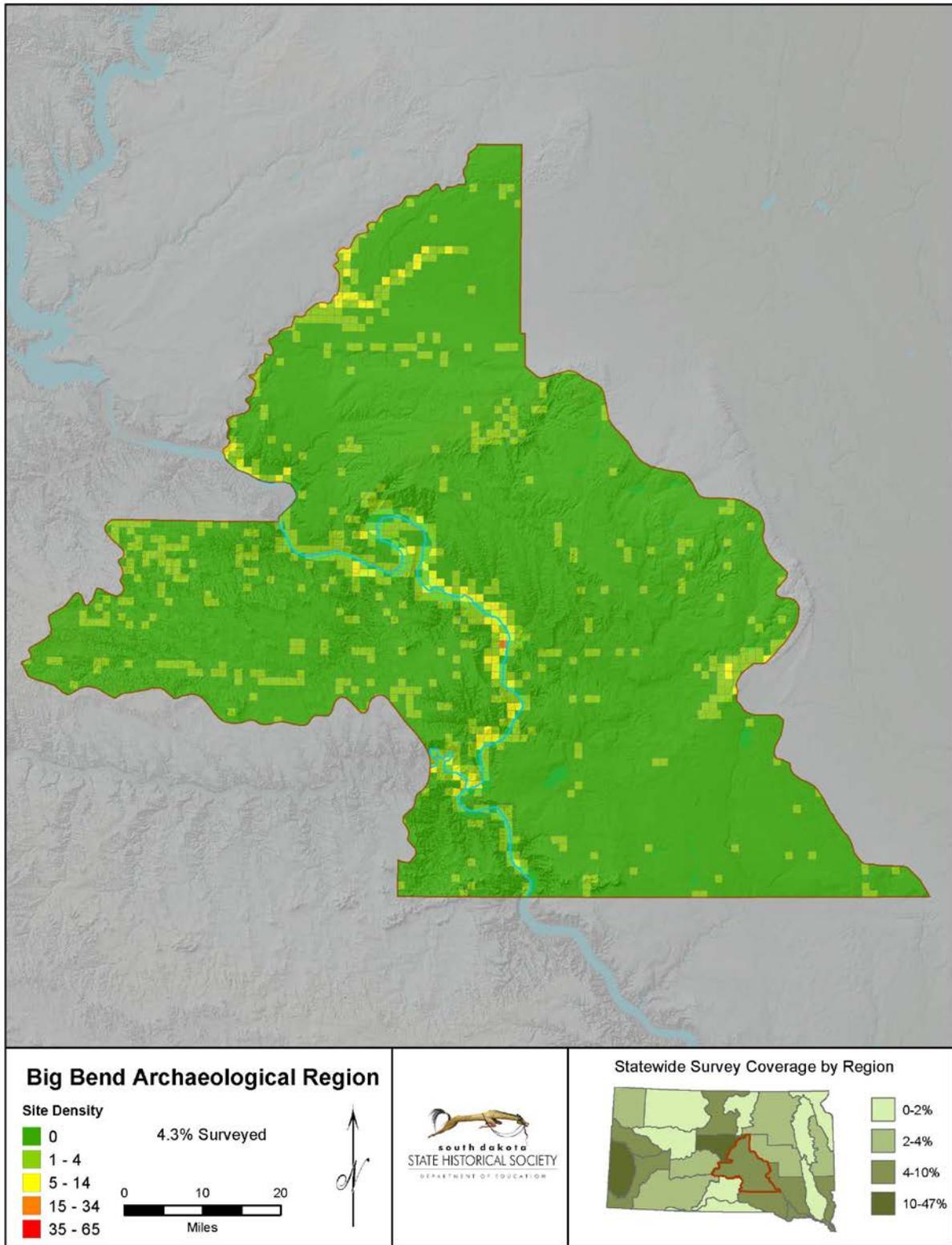


Figure 161. Density of known archaeological sites, Big Bend archaeological region.

## Historic Contexts

**Paleoindian.** The Paleoindian period in the Big Bend region is represented only by two reported Folsom points. No buried sites have been found so far, but the region contains sediments of the right age to contain such sites and one can safely assume some eventually will be discovered. Such early sites are probably very deeply buried in terrace sediments. Since most archaeological work in the region has focused on near-surface Plains Village sites, there has been little opportunity to find and study Paleoindian sites.

**Archaic.** The Medicine Crow site, 39BF2, is one of a handful of Early Archaic sites recorded along the Missouri River. It has provided most of our current knowledge of the period in the central Dakotas. This site was first occupied at about 8000 years B.P. and was repeatedly reoccupied during the Early Archaic period (Ahler and Toom 1989). This and similar sites form the Logan Creek complex (Kivett 1962). Distinctive tool types include side-notched Simonsen projectile points and thin, unnotched triangular Delong points. Neuman (1964b) identified Delong points in pre-ceramic contexts at three other sites in the Big Bend region: Truman Mound (39BF224), Sitting Crow (39BF223), and Side Hill (39BF233). Projectile points similar to the Simonson type were also found in pre-ceramic contexts at Sitting Crow.

Projectile points similar to those found in the Northwestern Plains McKean Complex are found as far east as the Missouri River Valley. The Medicine Crow site (39BF2) included a probable Middle Archaic level, but this showed evidence of less frequent reoccupation than the Early Archaic level (Ahler and Toom 1989). A human skull from the site was dated to the Middle Archaic (Bass 1976). At Medicine Crow, side-notched and unnotched projectile point types continue, but some corner-notched types appear, as well. The Middle Archaic is seen as directly descended from the Logan Creek complex (Ahler and Toom 1989). McKean phase diagnostic projectile point types occurred in components below burial mounds at four sites in this area: 39BF224, 39BF225, 39BF233, and 39BF270 (Neuman 1961a, 1964b). Another site in the region, 39LM364, was a sparse surface artifact scatter that included Middle Archaic projectile points. At the Long Turkey Cabin site (39LM212) two hearths were exposed in a cutbank at a depth of 2.5 meters. Charcoal from one of these features dated to the Middle Archaic period. The Ree Heights site, 39HD3, was not professionally excavated, but collections from the site and the accounts of local residents who dug there suggest the site was a buffalo jump or impoundment, with Middle Archaic (McKean), Great Oasis, and Middle Missouri components (Hurt 1961).

Ahler and Toom (1989) assign the last major pre-ceramic occupation at Medicine Crow, 3000–5000 BP, to the Late Archaic. Stemmed Duncan projectile points, which to the west and north are part of the McKean complex, are the most distinctive artifact type of this period at Medicine Crow. This projectile point type is elsewhere placed in the Middle Archaic period, extending to 3500 BP. Determining whether the Duncan point represents a separate entity in the Big Bend region, as Ahler and Toom (1989) assert, will require additional data.

Other researchers date the Late Archaic to 3500 to 1500 BP. Most sites dating to this period are classified as Woodland, rather than Late Archaic. In some cases, this was based on the presence of Woodland ceramics, but generally the two categories—if they actually do represent independent cultural developments—are not consistently identified in site records. Many such sites are rather arbitrarily classed as either Late Archaic or Woodland based on the presence of corner- and side-

notched projectile points matching those of the Pelican Lake and Besant complexes of the Northwestern Plains.

**Woodland.** The Woodland tradition is a watershed in North American archaeology. In the northern Great Plains, this period witnessed such innovations as pottery, construction of large burial mounds, and the beginnings of horticulture and settled villages. The term Woodland is more than simply a chronological division; it implies the introduction of new peoples, technologies, and belief systems from areas to the east of the Great Plains. The Woodland period is sometimes divided into early, middle, and late subperiods, with the Late Woodland overlapping the Plains Village period. In this overview, a general Woodland period is used, corresponding approximately to the period from 2500 to 1000 years ago. Although Woodland sites are abundant in eastern and central South Dakota, relatively few have been formally studied apart from a few burial mounds. Within the Big Bend region, most excavated Woodland sites are burial mounds. Of the 46 sites listed as Woodland in the region, approximately 19 contain mounds. Excavations at these mounds revealed them to be dome-shaped structures from 30 to 100 meters in diameter and around two meters in height. Below the floor of the mounds were rectangular chambers containing primary (time of death) or secondary (bone bundle) burials and roofed with logs (Neuman 1960, 1975). The remains of men, women, and children were found in mounds, some with ornaments of shell or rolled copper and many covered with red ocher. Some mounds also contained bison skulls or complete bison skeletons. At 39LM221, three of four mounds were excavated. One contained two burials and a pottery vessel; the other two contained only chipping debris (Huscher and McNutt 1958).

The exact transition between Archaic and Woodland cultures in the Big Bend region is not well understood. As noted above, the Late Archaic and Woodland periods overlap. Some sites seem to reflect a continuation of Archaic lifeways based on temporary camps and a hunting-foraging economy, while others exhibit such Woodland innovations as ceramics, more permanent villages, and extensive use of plant resources. Sites important to understanding this transition have not yet been studied in detail. Site 39BR102 had great potential for clarifying the transition to Plains Village lifeways; however, the site has been completely destroyed by shoreline erosion despite archaeologists' recommendations that it be thoroughly studied. A one-day excavation there by a Smithsonian Institution-River Basin Surveys crew unearthed a complete Woodland pot (Ellis Cord-Wrapped Rod-Imprinted), stone knives and scrapers, scapula hoes, and other bone tools. In 2004, crews from Archaeological Research Center observed artifacts and bone middens at various levels in an exposed bank from 40 to 220 cm below surface, indicating that the site probably spanned the Archaic-Woodland transition. Site 39HU89 also appears to include both Archaic and Woodland materials, based on ceramics observed in eroded areas of the site. At 39LM81 and 39LM84, Plains Woodland ceramics occurred in buried soils at 30 to 60 cm below surface. Both contained artifacts and features indicating extensive sites, probably from habitations; however, neither site has been excavated. Artifacts and features at each site are actively eroding from exposed banks (Kay 1973). Another site with Woodland ceramics, 39LM27, has a Post-Contact Coalescent component that was extensively excavated; however the possibility of an intact Woodland component was not fully explored during these excavations (Cooper 1947d, 1949; Kivett 1952, 1958). At the Talking Crow site, 39BF4, only a few Plains Woodland sherds were found, along with two triangular corner-notched projectile points. These suggested a small campsite that was disturbed by later Plains Village occupations (C. Smith 1977:152).

Various types of Late Woodland pottery occur in the Big Bend region. An Avonlea vessel was found at the Truman Mound site (39BF224) (Johnson 1988b). This was recognized as the Avonlea Parallel Grooved type. Such vessels have carefully executed parallel grooves placed horizontally around the vessel. The vessels are large, elongated conical forms with poorly defined shoulders and a straight to inverted rim. A slight constriction sometimes occurs at the neck. The pots are tempered largely with crushed granite. This type is dated from 1000–1500 BP.

Another site important to understanding the Woodland-Plains Village transition is the Arp Site, 39BR101. Limited excavations discovered no postmolds or house floors; however, a large number of cache pits and hearths were found (Gant 1957). Artifacts included several thousand pieces of chipping debris, many pieces of animal bone, many ceramic sherds, chipped stone tools, bone tools, polished stone tools, double-socketed hoes, and small, side-notched projectile points. The ceramics indicated cultural associations with Woodland, Great Oasis, and early Plains Village cultures. The Arp Site (39BR101) contained Scalp ware with punctuated rims, indicating a Boyer variant presence at the site. The Arp Site may contain Randall phase material as well (Haberman 1993a).

The Arp Site (39BR101) also contained ceramics diagnostic of the Loseke phase of the Late Woodland period, as did Crow Creek (39BF11), 39BF4, 39BF44, Side Hills Mounds (39BF233), and Old Quarry Mound (39BF234). Loseke phase sites typically occur on the river or major stream terraces. Both camps and small villages are found (A.E. Johnson 2001:165–166). Limited archaeological evidence from sites outside the Big Bend region indicates the presence of small, shallow-basin houses 1.5 to 2 meters in diameter, with poorly defined interior hearths and storage pits. Some mounds have been assigned to the Loseke phase, but not all can be confidently linked to this phase. Sites contain a variety of animal remains from bison, deer, elk, and pronghorn to small mammals, birds, fish, and shellfish (Gant 1961b:50; A.E. Johnson 2001:166). Some horticulture is indicated by the presence of maize at some sites, along with bison scapula hoes (Benn 1990:228; A.E. Johnson 2001:166). The Arp site contained bison scapula hoes as well as grinding stones, grooved mauls and celts.

Other sites also appear to have been camps or villages, but no definite house remains have been found yet in the Big Bend region. A possible post hole feature was observed in a cut bank at 39LM387, a site which is rapidly being destroyed by lake shore erosion. This site has the potential to shed light on Woodland house types, settlement patterns, subsistence, and material culture if archaeologists are given the opportunity to salvage the remaining portions. Besides the possible postmold, archaeologists observed a variety of typical Woodland artifacts, including two kinds of ceramics, fire-cracked rock, animal bone, chipped stone debris and tools, shells, charcoal, and groundstone tools. Archaeologists from the University of North Dakota identified 39LM161 as a Sonota Complex site and recommended excavations to salvage the remaining information from this rapidly eroding site (Toom *et al.* 1988); however, the Army Corps of Engineers did not follow this recommendation and most of the site has been lost. Test excavations or collections from the eroded shoreline at 39BF4, 39BF44, 39BF205, 39BR38, 39BR39, 39HU83, 39HU205, 39HU221, and 39LM7 revealed multiple component Plains Village and Woodland occupation sites (Kivett and Jensen 1955; Tibesar *et al.* 1986). No clear picture of Woodland life in the region has emerged from these limited studies.

The lower of two components at the Gold Soldier Site, 39LM238, contained a mix of globular and conoidal jars identified as Great Oasis, Valley Focus, and an undefined Late Woodland type. A hearth yielded a radiocarbon date of 2369 BP. This date indicates an Early Woodland or Late Archaic occupation, but the pottery suggests an age at the Late Woodland-Plains Village boundary for most of the component. This mixed component had six features: a concentration of chipping debris; a small, basin-shaped hearth; a large, basin-shaped hearth, and three shallow basin-shaped hearths. The hearths contained charcoal, chipping debris, animal bone, shell, and flecks of hematite (Neuman 1964a). Tools included triangular and corner-notched projectile points, end scrapers, ovoid knives, and retouched flakes. Both main components appear to be from habitations, but excavations were not extensive enough to determine house types (Neuman 1964a). The site now lies under the waters of Lake Sharpe.

Although the Big Bend region lies outside the core area for the Great Oasis tradition, about ten sites in the Big Bend region have some evidence, generally in the form of ceramics, for presence of Great Oasis groups. These include 39BF44, 39BF277, 39BR202, , 39HU21, 39HU60,39HU211, and 39LM66 (L. Brown 1965; Tibesar *et al.* 1986:102; Johnston 1967a:63; Zimmerman and Olson 1979).

Most archaeologists view Great Oasis culture as ancestral to the Initial Middle Missouri tradition. Some place it in the Late Woodland period, while others include it in the Plains Village period. It appears that Great Oasis groups adhered to both patterns, some retaining the old dispersed hunting-foraging-gardening pattern, while others aggregated into small villages supported by wide-spectrum hunting and foraging, as well as maize horticulture (R. Alex 1981a; Johnston 1967a; Tiffany 1983, 2007a). Late Woodland sites overlap in time and space with Great Oasis and early Plains Village sites, suggesting that the transition period was one of gradual and localized change.

***Plains Village.*** The Plains Village pattern arose in areas of the northern and central Great Plains between 900 and 1000 CE, comprising several distinctive traditions: the Middle Missouri Tradition along the central portions of that river in the Dakotas; the Coalescent Tradition, also along the Missouri River in the Dakotas; the Central Plains tradition in Nebraska and Kansas; and the Oneota tradition along the Upper Mississippi River. The Middle Missouri tradition is the dominant early village culture in the Big Bend region. Plains Village tradition sites are common in the Big Bend region (e.g., Butterbrodt 1982; Caldwell 1961, 1964, 1966c; Caldwell and Jensen 1969; Caldwell *et al.* 1964; Falk *et al.* 1981; Fitting 1978; Gant 1962b, 1967; Hurt 1951; Husted 1965b; Jensen 1966; A. Johnson 1977a, 1979; Karklins 1970; Kay 1973; Kivett and Jensen 1976; Neuman 1964b; Olson and Zimmerman 1979; C. Smith 1968, 975, 1977; Smith and Grange 1958; Toom and Picha 1984; Wardlow and Lees 1990; Winham 1983a, 1983b, 1987; Winham and Lueck 1984; Winham *et al.* 1994; Winham and Calabrese 1988).

***Initial Middle Missouri.*** A pattern of large, earth lodge villages supported by a mix of gardening and bison hunting emerged in the region at 1100 to 1230 CE. Initial Middle Missouri villages were larger and more closely spaced than the Woodland-era hamlets. Defining traits of the Initial Middle Missouri tradition include: compact, fortified villages; rectangular earth lodges with interior hearths and numerous storage pits inside and out; villages fortified by trench and palisade systems, sometimes with bastions; extensive use of bone for tools; notched triangular projectile points; and globular, grit-tempered pottery with various rim forms and decorations.

River bottoms were used for garden plots. Primary crops were maize, beans, squash, sunflowers, chenopods, and amaranth. Wild berries and fruits and prairie turnip added to the diet.

Initial Middle Missouri houses were 1.5 to 2 times longer than wide. They varied from 10 to 27 meters in length. They were constructed by excavating a floor about one meter below the surface, sometimes leaving a raised bench along one or two sides of the interior. The superstructure consisted of heavy poles supporting smaller poles propped against the supports to form a roof and walls covered over with branches and earth. The houses had a single entrance on the south side, with earthen steps or a ramp leading from a narrow antechamber to the house proper. The hearth was built between the entrance and the center of the lodge. The houses contained many bell-shaped and cylindrical cache pits excavated into the floor, with more cache pits outside the houses.

Initial Middle Missouri villages comprised 20 to 30 houses usually arranged in regular rows. Some villages had a central plaza. Houses were closely spaced in the fortified villages. Villages were constructed on easily defended bluffs, with ditches and palisades constructed on their exposed side(s). Many villages had a palisade along the inner edge of the ditch, some with projecting bastions. One Big Bend site, 39LM33, appears to contain only a few houses, but whether this reflects loss of features to river bank erosion or the original size of the village has not been determined (Winham 1987). Burial practices are not well understood for this period. Some bodies were placed in refuse areas or inside cache pits, but these are too few to account for the entire population (Lehmer 1971).

Typical Initial Middle Missouri ceramic vessels are globular, grit-tempered jars. Their globular form is distinct from the conical shape of the Woodland pots that precede them in the area. Other pottery forms include bowls, seed jars, water bottles, and miniature vessels. A few pieces replicate Mississippian ceramics from the Southeast (Tiffany 2007a). Initial Middle Missouri vessels were created with a paddle and anvil technique. They have plain to smoothed-over-cordmarked surfaces with outflared, S-shaped or collared rims. Some have simple decorations on the lip, rim, or shoulder. The few pieces with curvilinear designs on shoulders, red-slipped surfaces or shell temper suggest trade contacts with the Southeast. Common wares are Sanford/Anderson ware (including Cable ware), Foreman ware (including Monroe Collared type and Grass Rope ware), Chamberlain ware, and Stuart Collared (braced) ware. Two sites in the Big Bend region, 39LM33 and 39LM55, had small amounts of Extended Middle Missouri ceramics (A. Johnson 1979:158).

Other Initial Middle Missouri artifacts are small, unnotched or side-notched arrow points, grooved stone mauls, celts, and bone and shell items. The numerous bone tools include bison scapula hoes, awls, horn scoops and spoons, fleshers, knife handles, scapula knives, hooked bone knives, arrow shaft wrenches, and fishhooks. Personal ornaments of bone and shell also occur, including some made of Pacific or Gulf shell. In the western Initial Middle Missouri variant of the Bad-Cheyenne and Big Bend regions, pottery appears to have been produced locally with Mississippian influences but not imported (Tiffany 2007a). In the eastern variant, centered at the South Dakota-Iowa border, shell-tempered pottery apparently was imported from the lower Mississippi Valley. Initial Middle Missouri assemblages typically contain large percentages of Knife River flint; however, site 39LM33 in the Big Bend region contained only 12% Knife River flint (C. Johnson 1984).

The Initial Middle Missouri classification includes several coeval phases, or clusters of village sites that appear to have been periodically reoccupied by a single group tied to a single locality. The Big Bend region includes sites assigned to the Thomas Riggs, Anderson, and Over foci and the Grand Detour phase. Around 40 Initial Middle Missouri sites are recorded in the Big Bend region. Excavated Initial Middle Missouri sites in the Big Bend include Jiggs Thompson (39LM208), Langdeau (39LM209), Pretty Head (39LM232), Crow Creek (39BF4 and 39BF11), Pretty Bull (39BF12), Dinhart (39LM33/39LM112), and Stricker (39LM1). With one exception, the excavated Initial Middle Missouri sites are villages, and little is known of such pursuits as hunting and tool-stone procurement. The exception is the Ree Heights site, 39HD3, a buffalo jump or impoundment complex with Great Oasis, Initial Middle Missouri, and possibly Middle Archaic (McKean) components. Unfortunately, the site deposits were removed in an excavation effort lacking professional direction, and information from the site is unreliable. Analysis of bone scrap from 39LM33 indicated a strong preference for bison meat, with other species comprising less than 3% of the total (Chomko 1976:41).

***Extended Middle Missouri.*** The Big Bend region is peripheral to the main area of Extended Middle Missouri sites (Lehmer 1971). The Extended Middle Missouri variant of South Dakota is later than that of North Dakota. It reflects expansion southward by the first Extended Middle Missouri cultures from their core area of central and south-central North Dakota (C. Johnson 2007). The Extended Middle Missouri variant in the Big Bend region dates after 1200 CE (C. Johnson 2003, 2007; Bamforth and Nepstad-Thornberry 2007a, 2007b). Initial and Extended variant houses were similar, but Extended variant villages were larger with up to 100 houses arranged in rows around a central plaza. Few Extended Middle Missouri sites in North Dakota are fortified, but those in South Dakota have fortifications. Extended Middle Missouri variant vessels are grit-tempered, globular jars, usually with plain and simple stamped surface treatments (Hurt 1953:22–31; Lehmer 1971:70–73, 122–123). Rim types include flared, S-shaped, castellated, and filleted. Some are decorated on the lip, rim, or shoulder with punctates, horizontal and diagonal cord impressions, and horizontal, diagonal and crosshatch incising.

The core area for this variant lies farther north. Only four Extended Middle Missouri sites are listed in the state inventory for the Big Bend region.. Hickey Brothers had a substantial fortification system but had less substantial houses than the earth lodges found at other Extended Middle Missouri sites (Lehmer 1971:42). Hickey Brothers and 39LM53 have important implications for social relations of the Middle Missouri area as a whole (Bamforth and Nepstad-Thornberry 2007a). Two other sites, 39LM33 and 39LM55, contained small amounts of Extended Middle Missouri ceramics (A. Johnson 1979:158).

Some Extended Middle Missouri sites near the North Dakota-South Dakota border, such as the Jones Site, appear to have budded off from sites in the Bad-Cheyenne and Big Bend regions, such as Breedon or Sommers, rather than from the northern Extended Middle Missouri sites (C. Johnson 2007). This is based on radiocarbon dates, the presence of fortification ditches, and similarities in ceramics. Site 39LM55 shows influences from the Central Plains tradition within the southern Extended Middle Missouri variant (Winham and Calabrese 1998:275).

***The Coalescent Tradition.*** The Big Bend region was the core of the Coalescent Tradition. This distinctive culture began around 1250 CE, when groups from the Central Plains moved north into territory occupied by Middle Missouri tradition villagers (Lehmer 1971). These Central Plains

groups probably were the ancestors of the historic Pawnee. They built large, compact villages of round or square houses arranged randomly inside fortifications. The best-known Coalescent tradition sites in the Big Bend region are Talking Crow (39BF3), Farm School (39BF220), Medicine Creek (39LM2), Black Partizan (39LM218), Crow Creek (39BF11), Village II (39LM27), and Whistling Elk (39HU242). A few sites in the region have Initial Coalescent components overlying Initial Middle Missouri levels. These include Crow Creek (39BF4 and 39BF11), Medicine Creek (39LM2), and 39BR13. The main expression of the Initial Coalescent in the Big Bend is the Campbell Creek phase (C. Smith 1977:156).

According to one scenario, Central Plains immigrants gradually replaced Middle Missouri groups between 1350 and 1500 CE, with a larger, more dispersed Extended Coalescent variant emerging along most of the Missouri River in South Dakota by 1500 (Lehmer 1971). Another scenario proposes that Extended Middle Missouri groups pushed out the Central Plains groups about 1350, followed by a resurgence of Central Plains groups into the region about 1500 (Ludwickson 1979; C. Johnson 1998). In either case, the Extended Middle Missouri groups eventually relocated to North Dakota, emerging in historic times as the Mandan, while the Coalescent groups centered in South Dakota emerged in historic times as the Arikara.

The Extended Coalescent variant, whether developed in place from Initial Coalescent settlements, or constructed by an incursion of new groups from the Central Plains, occupied most of the Missouri River valley in South Dakota by 1650 CE. Extended Coalescent villages were smaller and more dispersed than those of the Middle Missouri Tradition. They varied in their degree of fortification. Crow Creek (39BF11) was fortified, but nevertheless contained the bodies of several hundred men, women, and children slain in an attack on the village (Kivett and Jensen 1976; Symes 1983; Zimmeran and Bradley 1993; Zimmerman and Whitten 1980; Zimmerman *et al.* 1981; Willey 1993; Willey and Emerson 1993; Hannus and Winham 2004). Nearby 39BF4 apparently had no fortifications (Cooper 1949; Kivett and Jensen 1976; Olson and Zimmerman 1979; Tibesar *et al.* 1986). This raises many questions about the nature of intertribal contact during the period, most particularly the degree to which warfare affected local populations. Extended Coalescent components were excavated in the Big Bend region at the Clarkstown (39LM47), Two Teeth (39BF204), and Black Partizan (39LM218) sites.

***Post-Contact Coalescent.*** By the end of the Extended Coalescent period at 1650 CE, European manufactured goods, weapons, and epidemic diseases had reached the groups living along the Missouri River in the Dakotas. Horses arrived via trade from the Southwest about 1700. The first non-native explorers reached the area about 1730. At this time, the Arikara occupied most of the river in South Dakota, the Mandan having resettled farther upstream in North Dakota. With high demand for maize, arms, horses, and metal tools, the river villages prospered by managing the exchange of these products with the hunting-foraging groups that surrounded them. Soon after, however, a series of severe epidemics decimated the Plains Village settlements. By 1780, the Arikara, too, had shifted northward, first to the mouth of the Grand River and then near the Mandan settlements at the Knife River in the 1830s. These semi-sedentary farming communities combined in fortified villages for protection from their now well-mounted nomadic enemies. They eventually settled in two villages, Like-a-Fishhook and Fort Clark, after the devastating smallpox epidemic of 1837. By 1862, the Arikara had permanently joined the Mandan and Hidatsa at Like-a-Fishhook. As the Arikara abandoned the Missouri River in the Big Bend and Bad-Cheyenne regions,

eventually leaving South Dakota altogether, bands of Lakota and Yankton-Yanktonai moved across the river and expanded throughout most of the Dakotas.

Post-Contact Coalescent components are common in the Big Bend Region (e.g., C. Smith 1968, 1977; Lehmer 1971). The Post-Contact Coalescent archaeological culture is equivalent to historic Arikara culture. The Medicine Crow site (39BF2) was the location of an Arikara village during the mid-1700s CE (Ahler and Toom 1989). Other Post-Contact Coalescent components were excavated at Oacoma Village II (39LM27), Chapelle Creek (39HU60), and Pretty Bull (39BF12). Limited excavations at 39BF205 and 39BF206 revealed numerous cache pits and hearths but few earth lodge structures (Winham and Hannus 1984). The lack of distinct house features may indicate that the surface was damaged by road construction before the excavations took place. Excavations at Rattlesnake Keeper, 39HU160, outlined differences in the material culture of large village sites and small special activity sites. Specifically, this outlying site contained small globular pots tempered with crushed bone, associated with evidence for bison processing, fishing, plant gathering, and small game hunting. The small pots contained residue from red ocher (Toom 1989, 1990b). Most cache pits at these sites contained human remains, indicating a deliberate practice of secondary interment inside these large, bell-shaped pits.

The Bad-Cheyenne and Big Bend regions were the core of Coalescent tradition territory from its onset. The rich alluvial sediments of the bottomlands proved well suited for maize farming. The Arikara developed a lucrative trade in corn with non-farming groups—their nickname and sign in the Plains Indian sign language both signify “corn eaters.” They continued to maintain villages and fields in the Big Bend region well into the post-contact period.

**Historic.** The earliest non-native sites in the Big Bend region are fur-trading posts established in the early 1800s. These vary from tiny cabins to substantial, stockaded settlements. Other early contact-era sites expected in the region are military posts, steamboat landings, wagon and stagecoach trails, and sites associated with cattle drives from the era of Texas drovers. The ruins of Indian agencies and other early reservation period structures make up the next layer of archaeology in the Big Bend region. The next period of history is represented by the sites of homesteads, Indian allotment farmsteads and hamlets, rural schools, towns, and cemeteries. Finally, public lands along the Missouri River became an important place for recreation, as evidenced by the ruins of tourist facilities and youth camps. Many contact-era sites have been recorded in the region and a few homesteads have been test excavated.

Fort Lookout, 39LM57, is the ruins of a military fort and fur trade post overlying an Initial Middle Missouri village site (C. Miller 1960; Fosha 1999). Excavations at 39LM57 identified the site as the location of Fort Lookout II and its predecessor, Fort Kiowa, a trading post (C. Miller 1960). The site had two occupation levels, corresponding to the two forts, each with artifacts typical of their period of occupation (ca. 1825–1830 and 1831–1840). Other excavated military posts and fur trade stations include Fort Lower Brule (39LM53), Fort Lookout II (39LM57), and Fort Lookout IV (39LM63) (Roberts 1952:377–379; Mills 1960). The possible location of a fur trade post called Fort Recovery is recorded as 39LM50. Smithsonian Institution-River Basin Surveys archaeologists observed chinaware fragments, blue glass beads, glass fragments, burned earth and daub, and lignite fragments and cinders from the surface; however, numerous test pits failed to produce indications of the fort’s structures (Garth 1951). Fort Defiance/Fort Bouis (39LM241) was test excavated by Smithsonian Institution-River Basin Surveys archaeologists in

the 1950s (G. Smith 1968). Another trading post, Campbell's Trading Post (39BF232), is recorded, but no excavations were done there.

The Big Bend contains the remains of three military forts established during the 1860s and 1870s in response to the Dakota Conflict of 1862, the Powder River Basin conflict of the 1860s, and the need to establish agencies for the Great Sioux Reservation under the provisions of the 1868 Fort Laramie Treaty. These are Old Fort Thompson (39BF13), Lower Brule Fort (39LM53), and Fort Hale (39LM52). Each has received limited archaeological investigation (Archaeological Research Center site records from 2003 and 2004 reevaluation projects).

Smithsonian Institution-River Basin Surveys crews excavated two homestead-era sites in the Big Bend region while attempting to locate historic fur trade posts (G. Smith 1968). The older of the two dates to about 1850 or 1860 and represents a squatter's farmstead occupied before the area was officially opened to non-Indian settlement. It contained the ruins of a large stone chimney, a cribbed timber structure (probably a pen), two cellar pits, and a privy. Artifacts included cast iron stove parts and a patent medicine bottle (G. Smith 1968).

Depressions test excavated at 39LM241 proved to be the remains of two houses, one constructed over an earlier dugout habitation. (G. Smith 1968). Artifacts included chimney brick, machine-cut nails, window glass, bottles and tins, clay pipes, barrel hoops, a coffee pot, a coal shovel blade, a tine from a hay rake, cast iron stove parts, a polished marble dresser top, porcelain doll parts, and a metal hairpin, as well as food scrap. These indicated a series of houses on the site, starting with the dugout, then a frame house constructed over it and incorporating the old dugout as a cellar, and finally another frame house built when the earlier one was destroyed by fire. The site dates to the late 1800s (G. Smith 1968).

## **Sites by Period**

*Paleoindian:* 39HE6 (Folsom), 39HU78 (Folsom)

*Archaic (unspecified):* 39BF205, 39BF206, 39HU95, 39LM212, 39LM326

*Early Archaic:* 39BF2, 39BF223, 39BF224, 39BF233

*Middle Archaic:* 39BF225, 39BF231, 39BF233, 39HD3?, 39HU89, 39LM212, 39LM364 (Middle or Late Archaic)

*Late Archaic/Woodland:* 39BF4 (Woodland Boyer variant), 39BF10 (Woodland), 39BF11 (Woodland Loseke), 39BF44 (Woodland), 39BF49, 39BF73, 39BF201 (Woodland), 39BF205 (Woodland/Besant), 39BF206 (Woodland), 39BF219 (Woodland), 39BF233 (Woodland), 39BF234 (Woodland), 39BR11, 39BR34, 39BR38 (Woodland), 39BR39 (Woodland), 39BR100 (Woodland Boyer) 39BR101 (Woodland Randall Phase), 39BR102 (Late Woodland), 39BF223, 39BF225 (Woodland), 39BF229 (Woodland), 39BF231 (Woodland), 39BF233 (Woodland), 39BF234 (Woodland), 39BF235 (Woodland), 39BF241 (Woodland), 39BF270 (Woodland), 39HD38?, 39HU83 (Woodland), 39HU89 (Woodland, Late Archaic), 39HU95, 39HU205 (Woodland), 39HU212 (Woodland), 39HU221 (Woodland), 39HU246 (Woodland), 39HU250 (Woodland), 39LM7 (Woodland), 39LM81 (Woodland), 39LM84 (Woodland), 39LM149

(Woodland), 39LM161 (Sonota), 39LM210 (Woodland), 39LM221 (Woodland), 39LM227 (Woodland), 39LM235 (Woodland), 39LM238 (Woodland), 39LM259, 39LM299 (Woodland), 39LM310, 39LM326, 39LM364 (Middle or Late Archaic), 39LM381, 39LM387 (Woodland), 39LM417, 39LM431, 39LM436, 39LM488

*Late Prehistoric:* 39BF76, 39BF224 (Avonlea)

*Plains Village:* 39BF7, 39BF25, 39BF71, 39BF74, 39BF203?, 39BF226, 39BF301,

39BR1, 39BR4, 39BR5, 39BR8, 39BR17, 39BR23, 39BR27, 39HE201, 39HE202, 39HE203, 39HE301?, 39HU11, 39HU12, 39HU62, 39HU63, 39HU69?, 39HU95, 39HU222, 39HU224?, 39HU225?, 39HU233, 39HU241?, 39HU243, 39HU245, 39HU250, 39HU282, 39LM3, 39LM5, 39LM8, 39LM9/39LM26, 39LM10/39LM27, 39LM11, 39LM12/39LM28, 39LM14, 39LM16, 39LM17/39LM111, 393LM18/39LM120, 39LM19/39LM47/39LM123, 39LM20/39LM39/39LM97, 39LM21, 39LM23, 39LM35, 39LM38, 39LM41?, 39LM51, 39LM65, 39LM66, 39LM67, 39LM69, 39LM70, 39LM82, 39LM85, 39LM92?, 39LM94?, 39LM95, 39LM96?, 39LM97?, 39LM172, 39LM173, 39LM211, 39LM213, 39LM217, 39LM220, 39LM231?, 39LM234, 39LM235, 39LM237?, 39LM242, 39LM243, 39LM244, 39LM245, 39LM301, 39LM302, 39LM325?, 39LM330? 39LM326, 39LM380, 39LM382, 39LM383, 39LM392, 39LM418, 39LM428, 39LM443, 39LM445, 39LM446, 39LM449

*Great Oasis:* 39BF44, 39BF227, 39BR29, 39BR101, 39BR202, 39HD3, 39HU21, 39HU60? 39HU213?, 39HU211?, 39LM33/39LM112, 39LM66, 39LM238

*Initial Middle Missouri:* 39BF4, 39BF11, 39BF12, 39BF44, 39BF201, 39BF215, 39BF221, 39BF227, 39BR2/39BR3/39BR10, 39BR13, 39BR16, 39BR29, 39BR38, 39BR39, 39BR202?, 39HD3, 39HU60, 39HU75, 39HU211, 39HU213, 39HU223, 39HU313, 39JE1, 39LM1, 39LM2, 39LM4, 39LM7, 39LM13/39LM33/39LM112, 39LM55, 39LM57, 39LM59, 39LM84, 39LM98, 39LM146, 39LM156, 39LM208, 39LM209, 39LM212, 39LM221, 39LM225/39LM255, 39LM226, 39LM232, 39LM247

*Extended Middle Missouri:* 39LM4, 39LM33/39LM112, 39LM53

*Coalescent:* 39BF44, 39BF63, 39BF228, 39HU205, 39HU221, 39LM31, 39LM37, 39LM47, 39LM83, 39LM128, 39LM139, 39LM203, 39LM204, 39LM212, 39LM225, 39LM246, 39LM304, 39LM386, 39LM389

*Initial Coalescent:* 39BF3, 39BF4, 39BF11, 39BF218, 39BF220, 39BF301A, 39BR6, 39BR13, 39BR201, 39HU13, 39HU61, 39HU83, 39HU205, 39HU207, 39HU216, 39HU224, 39HU229, 39HU231?, 39HU242, 39LM2, 39LM6, 39LM23, 39LM26, 39LM27, 39LM82, 39LM218

*Extended Coalescent:* 39BF4, 39BF11, 39BF204, 39BF205, 39BF206, 39BF215, 39BR10, 39BR11, 39BR36, 39BR201, 39HU60, 39HU61, 39HU63, 39HU83, 39HU88, 39HU126, 39HU203, 39HU204, 39HU205, 39HU206, 39HU210, 39HU211, 39HU214, 39HU216, 39HU217, 39HU219, 39HU222, 39HU223, 39LM1/39LM22, 39LM2, 39LM4, 39LM7, 39LM23, 39LM25, 39LM31, 39LM39, 39LM47, 39LM60, 39LM64, 39LM65, 39LM69, 39LM70, 39LM80, 39LM84, 39LM85, 39LM86, 39LM154, 39LM156, 39LM166, 39LM167, 39LM201,

39LM204, 39LM206, 39LM207, 39LM216, 39LM217, 39LM218, 39LM219, 39LM222, 39LM223, 39LM224, 39LM227, 39LM228, 39LM238, 39LM242, 39LM243, 39LM249, 39LM337, 39LM342, 39LM351

*Post-Contact Coalescent:* 39BF2, 39BF3, 39BF4, 39BF6, 39BF12, 39BF202, 39BF204, 39BF205, 39BF206, 39BF211, 39BF220, 39BR6, 39BR13, 39HE202, 39HU60, 39HU217, 39HU220, 39HU224, 39HU238, 39LM24, 39LM26, 39LM27, 39LM28, 39LM34, 39LM37, 39LM160, 39LM215, 39LM218, 39LM219, 39LM220

*Oneota:* 39BF205?, 39BF206?

*Protohistoric:* 39LM29/39LM254 (burial), 39LM57, 39LM58, 39LM63, 39LM183?, 39LM239, 39LM259 (camp), 39LM431

*Historic farmsteads:* 39BF33, 39BF34, 39BF35, 39BF36, 39BF37, 39BF38, 39BF39, 39BF43, 39BF46, 39BF47, 39BF57 (allotment), 39BF80, 39BF82, 39BF83, 39BF84, 39BF90, 39BF205, 39BR12, 39BR25, 39BR44, 39BR45, 39BR55, 39BR56, 39HD32, 39HD85, 39HD91, 39HE2, 39HE20, 39HE26, 39HU89, 39HU90, 39HU91, 39HU92, 39HU93, 39HU107, 39HU108, 39HU116, 39HU117, 39HU118, 39HU119, 39HU122, 39HU123, 39HU125, 39HU128, 39HU129, 39HU205, 39HU210, 39HU215, 39HU243, 39HU254, 39JE17, 39LM39, 39LM80, 39LM81, 39LM126, 39LM143, 39LM144, 39LM145, 39LM151, 39LM153, 39LM154, 39LM155, 39LM157, 39LM162, 39LM166, 39LM183, 39LM188, 39LM190, 39LM191, 39LM192, 39LM197, 39LM199, 39LM200, 39LM202, 39LM213, 39LM231, 39LM267, 39LM273, 39LM276, 39LM285, 39LM290, 39LM292, 39LM296, 39LM303, 39LM311, 39LM314, 39LM340, 39LM355, 39LM377, 39LM378, 39LM394, 39LM403, 39LM319, 39LM413, 39LM420, 39LM421, 39LM422, 39LM439, 39SL59, 39SL62, 39SL63, 39SL212, 39SL417, 39SL418

*Historic depressions and foundations:* 39AU2 (depression), 39AU5 (depression), 39AU7 (foundation), 39BF56 (depression), 39BF85 (foundation), 39BF86 (depression), 39BF87 (depression, foundation), 39BF245 (depression), 39BR8 (foundation), 39BR16 (foundation), 39BR58 (depression), 39HE17 (depression), 39HE19 (depression), 39HU111 (depression), 39HU112 (foundation), 39HU203 (depression), 39HU264 (depression), 39HU266 (foundation, depression), 39HU270 (depression), 39HU307 (depression), 39HU309 (foundation), 39JE23, 39LM119 (foundation), 39LM2 (foundation), 39LM124 (foundation), 39LM133 (depression), 39LM134 (depression), 39LM135 (depression), (foundation, depression), 39LM137 (depression), 39LM138 (depression), 39LM152 (depression), 39LM156 (depression), 39LM170 (depression), 39LM171 (depression), 39LM193 (foundation), 39LM217 (depression), 39LM265 (foundation), 39LM274 (depression), 39LM226 (depression), 39LM280 (depression), 39LM282 (depression), 39LM286 (foundation), 39LM289 (foundation), 39LM300 (depression), 39LM304 (depression), 39LM309 (foundation), 39LM331 (depression), 39LM357 (depression), 39LM361 (foundation), 39LM368 (depression), 39LM369 (depression), 39LM376 (depression), 39LM379 (foundation), 39LM402 (depression), 39LM412 (foundation), 39LM415 (foundation), 39LM432 (depression and scatter), 39LM465 (depression), 39LM483 (depression), 39LM494 (foundation), 39SL364 (depression), 39SL378 (depression), 39SL421 (depression), 39ST316 (foundation)

*Historic artifact scatters and other historic sites:* 39AU2007 (railroad), 39BF8 (burial), 39BF13 (fort), 39BF14 (cabin), 39BF44, 39BF50 (burial), 39BF201, 39BF204 (cabin), 39BF206, 39BF207 (burial), 39BF210 (historic Lakota village), 39BF217 (cabin), 39BF221 (burial), 39BF225 (burial), 39BF231 (burial), 39BF232 (trading post), 39BF243 (burial), 39BR6 (sanitarium), 39BR26, 39BR46, 39BR49 (farm, town), 39BR50 (school), 39BR51 (town), 39BR57 (well), 39BR2007 (railroad), 39HE15, 39HE16 (windmill), 39HE23 (whistle stop), 39HE24 (whistle stop), 39HE25 (cairn), 39HE20, 39HE270, 39HE278, 39HE308 (dump), 39HE309 (bone), 39HU86, 39HU124 (cabin), 39HU196, 39HU204, 39HU225 (historic Lakota camp), 39HU242, 39HU282, 39HU285 (whistle stop), 39HU313, 39LM1, 39LM4, 39LM6 (cabin), 39LM7, 39LM23, 39LM25 (burial), 39LM27, 39LM31, 39LM32, 39LM38, 39LM50 (trading post), 39LM52 (fort), 39LM53 (fort), 39LM54 (Indian agency), 39LM55, 39LM57 (fort), 39LM58, 39LM59, 39LM63 (fort), 39LM87 (burial), 39LM129 (depression, industrial), 39LM130 (depression, cabin), 39LM136 (depression, cabin), 39LM140 (ranch), 39LM147, 39LM148, 39LM149 (alignment), 39LM150, 39LM158 (post office), 39LM159 (town), 39LM168, 39LM172, 39LM173, 39LM174, 39LM176 (burial), 39LM187, 39LM189 (dude ranch), 39LM194 (burial), 39LM195 (school), 39LM196 (town), 39LM212 (cabin), 39LM218, 39LM221, 39LM224 (cabin), 39LM225, 39LM241 (fort), 39LM242, 39LM247 (Indian agency), 39LM251 (burial), 39LM266, 39LM268, 39LM269, 39LM270, 39LM277 (school), 39LM283 (well), 39LM284 (school), 39LM294, 39LM295 (ranch), 39LM297, 39LM298 (ranch), 39LM306, 39LM312 (dump), 39LM316 (dump), 39LM318 (dump), 39LM322 (bridge), 39LM323, 39LM328 (grange hall), 39LM329, 39LM332 (dump, depression), 39LM334 (gas station), 39LM336 (school), 39LM339, 39LM343, 39LM344 (school), 39LM358 (grain elevator?), 39LM360 (dump), 39LM363 (depression, fence), 39LM388 (burial), 39LM390, 39LM393, 39LM396, 39LM397, 39LM399, 39LM400, 39LM401, 39LM406, 39LM407, 39LM408, 39LM409, 39LM414 (privy), 39LM419, 39LM423, 39LM427 (line camp), 39LM428, 39LM433, 39LM434 (depression with cooking feature), 39LM438, 39LM241 (forts), 39LM444, 39LM448, 39LM462 (burial), 39LM474 (dump), 39LM477 (dump), 39LM479 (irrigation), 39LM480 (dump), 39LM492 (dam), 39LM495, 39LM2007 (railroad), 39LM2114 (highway), 39SL416 (well), 39SL436 (well), 39SL2225 (railroad), 39ST476 (dam)

## **Prehistoric and Historic Themes**

*Sacred Sites, Traditional-Use Sites, and Burials.* Human burials occur in this region within villages and in cemeteries. Arikara and Mandan people today recognize the villages of the Big Bend region as the homes of their ancestors. The bottomlands at the Big Bend provided prime garden plots, and this area is referred to in a Dakota story accounting for the origins of corn and squash horticulture (Walker 1917:189). Peoria Flats was the location of a large earth lodge occupied for two winters by members of the Sans Arc Lakota, as recorded in the Lakota winter counts. Tetonkaha Lake, a corruption of the Dakota *titanka he*, means the place of the great lodge. The Dakota place-name includes the area of present-day Tetonkaha and Oakwood lakes (Bray and Bray 1976:90; Hunt 1974:17; South Dakota Writers Project 1941:125).

Crow Creek is called *Kangi okute*, Shoot the Crows, because one of the warrior societies acquired crow feathers for their regalia there (Howard 1972:294). Firesteel Creek marked the location of flinty rock used with firesteels (Ehrensperger 1941:30; Howard 1972:297). Bijou Hills is called *Wiyukeze*, Knife Hills, because of the quartzite found there and used for stone tools (Howard 1972:295). Bedashosha Lake retains its Dakota name referring to roiling waters

(Ehrensperger 1941:9). White Lake is a translation of a Dakota name referring to salt deposits there (Howard 1972:294). The Lakota name for Soldier Creek, *Sniotka*, translates to hanging cold. A woman committed suicide there by hanging herself (Ehrensperger 1941:9).

The name of Chaney Rush Creek derives from the French *chaine de roche*, or chains of rocks. A long line of boulders there led to a rock with five impressions of human feet. Father DeSmet noted in his diary, “This place is renowned in the Indian legends” (Chittendon and Richardson 1905:875). The line of rocks was an important landmark (Lewis 1889:165). The Dakotas called this stream *Wansakoyuske*, They Break off Arrowshafts because the wood that grew there was good for making arrows (Howard 1972:294). Another boulder alignment is found on a bluff above Chapelle Creek (39HU189). The boulders are arranged in the shape of a snake, a turtle, and a bird with outstretched wings (Over 1941:49; Robinson 1925:194). The Dakotas termed Chapelle Creek *Owawicaseca*, Rich in Meat, because it was a good hunting area (Howard 1972:294). Several former Arikara village sites, including the Arzberger Site, contain large boulders covered with pits (Billeck 2007). That these “grandfather” stones were recognized as sacred is clear from ethnographic sources.

These sacred and historic sites are just a few of many places in the region with cultural significance to Native Americans. For information on these and other traditional properties, the reader is referred to the Tribal Historic Preservation Offices or cultural offices of the Lakota tribes of South Dakota, the Yankton tribe of South Dakota, Three Affiliated Tribes of North Dakota, and the Northern Cheyenne Tribe of Montana.

***Tool-stone Sources.*** The Big Bend region contains two sources of stone used for chipped stone tool production. Bijou Hills quartzite occurs in the Bijou and Iona Hills and in isolated outcrops extending south into Nebraska. This grayish green stone was a significant resource for groups dwelling in the Big Bend archaeological region. Beds of coal shale in the region were a lesser source of material for chipped stone tools. These beds sometimes burned, forming pockets of silicified shale or porcellanite that could be used for stone tool production. Other tool-stone was imported from the Black Hills or Badlands or picked up in the form of cobbles within glacial till deposits.

***Fur Trading Posts and Military Forts.*** The ruins of military forts and fur trade posts cluster along the Missouri River shores, where the river provided a landmark and a means of transporting hides, exchange goods, and supplies from the early 1800s until rail transport reached the region about 1880. The locations of some historically recorded forts are unknown, and some known forts have been inundated by Lake Sharpe. For a list of sites investigated by archaeologists, see the discussion under Historic Contexts: Historic, above. For a survey of posts and forts on the Missouri River in South Dakota, the reader is referred to Kapler 1987.

***Stone Circles, Cairns, and Alignments.*** The Big Bend area contains many stone alignments, including the large boulder effigies discussed above in the section on sacred sites. These surface features include effigies (for example, outlines of snakes and turtles), as well as a large number of boulder alignments that do not form recognizable figures. Ethnographic sources indicate that the effigies were made for religious and/or commemorative purposes, but the reason for the more amorphous alignments remains unknown (Sundstrom 2006).

Stone circle sites are common in the Big Bend region. Most of these appear to be the former locations of tipi camps, but some served other purposes, such as vision quest stations. (See the discussion of stone circles in the Subcontexts section of this report.) The Big Bend stone circle sites have not been excavated, and no generalizations can be offered here regarding their content or use. Cairn sites in the region are similarly unstudied; however, at least one is known to cover a historic-era Lakota burial. In general, archaeological research in the region has omitted the stone circle, cairn, and alignment sites except for basic recording and mapping.

*Stone Circle Sites:* 39BF64, 39BF78, 39BF81, 39BF204, 39BR14, 39HD20, 39HD21, 39HD34, 39HD54, 39HD62, 39HD97, 39HE3, 39HE4, 39HE304, 39HE305, 39HE306, 39HE308, 39HE310, 39HE327, 39HU137, 39HU189, 39HU199, 39HU225, 39HU228, 39HU232, 39HU272, 39JE3, 39JE24, 39JE25, 39LM338, 39SL94, 39SL101, 39SL107, 39SL125, 39SL187, 39SL189, 39SL205, 39SL217, 39SL218, 39SL220, 39SL222, 39SL234, 39SL237, 39SL238, 39SL311

*Cairns:* 39BF64, 39BF79, 39BR37, 39BR40, 39BR41, 39HD98, 39HE21, 39HE22, 39HE308, 39HE310, 39HE325, 39HE326, 39HU136, 39HU137, 39HU232, 39HU249, 39HU263, 39HU283, 39HU284, 39HU300, 39LM147, 39LM148, 39LM150, 39SL376, 39SL377

*Boulder Effigy Sites:* 39HD5 (cross), 39HD60 (grid), 39HU189 (snake, turtle), 39HU190 (turtle), 39HU277 (trident), 39SL85 (turtle?), 39SL94 (turtle or human)

*Alignment Sites Described as Mosaics, Rectangles, Circles, Arcs, or Lines:* 39BF64, 39HE305, 39HE307, 39HE310, 39HE325, 39HE333, 39HU66, 39HU136, 39HU137, 39HU188, 39HU255, 39LM149

***Early Reservation History.*** The Crow Creek Reservation was established on the east side of the Missouri River below Fort Pierre in 1859. With the outbreak of Dakota-US hostilities in 1862, Fort Thompson was built to provide a US military presence in the area and to control some 1300 Santees and 2000 Winnebagos relocated there after the uprising in Minnesota was suppressed. The Lower Brule Reservation soon followed under a treaty signed in 1865. The already extant Crow Creek and Lower Brule reservations were included within the Great Sioux Reservation established under the 1868 Fort Laramie Treaty. Over time, portions of the reservation passed out of Lakota and Dakota hands into federal or private ownership. A series of subsequent agreements, treaties, and federal policies took great bites out of the Great Sioux Reservation until it was fragmented into the current Standing Rock, Cheyenne River, Pine Ridge, Rosebud, Lower Brule, and Crow Creek reservations. Most of Lower Brule Reservation and all of Crow Creek Reservation lie within the Big-Bend region.

The Big Bend region contains many sites from the early reservation era. Of particular interest are early farmsteads. These sites can illustrate the rapid transition occurring as Lakota families attempted to balance the pressure to assimilate with retaining their traditions and values. The archaeological record of the area is one means of tracing the history of the transition from independent Indian nations dealing with a few American and Canadian traders to the restrictive early reservation era with its policies of forced assimilation to the more autonomous system in place on reservations today. One advantage of archaeology in this regard is that it can avoid the

biases of a documentary record that largely consists of non-Indians recording information about Native Americans; in other words, it can give voice to the Native American side of the story.

At 39LM259, artifacts and features indicated an early reservation tipi location. A small excavation revealed two hearths and a bone upright apparently used as a tipi cover peg. Artifacts included metal items, pieces of glass, and glass beads, as well as a cartridge dating around 1875 (Archaeological Research Center site records).

The Deerfly Site (39LM39) was partially excavated by Smithsonian Institution-River Basin Surveys archaeologists (Lees 1985; Logan 1978). This Lakota farmstead dates to around 1890–1900. It contained a complex mix of Euroamerican items, such as nails, window glass, and metal tools, and recognizably Lakota items, such as glass beads, dress tinklers, and worked pieces of pipestone. This indicated that the site's residents were economically dependent on Euroamerican building materials, but at the same time retained a “strongly resilient and conservative [L]akota culture” based on older patterns developed during the fur trade era, especially in regard to clothing and other personal items (Lees 1985).

*Early Reservation Era Sites:* 39BF8 (grave), 39BF50 (grave), 39BF57 (farmstead), 39BF90 (farmstead), 39BF204 (cabin), 39BF210 (Indian village or camp associated with Fort Thompson), 39BF217 (cabin), 39BF221 (grave), 39BF224 (grave), 39BF231 (grave), 39BF243 (grave), 39HU90 (farmstead), 39HU91 (farmstead), 39HU92 (farmstead), 39HU93 (farmstead), 39HU107 (farmstead), 39HU108 (farmstead), 39HU110 (farmstead), 39HU225 (camp or village), 39LM29 (Brule Agency Cemetery), 39LM31 (camp or village), 39LM32 (scatter of chipped stone artifacts and a lead ball), 39LM38 (farmstead), 39LM39 (farmstead), 39LM54 (Brule Agency), 39LM58/39LM172 (scatter of stone and copper artifacts, metal buttons, and chinaware), 39LM87 (grave), 39LM126 (farmstead), 39LM143 (farmstead), 39LM144 (farmstead), 39LM151 (farmstead), 39LM157 (farmstead), 39LM158 (Iron Nation post office), 39LM159 (farmstead), 39LM166 (farmstead), 39LM168 (house or camp with mix of Native and Euroamerican items), 39LM224 (cabin), 39LM247 (Red Cloud Agency III), 39LM259 (possible graves), 39LM285 (farmstead), 39LM444 (artifact scatter with sawn pipestone), 39LM462 (grave), 39SL108 (graves); see also sites listed under Fur Trade Posts and Military Forts, above.

## **Archaeological Potential**

(This discussion is repeated from the Bad-Cheyenne section, above.) The Middle Missouri is recognized worldwide as an important archaeological district. Here a unique pattern of horticulture and bison-hunting developed to support semi-permanent villages. The accomplishments of Plains Village groups in horticulture and trade are prominent among pre-contact American cultures. Archaeological materials from the area have also been important in understanding the social dynamics of conflict and warfare. Many human remains were removed from sites in the area in pre-NAGPRA times; these were important in studies of demographics, migrations, and health. Understandably, the descendants of Plains Village groups, as well as other Native Americans, today object to removal of human bones from their resting places. If human remains are encountered today, they generally will be left in place or immediately reburied in a place designated by descendant communities. This means that such studies are not likely to take place in the future. The rich archaeological record of the area, however, offers many other sources of information on the social dynamics of the Plains Village pattern. Earlier sites are likely to occur in

the area, as well, but few have been studied thus far because they tend to be very deeply buried within the higher river terraces.

The archaeology of the Plains Village pattern sites is supported by a rich ethnographic literature compiled by explorers, traders, missionaries, and scholars who were privileged to live with and learn from the Mandan, Hidatsa, and Arikara people. That said, the region's archaeological potential was greatly damaged by the construction and filling of huge hydroelectric reservoirs along the Missouri River. This destroyed or inundated many of the villages and trading post sites. Those that remain are continually being lost to erosion from wave action, from construction and maintenance of recreational facilities associated with the reservoirs, and from looting (Haug 1991). Many sites remain to be adequately studied.

## **Management Considerations**

The US Army Corps of Engineers has retained responsibility for cultural resources on lands along the Missouri River transferred to the State of South Dakota. The US Army Corps of Engineers also retains responsibility for cultural resources on lands along the Missouri River located within the exterior boundaries of the Standing Rock Sioux Tribe, Crow Creek Sioux Tribe and the Yankton Sioux Tribe. The reader is, therefore, referred to the US Army Corps of Engineers management documents for a discussion of cultural resources issues and policies in the Big Bend region (Latham 2002; Burney and Scarlata 2003).

Outside of the lands for which the US Army Corps of Engineers has responsibility for cultural resource management, the main concern is simply a lack of information. While the Smithsonian Institution-River Basin Surveys projects salvaged information that would have been lost to reservoir construction, little is known of the areas away from the river.

Relatively little is known of the archaeological potential and management concerns outside of the lands for which the US Army Corps of Engineers has responsibility for cultural resource management. The areas away from the Missouri River have not been surveyed or otherwise studied except incidentally to construction or agricultural projects. Cultural resource management in these portions of the Big Bend region should focus on gathering basic data on site distribution, density, type, age, and cultural affiliation.

*Sites listed in the National Register of Historic Places:* 39BF2/39BF207, 39BF3, 39BF8, 39BF10, 39BF11, 39BF13, 39BF33, 39BF34, 39BF35, 39BF36, 39BF37, 39BF38, 39BF39, 39BF40, 39BF41, 39BF52, 39BF53, 39BF54, 39BF56, 39BF57, 39BF58, 39BF59, 39BF60, 39BF61, 39BF62, 39BF206, 39BF208, 39BF211, 39BF213, 39BF216, 39BF218, 39BF219, 39BF224, 39BF225, 39BF233, 39BF234, 39BF235, 39BF237, 39BF238, 39BF239, 39BF270, 39HU61, 39HU62, 39HU63, 39HU75/39HU211, 39HU87, 39HU88, 39HU89, 39HU90, 39HU93, 39HU94, 39HU107, 39HU108, 39HU111, 39HU112, 39HU113, 39HU117, 39HU118, 39HU119, 39HU121, 39HU122, 39HU123, 39HU124, 39HU125, 39HU126, 39HU127, 39HU128, 39HU129, 39HU189, 39HU203, 39HU204, 39HU205/39HU241, 39HU206, 39HU207, 39HU210, 39HU212, 39HU214, 39HU215, 39HU216, 39HU217, 39HU221, 39HU229, 39HU233, 39HU242, 39HU243, 39HU244, 39HU245, 39LM1/39LM22, 39LM2, 39LM33, 39LM55, 39LM63, 39LM135, 39LM136, 39LM137, 39LM139, 39LM207, 39LM 208, 39LM209, 39LM222, 39LM223, 39LM224, 39LM225, 39LM226, 39LM227, 39LM247

## Region 14: Fort Randall

### Setting

The Fort Randall Archaeological Region includes the portion of the Missouri River trench and adjacent breaks and plains south of the White River drainage basin and west of the James River basin. It covers all of Charles Mix County and portions of Gregory, Douglas, and Hutchinson counties. On the east side of the Missouri River the terraces and breaks abut loess-capped glacial deposits forming low, rolling hills and plains. On the west side, the breaks lead to unglaciated plains. The native vegetation on both sides consists of mixed grasses, with stands of deciduous trees along streams and former river courses. The stretch of the Missouri River southeast of Fort Randall is the only portion of the river in South Dakota not impounded by hydroelectric dams. Most of the river in this region, however, is part of Lake Francis Case formed by the Fort Randall Dam.



*Figure 162. View of the Fort Randall archaeological region (ARC photo).*

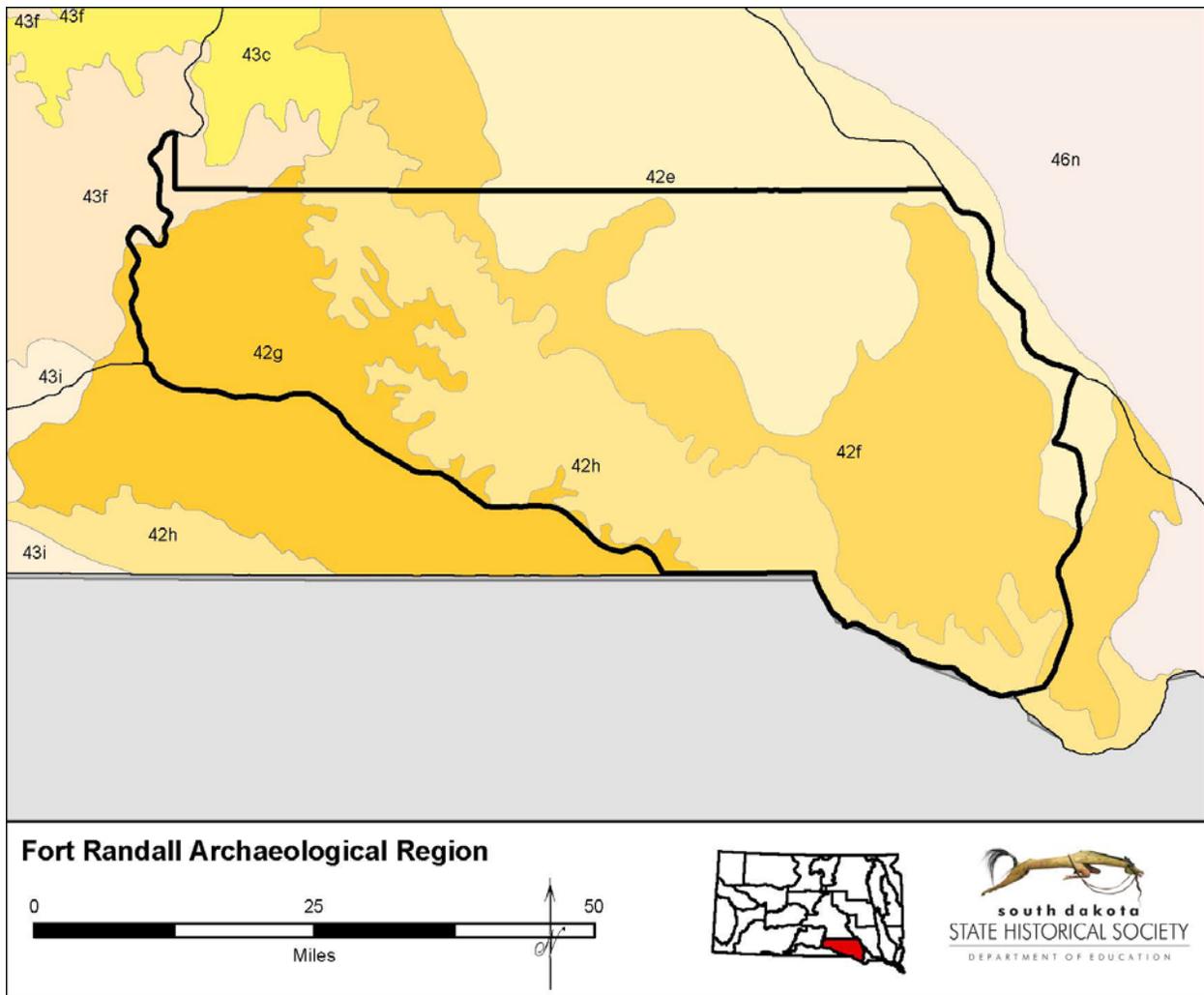


Figure 163. Ecoregions of the Fort Randall archaeological region.

42: Northwestern Glaciated Plains

42e: Southern Missouri Coteau, glaciated, gently undulating topography; scattered areas of high wetland density

42f: Southern Missouri Coteau Slope, glaciated, level to rolling uplands sloping westward to Missouri River; simple stream drainage.

42g: Ponca Plains, unglaciated level to gently rolling plains; preglacial stream drainage.

42h: Southern River Breaks: lightly glaciated dissected hills and canyons with slopes of high relief bordering major rivers and associated alluvial plains.

## Previous Archaeological Investigations

The overview of previous archaeological investigations along the Missouri River trench in the Fort Randall Region is similar to the other Missouri River regions. Although the Smithsonian Institution-River Basin Surveys recorded numerous sites in the area, relatively few sites were excavated. This created a research bias (Johnston 1967b). RBS archaeologist Warren Caldwell stated:

We have come to realize that the loss of archeological data within the Fort Randall Reservoir was particularly tragic because the area seems to have been crucial in the development and growth of both the Middle Missouri-and Coalescent Traditions, cultural streams that dominated much of the Dakotas for a millennium or more.

Some test excavations have been undertaken in recent years (Winham 1987). Additional research outside the Missouri River trench has been conducted in the Fort Randall Region. This research includes a statistical sample survey of the proposed Lake Andes-Wagner Irrigation Project (Buechler 1983), as well as a Class III evaluation of sites in that project area (Church *et al.* 1984). Other projects were associated with Fort Randall and the Fort Randall Post Cemetery (Hannus *et al.* 1986b) and with the proposed Gregory County Pumped Water Storage Facility (Bambrey 1985; Lippincott 1989; Lueck 1981).

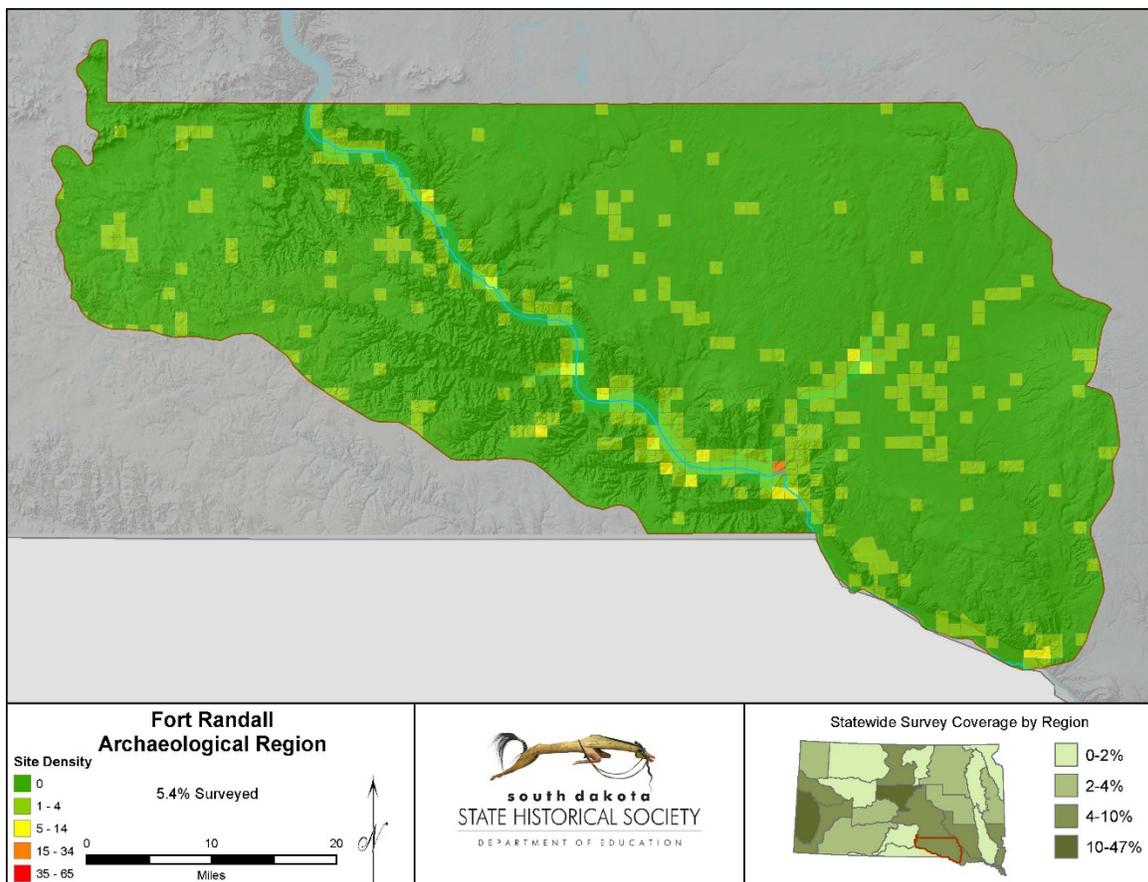


Figure 164. Density of known archaeological sites, Fort Randall archaeological region.

## Historic Contexts

No diagnostic Paleoindian or Early Archaic materials have been positively identified within the region. Hanenberger (1980) recorded a DeLong projectile point as a possible Paleoindian component and noted that projectile points similar to those described by Neuman (1964a) occur in private collections from the region. The DeLong point type is, however, poorly-documented and may be Archaic rather than Paleoindian.

Woodland materials have been excavated in the region by Hurt (1952) and Johnston (1967b). Survey projects have also reported Woodland materials: Buechler 1983; Church *et al.* 1984; Cooper 1947b, 1949; Hanenberger 1980; Kay 1973; Lees 1985; Olson and Zimmerman 1979.

A relatively large number of Great Oasis phase sites have been identified in the Fort Randall Region (Hanenberger 1980; Johnston 1967b). Great Oasis appears to be a transitional phase between Late Woodland and Initial Middle Missouri variant cultures. Many of the Great Oasis components in the Fort Randall Region are associated with Woodland materials.

Plains Village materials have been reported in the region (e.g., Buechler 1983; Church *et al.* 1984; Lees *et al.* 1985; Olson and Zimmerman 1979). Excavations conducted by Hurt (1952) identified an Extended Coalescent variant component at the Scalp Creek site in Gregory County. A late expression of the Extended Coalescent variant, named the Redbird focus (Wood 1965), has been defined just south of the Fort Randall Region, in Nebraska.

## **Sites by Period**

*Paleoindian:* 39GR102

*Early Archaic:* 39CH225, 39GR57, 39GR62

*Middle Archaic:* 39CH225

Late Archaic or Woodland: 39CH127, 39GR100, 39GR120

*Woodland:* 39CH4/39CH8, 39CH9, 39CH20, 39CH27, 39CH45, 39CH52, 39CH106, 39CH133, 39CH141?, 39CH144, 39CH154, 39CH207, 39CH210, 39CH212, 39CH225, 39CH227, 39GR1, 39GR19

*Woodland or Plains Village:* 39CH116

*Great Oasis:* 39CH45, 39CH98, 39CH205

*Late Prehistoric or Plains Village:* 39GR57?, 39GR94, 39GR104

*Plains Village:* 39CH2, 39CH3, 39CH5 (Initial Middle Missouri), 39CH7, 39CH32?, 39CH34?, 39CH45 (Post-Contact Coalescent), 39CH123, 39CH161, 39CH205 (Initial Middle Missouri), 39CH227, 39GR1 (Initial Coalescent), 39GR7, 39GR11, 39GR25?, 39GR28, 39GR32

*Protohistoric:* 39CH49 (burial), 39CH50?, 39GR1 (village), 39GR202 (village)

*Historic:* (Yankton or other American Indian houses unless otherwise noted) 39CH11 (Indian dance house), 39CH12, 39CH13, 39CH14 (Indian dance house), 39CH15 (post office), 39CH18 (church, cemetery), 39CH19 (Indian dance house), 39CH21, 39CH22, 39CH23, 39CH24, 39CH25, 39CH26, 39CH37, 39CH39 (foundation), 39CH42 (burial), 39CH44 (foundation), 39CH46 (foundation), 39CH53, 39CH62 (dump), 39CH63 (foundation), 39CH114 (foundation), 39CH119 (foundation), 39CH146 (foundation), 39CH175 (foundation), 39CH183 (foundation), 39CH219 (foundation, depression), 39CH222 (foundation), 39CH234 (cemetery), 39CH247

(foundation), 39CH262 (depression), 39CH2007 (railroad), 39DG3 (school), 39DG4 (dump), 39DG5 (foundation), 39DG6 (WORKS PROGRESS ADMINISTRATION privy), 39DG7 (WORKS PROGRESS ADMINISTRATION paths), 39DG2007 (railroad), 39GR4 (fort), 39GR5 (fort), 39GR15 (fort), 39GR16 (fort), 39GR37 (dump), 39GR38 (brick mound), 39GR41 (foundation), 39GR49 (well), 39GR52 (cabin), 39GR56 (generator), 39GR66 (foundation), 39GR68 (road), 39GR69 (church), 39GR73 (inscriptions on rocks), 39GR82 (foundation, well), 39GR93 (windmill), 39GR97 (quarry), 39GR112 (cemetery), 39GR121 (well), 39GR124 (well, depression), 39GR141 (foundation, depression), 39GR204? (cemetery), 39GR2003 (railroad)

*Historic Artifact Scatters:* 39CH66, 39CH67, 39CH68, 39CH69, 39CH72, 39CH188, 39CH202, 39CH214, 39CH217, 39CH220, 39CH221, 39CH223, 39CH224, 39CH239, 39CH243, 39CH251, 39CH255, 39CH258, 39CH263, 39CH264, 39CH267, 39DG1, 39GR35, 39GR39, 39GR40, 39GR43, 39GR50, 39GR53, 39GR76, 39GR86, 39GR100, 39GR103, 39GR107, 39GR113, 39GR136, 39GR144, 39GR201

*Farmsteads:* 39CH93, 39CH101, 39CH102, 39CH103, 39CH104, 39CH105, 39CH142, 39CH152, 39CH169, 39CH193, 39CH199, 39CH214, 39CH218, 39CH226, 39CH233, 39GR45, 39GR47, 39GR48, 39GR51, 39GR70, 39GR118, 39GR119

## **Prehistoric and Historic Themes**

*Sacred Sites, Traditional-Use Sites, and Burials.* The region includes many places of spiritual or historic significance to Native American communities. Lake Andes is thought by some tribal historians to be the point of origin of the Omaha Sacred Pole, that nation's principal sacred object, while others question this association (Fletcher and LaFlesche 1911:73). The Yanktons told of finding the tracks of a sacred water-monster (symbolizing the powers dwelling below the earth's surface) leading from Lake Andes to the sacred red pipestone quarries near the South Dakota-Minnesota border (Howard 1976:302). The Lake Andes area was a valuable bison-hunting territory (Howard 1976:295; Bettelyoun and Waggoner 1998:18). Two features there, Buffalo Gap and Lookout Hill, were used to locate and ambush bison (Howard 1976:295).

Buffalo Butte, or White Buffalo Butte, is a hill with a small cave opening from which spirit bison are said to emerge to replenish the herds. A gap between this hill and another is said to be made by the bison running out from the cave (Jorgenson 1974:52). Burnt Rock is a monolith atop a hill near the Missouri River that was used as a landmark (Ehrensperger 1941:67).

Seven Mile Creek was remembered as the location of a Yankton village, as were Greenwood and Pickstown (Howard 1976:295). Another Yankton village was located on Choteau Creek, which the Yankton and Dakota called Jealous Creek, because a jealous wife killed her rival there (Deloria 1987:104; Howard 1976:295). Choteau Creek was also remembered as the former site of Ponca and Mandan villages (Howard 1976:295). The area around present Pickstown was said to be a home of Double Woman, a Dakota spirit-being who imparted artistic skill, especially to women, and the power to seduce men (Howard 1976:295).

*Quarries.* This region contains outcrops of Bijou Hills (or Iona Hills) quartzite, a metamorphic green-gray silicified sandstone. This material was used for chipped stone tools throughout the region. A possible prehistoric quarry site was recorded as 39GR149.

**Contact and Post-Contact Sites.** Sites dating to this era include trading posts, military posts, missions, early Indian agencies, and townsites. A study conducted in advance of the construction of the Fort Randall dam identified three military posts, six trading posts, eight abandoned towns and settlements, five abandoned Indian villages and agencies, 15 camp sites from the Lewis and Clark expedition, four churches and cemeteries, and six steamboat wrecks (Mattes 1949). Another four settlements were abandoned because of dam construction. Matthes (1949) provides an overview of this period of the history of the region and detailed descriptions of the historic period archaeological sites found there. The Trudeau Post, known as Ponca House, dates to 1794. This site is recorded as 39CH53 but has not been excavated (Archaeological Research Center records). This region includes the Yankton Indian Reservation and formerly contained a portion of the Rosebud Sioux Indian Reservation.

The site of a contact-era Indian village (39GR202) is now below the waters of Lake Francis Case. Smithsonian Institution-River Basin Surveys archaeologists found chipped-stone debris, a catlinite pipe, bottle glass, a sherd from a dish, various iron items, a button, and animal bone in the plowed field containing this site, but it was not excavated prior to inundation (Archaeological Research Center records). Other historic sites in this region include an Indian dance house (39CH14 and 39CH19), Swan's village, church and graveyard (39CH18), several Yankton or Lakota homes and burial sites, and Euro-American farmsteads and burials.

Excavations at Fort Randall took place from 1986 to 1989 as part of a public involvement archaeology program run by the US Army Corps of Engineers. The Fort Randall post cemetery was investigated as well (Hannus *et al.* 1986, 1988). An archaeological investigation of the subaltern's quarters at Fort Randall produced a wide variety of military, domestic, and personal items and allowed a reconstruction of the building's history (Lees 1987).

## **Archaeological Potential**

The Missouri River has provided a focus for archaeological study in this region, but less research has occurred in the Fort Randall Region than in archaeological regions farther north. The identification and definition of preceramic cultural components is needed as is further documentation of protohistoric and historic resources. Some of these resources include Fort Randall, the Trudeau Post, the Papineau Post, and the Whetstone and Greenwood Agencies. This region can be expected to contain wrecks of steamboats near and in the Missouri River.

## **Management Considerations**

Most sites in this region are near the Missouri River. Many were inundated by Lake Francis Case. The river has been both the focus of human use of this region and the greatest threat to historic resources. Sites on the river banks require regular monitoring and action to prevent their loss to erosion and looting.

## **Sites Listed in the National Register of Historic Places**

39GR15 (Fort Randall)

## Region 15: Yankton

### Setting

The Yankton Region is defined as that area south of Highway 50 from the Charles Mix-Bon Homme County line east to the South Dakota-Iowa border. This area encompasses Missouri River valley, floodplain, breaks, and adjacent plains. The general topography consists of broad, flat floodplain zones, steep breaks and bluffs, and rolling plains. The area is drained by the Missouri River. The confluence of three major drainage basins, the James, Vermillion, and Big Sioux, is located in this region. Gavin's Point Dam is also located in this region. The region covers most of Bon Homme County, a small portion of southwestern Hutchinson County, and the southern portions of Yankton, Clay, and Union counties. The natural vegetation consists of deciduous trees and shrubs in floodplains and draws, with mixed and tallgrass prairie on the terraces, dissected river bluffs, and plains. Today, the area is used primarily as farmland.



*Figure 165. Yankton archaeological region (ARC photo).*

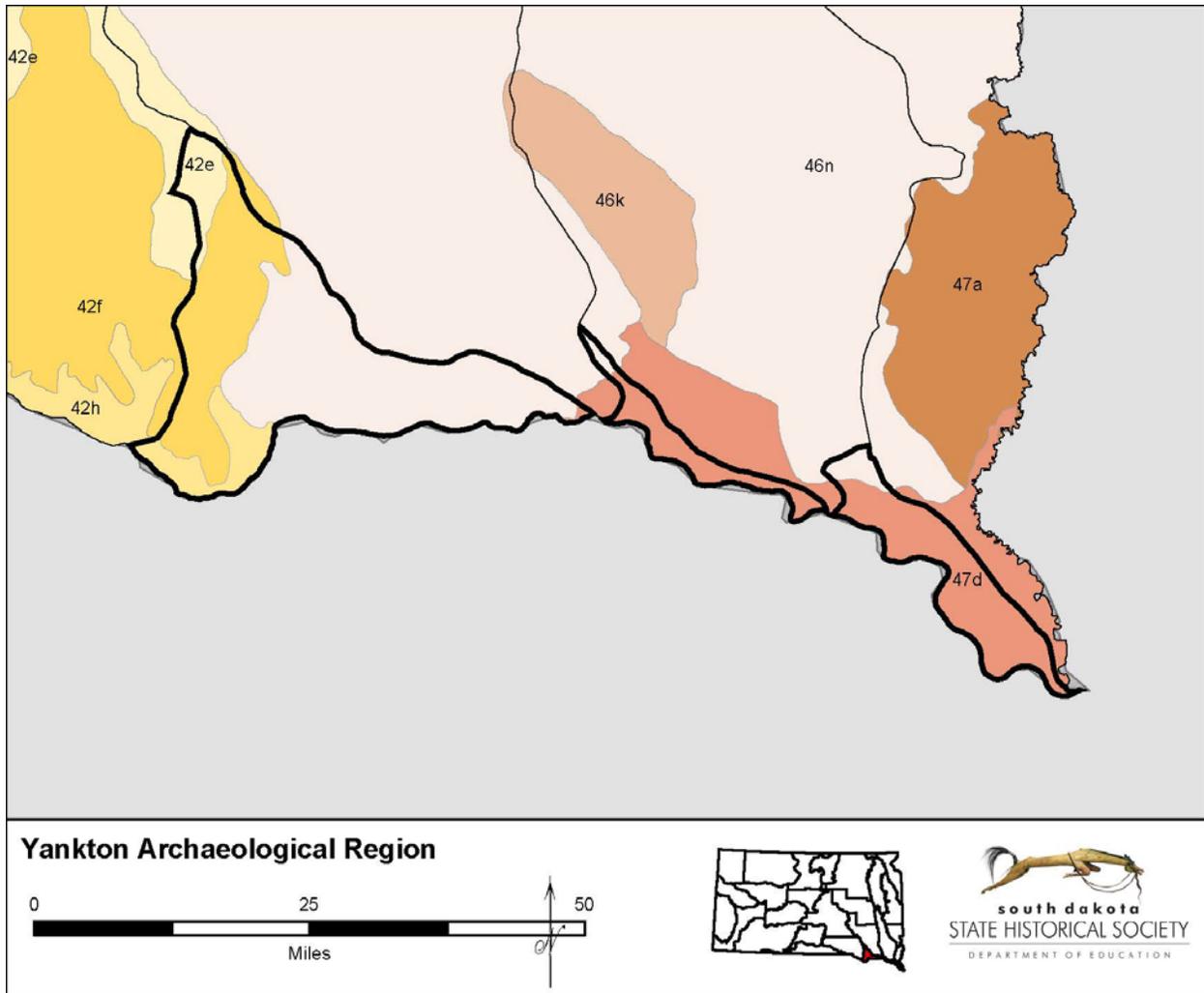


Figure 166. Ecoregions of the Yankton archaeological region.

42: Northwestern Glaciated Plains

42e: Southern Missouri Coteau, glaciated, gently undulating topography; scattered areas of high wetland density

46: Northern Glaciated Plains

46k: Prairie Coteau, glaciated platform of hummocky, rolling terrain raised above surrounding drift plains; stream network lacking; high concentration of large lakes and wetlands.

46n: Lower James River, glaciated level to slightly rolling plain composed of glacial drift; dense concentrations of temporary and seasonal wetlands.

47: Western Corn Belt Plains

47d: Missouri Alluvial Plain, level floodplain alluvium; riparian wetlands largely drained.

## Previous Archaeological Investigations

The overview of previous archaeological research in the Yankton Region is similar to that provided for other regions along the Missouri River in South Dakota. Early investigations were conducted by Over (Sigstad and Sigstad 1973) of the University of South Dakota Museum. Personnel associated with the RBS conducted surveys and limited test-excavations in the area (e.g., Hall 1961; Hall and Hall 2004). The US Army Corps of Engineers has funded surveys, test-excavations and literature searches (Blakeslee and O'Shea 1983; Caldwell 1966; Clark *et al.* 2008; Holst 2007; Ludwickson *et al.* 1981; Zimmerman and Bradley 1978), while the National Park Service sponsored a survey of the west bank of the Big Sioux River (Sigstad 1973a) and Lewis and Clark Lake (Howard and Gant 1966). The South Dakota Historical Preservation Center supported two survey and inventory projects (Hananberger 1980; Keller and Buechler 1979). Large contract projects include surveys for buried cable lines (Buechler 2007b), rural water systems (Gillen 1994; Kogel 2006; Winham and Lueck 1994b), and flood damage assessment (Rood 1993). In addition, several small-scale contract projects have been conducted in the region since the late 1970s for bridge and road repair, gravel pits, small irrigation and livestock watering systems, cable and electric lines, wastewater treatment facilities, trails, boat ramps, and National Guard bivouac sites.

Several sites have been excavated in the region. A multicomponent village site, the Gavin's Point Site (39YK203), was the focus of two excavation projects. Under the Smithsonian Institution-River Basin Surveys program, the site was initially recorded as a scatter of pottery, chipped stone artifacts, bone fragments, and shell visible in a plowed field and eroding from the bank of the Missouri River (Brown 1968; Newman 1960). The Over Museum later sponsored excavation of 12 test units and six cache pit features. These indicated a village site with Middle Woodland, Late Woodland, Great Oasis, and Protohistoric Yankton components (Hall 1961; Hall and Hall 2004). Three test units dug in 1978 indicated the presence of intact stratified deposits (Zimmerman and Bradley 1978). A bank stabilization project in the 1980s required monitoring of impacts to the site (Lueck and Hannus 1987). Shovel tests were conducted in 1993 to determine the eastern boundary of the site. One of these unearthed Woodland pottery, and a single test unit was dug to recover the remaining portion of the vessel. No other features or artifacts were found with the Woodland vessel, but other shovel tests turned up additional pottery, flakes, shell, and worked catlinite (Haberman 1993b). Later survey projects found that cultural materials extended from 39YK201 to 39YK203. The two sites were combined under the 39YK203 designation but later split again because of differences in the physical setting of the two portions of the cultural deposit (Clark *et al.* 2008; Holst 2007). Material from the site was included in a study of the ceramic sequence of northwestern Iowa (Peterson 1967) and a study of shell from archaeological sites in the northern Great Plains (Warren and Oliver 1998).

A survey along the unimpounded stretch of the Missouri River below Fort Randall Dam included test excavation of several sites. Of these, 39BO25, 39BO26, 39BO31, 39BO32, 39BO33, and 39BO209 lacked subsurface cultural deposits or had very shallow deposits (less than 20 cm deep) (Hananberger 1980). Site 9BO33 appeared to be the most complex of these sites, with possible Paleoindian and Archaic materials (as reported from the landowner's surface collections) and a Plains Woodland component indicated by a large number of fully grooved axes and mauls and projectile points and other tools. At the time of the study, one Woodland projectile point, 136 flakes, and six cores were collected from the surface, but little was found in the two test units. Site

39BO25 is a Late Archaic or Plains Woodland site that had a shallow deposit of chipped stone tools, cores, and flakes, and one ground stone axe. The remaining sites lacked diagnostic artifacts. More substantial cultural deposits were observed at 39BO28. This was recorded as an artifact scatter exposed on the surface and in a creek bank. It appears to be an Oneota camp site, based on the presence of shell-tempered pottery, scrapers and other chipped-stone tools, burned bone, bone and shell fragments, fire-cracked rock, and a burned earth feature. Another possible camp, 39BO23, had chipped stone artifacts, fire-cracked rock, and bone to depth of 38 cm, but lacked any artifacts that could indicate an age for the site.

Surveys in 1982 discovered a Plains Village occupation site (39BO44) eroding from a cutbank (Blakeslee and O'Shea 1983). The site was subsequently test-excavated (Brockington 1987) and discovered to be contiguous with sites originally recorded under numbers 39BO53, 39BO56, 39BO57, 39BO58, and 39BO59. These localities were combined under the 39BO44 number. The test excavations and reexamination of the site by survey crews in 2003 revealed a complex, deep, stratified cultural deposit. Cultural levels—defined by concentrations of bone, fire-cracked rock, shell, and artifacts—were observed at 30, 40, 57, 80, and 100, 120, and 140 cm below surface (Holst 2007). Although diagnostic artifacts were lacking, the presence of undecorated ceramic sherds and radiocarbon dates of 1500 and 1100 CE indicate a Plains Village age for some of the deposits.

Test excavations at an Oneota occupation site, 39CL9, determined that it contained intact deposits. The site contained burned bone, bone and shell fragments, chipped stone tools, flakes, and Late Prehistoric projectile points. Pottery at the site had shell tempering and decorations typical of the Oneota cultural complex (Bradley *et al.* 1996 [Phase II], Bradley *et al.* 1996 [Phase III]; Alex 1994). The excavations were not sufficient to reveal the kind of shelters in use or the form of the camp or village.

An apparent bison kill site (39CL10) appeared as a layer of bone exposed in the bank of an abandoned river meander channel (Mandel 1992). Besides numerous bison bone elements, researchers observed one canid bone, projectile points, butchering tools, and two hearths. Based on the projectile points and a series of radiocarbon dates on charcoal, the site dates to the Middle Archaic period.

Shovel tests at 39BO45--a scatter of ceramics, chipped-stone artifacts, bone, and charcoal associated with a series of surface depressions--yielded additional artifacts, maize kernels and other seeds, and charred maize cobs. Ceramics indicated a Woodland occupation, possibly Great Oasis, and a single radiocarbon sample from a hearth dated to 1500 CE (Blakeslee *et al.* 1983; Clark *et al.* 2010; Straight *et al.* 2007). Site 39BO55 is a Yankton Indian site dating to the protohistoric and early reservation period. The site has not been test excavated but is thought to be likely to provide significant information (Blakeslee *et al.* 1983; Clark *et al.* 2010, 2016; Holst 2007; Straight *et al.* 2007).

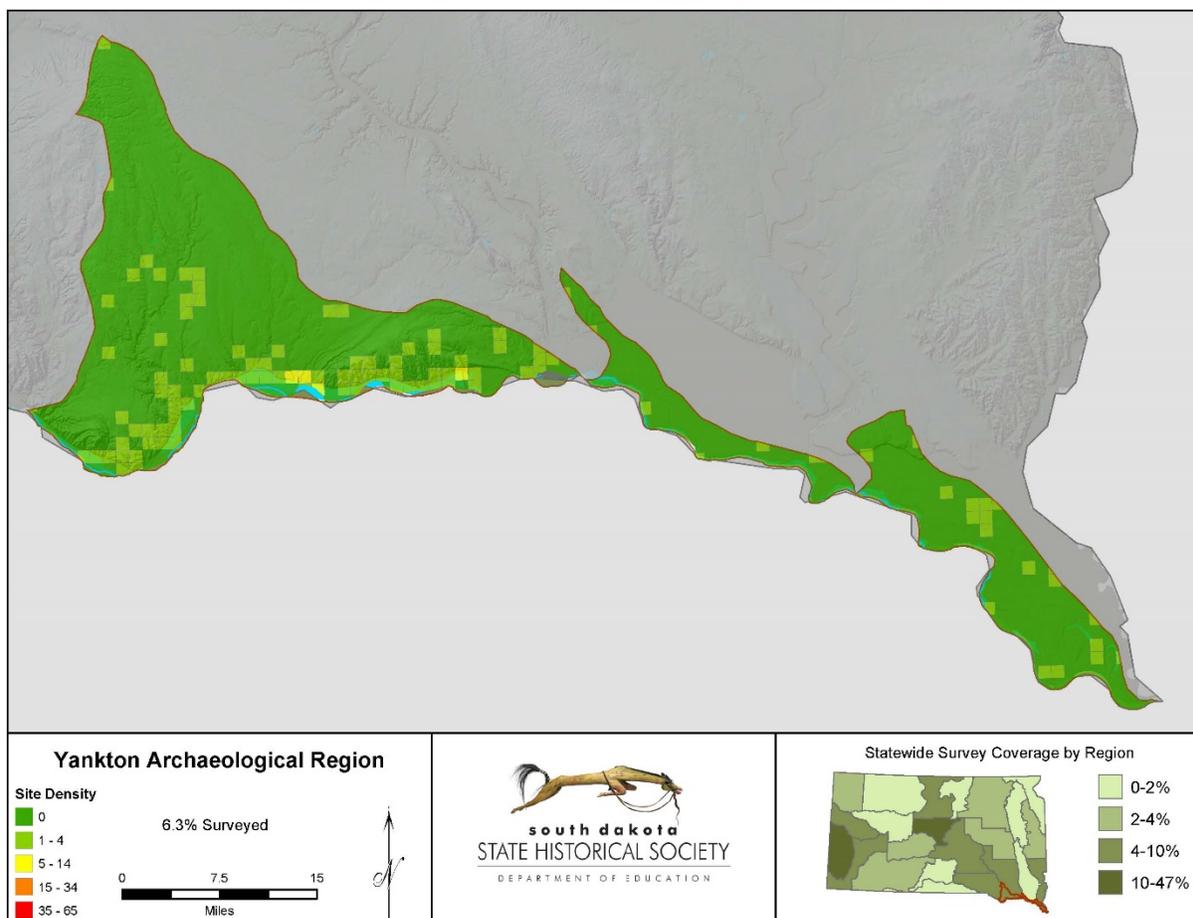


Figure 167. Density of known archaeological sites, Yankton archaeological region.

## Historic Contexts

The Yankton region contains two confirmed discoveries of Paleoindian material. A local resident reported finding an Angostura projectile point in Clay County (recorded as 39CL7), but archaeologists found no other artifacts there (Lueck 2005). Excavations at the Bliss Hill Site (39CL9) revealed a Goshen projectile point and two bones from an extinct form of bison (Bradley *et al.* 1996). This was a multiple-use bison processing and flint knapping site apparently associated with a bison kill site at 39CL10. Activities there included extraction of fats from bone marrow and tanning bison hides; however, the site contains Paleoindian through Late Prehistoric materials, and it is not clear whether the activities changed over time. These finds, and the presence of deeply buried Late Archaic deposits at 39CL10, confirm the presence of Paleoindian components in the region but suggest they are likely to be relatively small and deeply buried. Pleistocene age *Bison occidentalis* remains washed out of the tailwaters of Gavin's Point Dam (Swegle 1980), which again suggests that intact early sites may exist in the region. The Bliss Hill site (39CL9) had projectile points dating to the Early and Middle Archaic periods, as well as earlier and later components (Bradley *et al.* 1996). The remains of a Late Archaic bison kill were found in a cut bank at 39CL10 (Mandel 1992; Bradley and Mandel 1995).

The region has a wide variety of Woodland components, including individual burials, burial mounds, campsites, and possible villages. Blakeslee and O'Shea (1983) and Ludwickson (*et al.* 1981) report St. Helena phase materials in the Gavin's Point area of this region. The Besant-like projectile points at 39BO67 suggest a Woodland component; however, the site has not been excavated. Site 39BO201/39BO203 appears to be a Woodland village, but unfortunately excavations done there in 1961 and 1962 were never fully reported. It appears that the site contained Late Woodland Loseke Creek pottery of the Scalp Punctate and Ellis Cord-Imprinted varieties (Clark 2008). Other occupation sites that remain to be studied are 39BO49, 39BO209, 39YK201, 39YK207, and 39YK209. Perhaps the best-studied Woodland site in the region, Gavin's Point (39YK203), contained both Middle (Valley complex) and Late (St. Helena, Loseke Creek) Woodland components, along with presumably later Great Oasis material (Hall and Hall 1984). Although excavations were very limited, the site clearly has stratified deposits representing different periods of occupation. The presence of cache pits associated with the Great Oasis component suggests that it may represent a village (Hall and Hall 1984) and suggests maize horticulture. Because very little is known of Woodland cultures in South Dakota apart from burial mounds and pottery types, these habitation sites hold the potential for significant new data on settlement patterns, migration versus in situ development, the development of maize horticulture, the use of native cultigens, house types, and the origins of the complex village cultures of the following period, including Great Oasis, Mill Creek, and Initial Middle Missouri.

Several Great Oasis sites are known from the Yankton region. The core area for Great Oasis is to the east in northwestern Iowa and southwestern Minnesota, extending along the Missouri River into southeastern South Dakota. This early Plains Village culture dates 900 to 1300 CE and is recognized by its distinctive pottery. Depressions on the surface of 39BO45 may represent the remains of earth lodges. Charcoal, bone, fire-cracked rock, chipped stone debris, pottery, and charred corn were found on the surface and at about 20 cm below surface, but test excavations were too limited to determine whether the surface depressions are from earth lodges (Blakeslee and O'Shea 1983:266; Holst 2007). Because very few Great Oasis sites have been excavated (Johnson 1994:197), this site has great potential for questions about the Woodland-Plains Village transition. Great Oasis overlaps with each, and appears to have both incubated and coexisted with the eastern variant of the Initial Middle Missouri tradition (Tiffany and Alex 2001; Lensink and Tiffany 2005; Ahler 2007; Tiffany 2007a). The possible presence of early maize at the Gavin's Point Site is of special interest because Great Oasis is thought to be the first culture in the northern Great Plains for which maize was a major crop (Tiffany 2007a). If 39BO45 actually has house features, it would provide much-needed information on western Great Oasis settlement and lodge types. Together with many Initial Middle Missouri and Terminal Woodland complexes (Mill Creek, Over Focus, and Cambria), Great Oasis sites may be the remains of the villages of the Siouan-speaking groups from the Southeast who would eventually converge to form the historic Mandan nation (Schlesier 1994:342–346). Surface collections from the Gavin's Point site (39YK203) included Woodland pottery types, such as Valley Cord-Roughened and Feye Cord-Roughened, along with Great Oasis and Middle Missouri (Arzberger) types (Brown 1968), suggesting that Great Oasis developed in place from Woodland precedents.

The village site recorded as 39BO44 contained charcoal and bone middens exposed in a cut bank at various levels. Test excavations and surface survey there noted fire-cracked rock, bone, shell, chipped stone debris, and a few pottery sherds. Two radiocarbon dates (1500 CE and 1100 CE) place the site in the Plains Village period, but its specific cultural affiliation is unknown

(Brockington 1984). Other possible Plains Village tradition camp or village sites have not been sufficiently studied to identify their likely cultural affiliations. Other sites that appear to represent villages are 39BO40 and 39YK36.

The Yankton archaeological region is important to studies of western Oneota culture. Sites in the region and extending north along the lower James River represent the westernmost extent of the Oneota complex. Oneota sites in the Upper Midwest date from 1000 CE to Protohistoric times, emerging as the historic Iowa, Oto, Omaha, Ho-Chunk and other speakers of Siouan languages (cf. Mott 1938). Distinctive shell-tempered pottery with trailed designs is a hallmark of Oneota culture. Later sites tend to contain catlinite objects, such as pipes and cutting boards. Evidence for farming is weak in Oneota sites. These groups may have traded for produce such as corn and beans, maintaining only small plantings of their own crops. Oneota groups had ties with Mississippian cultures to the east and south. Because fortifications appear at localized village complexes contemporaneous with evidence for entry of Oneota groups into an area, they are often viewed as aggressive intruders. Oneota sites include both small camps and larger villages. It is unclear whether these consistently represent seasonal patterns or indicate variability among Oneota groups.

An Oneota village, 39CL1, covers portions of the river bluff at the mouth of the Vermillion River. Although not formally excavated, the site appears to have a subsurface prehistoric Oneota component as well as a protohistoric one (Alex 1994). The older component is most similar to the Olivet Oneota culture defined for the lower James River (R. Alex 1981) and hypothesized to date from 1000 CE to sometime before 1650 CE. The later, Protohistoric, component probably represents Iowa groups associated with those at the better-studied Blood Run/Rock Island site on the South Dakota-Iowa border (Mott 1938:302). Late Oneota components also occur at 39CL9 and 39CL10 (L. Alex 1994). Site 39BO28 is a possible Oneota camp site in a creek bottom. It had burned bone, shell, fire-cracked rock, and shell-tempered pottery on the surface, with cultural deposits extending to 60 cm below surface in a cut bank. As at 39CL1 and the James River sites, the pottery is more similar to Minnesota types than to the proto-Iowa Orr focus of Iowa (Hananberger 1980). The site contained a fairly large number of scrapers, suggesting processing of hides for trade or in conjunction with a seasonal hunt. A possible bison kill and processing component at 39YK39 was identified as Oneota (Blakeslee and O'Shea 1983). In comparison with areas farther east, Oneota sites in South Dakota contain low proportions of shell-tempered pottery, as opposed to other types (Alex 1994). The relationship between the early and late Oneota components is not yet understood (Alex 1994). Another culture transition between Woodland and Plains Village in northeastern Iowa is the Mill Creek complex (Blakeslee and O'Shea 1983), but the presence of this complex in the Yankton region is poorly understood at present.

Two Protohistoric Yankton sites are known from the area. A Protohistoric component overlays a Great Oasis component at 39YK203; however, no excavation report is available for the two projects done there. A scatter of glass, stoneware, chipped stone, and bricks at 39BO55 is listed as Yankton-affiliated because it dates to the time when the location was part of the Yankton reservation.

Two early fur-trade posts were built just west of the Yankton archaeological region. Jean Baptiste Trudeau built the first, known as the Pawnee House, on the Nebraska side of the river in 1794 (Greene 2005). The Loisel House was built nearby around 1808; it burned in 1810. The Corps

of Discovery under captains Meriwether Lewis and William Clark visited Spirit Mound, just outside the Yankton archaeological region in 1804, because the Oto living downstream had told them of this sacred place guarded by mysterious beings (DeVoto 1953:22–23). In 1811 and 1825, the Ponca signed peace treaties with the US government to allow free passage through their territory at the mouth of the Niobrara River (Howard 1965, 1972). Another fur-trade post was built just west of the region in 1826 (Greene 2005). By 1831, steamboats were making regular runs up and down the Missouri to bring hides to St. Louis. The remains of a steamboat have been found in the region, but no attempt was made to excavate this site (Putz 1983). It appears that the wreck is on the Nebraska side of the river.

Under an amendment to the 1851 Fort Laramie Treaty, the Yankton and Yanktonai, then living in earth lodge villages farther north on the Missouri River, began receiving annuity goods from the US government (DeMallie 2001). In 1851, the US built Fort Randall to protect steamboat travel, to protect non-Indians visiting lands along the Missouri River, and to maintain peace between the Ponca and the Dakota and Lakota groups with whom they were competing for buffalo grounds along the river (Greene 2005). Although the area had been reserved for Indians under the Fort Laramie Treaty, homesteaders soon began claiming lands around what would become the town of Yankton. Under pressure from the US government, the Ponca and Yankton signed agreements in 1858 relinquishing their lands with the exception of a 400,000-acre reservation for the Yankton on the Dakota side and a smaller reservation for the Ponca on the Nebraska side.

By the late 1860s, the region was being rapidly settled by Scandinavians, Czechs, and German-Russian Hutterites and Mennonites. The first Hutterite colony in North America was established in Bon Homme County in 1874.

The Dawes Allotment Act in 1887 broke the Yankton reservation into individual homesteads, with “surplus” (unallotted) lands sold to the US government in 1894. The current Yankton reservation, reduced to about 39,000 acres, lies just to the west of the archaeological region in Charles Mix County. Private farms and Hutterite colonies make up most of the region today.

## **Sites by Period**

*Paleoindian:* 39CL7?

*Paleoindian or Middle Archaic:* 39BO51

*Early Archaic:* none

*Middle Archaic:* 39CL9, 39CL10

*Late Archaic:* 39BO67 (Besant), 39CL9, 39CL10

*Unspecified Archaic:* 39CL9, 39YK203

*Woodland:* 39BO41, 39BO45, 39BO67, 39BO201, 39BO206?, 39BO209, 39UN9, 39UN10?, 39YK1, 39YK3, 39YK39, 39YK201, 39YK202, 39YK203, 39YK205, 39YK209

*Oneota:* 39BO28, 39CL1, 39CL9, 39YK39

*Late Prehistoric:* 39BO33, 39BO67, 39CL10

*Woodland or Plains Village:* 39BO49, 39YK36

*Plains Village:* 39BO25, 39BO28, 39BO40, 39BO44, 39BO45 (possible Great Oasis component), 39YK203 (Great Oasis)

*Protohistoric:* 39BO55 (Yankton), 39YK203 (Yankton)

*Historic:* (Artifact scatter unless otherwise noted.) 39BO1 (Hutterite colony), 39BO11 (Hutterite colony), 39BO24 (townsite), 39BO37 (townsite), 39BO38 (artifact scatter), 39BO39 (transformer station), 39BO43, 39BO45 (dump), 39BO47, 39BO48 (farmstead), 39BO55 (depressions), 39BO66 (farmstead), 39BO78 (farmstead), 39BO79, 39BO80, 39BO81 (farmstead), 39BO86, 39BO92, 39BO93 (farmstead), 39BO94 (farmstead), 39BO97 (farmstead), 39BO104 (dump), 39BO105 (dump), 39BO106 (bridge abutments), 39BO115 (farmstead), 39BO2030 (road), 39CH229 (foundation), 39CL24 (hunting camp), 39CL25 (dump), 39CL26 (dump), 39CL32 (foundation), 39CL2007 (railroad), 39CL2034 (street), 39UN4 (cemetery), 39UN8 (brick kiln), 39UN16 (dump), 39UN17, 39UN19, 39UN20, 39UN27 (farmstead), 39UN28 (farmstead), 39UN29 (farmstead), 39UN30, 39UN31, 39UN32, 39UN33, 39UN34, 39UN35, 39UN36 (school), 39UN37, 39UN38, 39UN39, 39UN40, 39UN2128 (airport), 39YK37 (farmstead), 39YK46, 39YK49, 39YK51, 39YK52 (cemetery), 39YK70 (farmstead), 39YK71 (depression), 39YK73 (bridge), 39YK74, 39YK2003 (railroad)

## **Prehistoric and Historic Themes**

*Expansion of Woodland-Plains Village Cultures.* Although little archaeological research has been done there, the Yankton region will be important in sorting out the sequence of Late Woodland and early Plains Village cultures locally and to the east. Sites in the Yankton region lie on the western edge of the Great Oasis, Mill Creek, and Oneota cultural areas; thus, the archaeological data from the region can be expected to illuminate the extent to which the Plains Village tradition and such characteristics as compact, fortified villages, spherical pots, and intensive maize agriculture were imported, as opposed to developing in place from local Woodland cultural traditions. The origin of various indigenous ethnic groups is also tied to this inquiry. This region appears to have been home at one time or another to the ancestors of today's Iowa, Mandan, Ponca, Omaha, Cheyenne, Dakota, and Yankton, but more research is needed before archaeologists can confidently link them to particular sites. Relevant sites are 39BO25, 39BO28, 39BO40, 39BO41, 39BO44, 39BO45, 39BO49, 39BO67, 39BO201, 39BO206?, 39BO209, 39CL1, 39CL9, 39UN9, 39UN10?, 39YK1, 39YK3, 39YK36, 39YK39, 39YK201, 39YK202, 39YK203, 39YK205, 39YK209.

*Yankton and Other Native Sacred and Traditional Sites.* Elk Point takes its name from a Yankton and Dakota term translating to "where they shoot elk," referring to a tradition of elk hunting on the prairie between the Missouri and Vermillion rivers (Howard 1976:297; Poole 1988:145; Warren 1922:64). This was the site of a Yankton village (Howard 1976:297). Another Yankton village was where the city of Yankton is now (Howard 1976:296). Another Yankton village was at the mouth of Choteau Creek on the west side of the Yankton archaeological region. This was associated with the Bad Nation band (Howard 1976:295). The Yankton term for Choteau

Creek refers to a fight between a jealous wife and her rival; a Yankton band takes its name from this creek (Deloria 1987:104). The Ponca name for the same creek translates to Muddy Banks (Howard 1976:295). The archaeological site recorded as 39KY201 (Gavin's Point) was the location of Smutty Bear's Yankton village, the remains of which form the upper layer of cultural deposits (Howard 1976:296). Reportedly, Indians made salt at a saline spring somewhere in Bon Homme County; however, its more exact location is not recorded (Ehrenperger 1941:73). Emanuel Creek was called Wanagi Kaga, meaning Ghost-Impersonator, because a healer imitated a ghost there (Howard 1976:295).

***Hutterite History.*** The first Hutterite colonies in North America were located in Bon Homme County, where several colonies continue to prosper. Archaeological sites associated with the earliest of these colonies (39BO1 and 39BO11) are of undoubted historic significance; however, none have been formally studied yet.

## **Archaeological Potential**

The Yankton region has the potential to contain deeply buried sites dating to the Paleoindian and Archaic periods, as evidenced by the Middle Archaic bison kill at 39CL10 and the discovery of an extinct form of bison below Gavin's Point Dam (Mandel 1992; Swegle 1980). It is apparent that any such early sites will be deeply buried in remnant landforms protected from river and wind erosion, such as stream terraces and alluvial fans. This region can be expected to contain the wrecks of steamboats near and in the Missouri (Chittendon 1897).

## **Management Considerations**

Examination of deeply buried cultural components using geomorphological techniques would greatly benefit research into the archaeology of this region. Studies of Woodland, Mill Creek, Great Oasis, and Initial Middle Missouri sites in this region are needed to settle questions of the origins of the Plains Village pattern in the northern Great Plains. Small scale excavations are not adequate to provide the kind of data needed to better understand these important developments. Projects that can explore large portions of the sites via ground-penetrating radar, magnetometer survey, or excavation are needed to clarify the form of houses, villages, fortifications, garden plots, and the like. There is a need to assess whether the Vermillion Bluffs Village is Ioway (Orr focus) or some other variant of Oneota and whether the occupation is protohistoric or historic. Studies of contact-era sites are needed to outline the role of the fur trade, military forts, Indian reservations, and European ethnic communities in the region.

Many archaeological sites in this region have been lost to inundation and plowing; however, the region contains a large unimpounded stretch of the Missouri River and sites that extend well below the plow zone. Rather than dismissing plowed sites as damaged or destroyed, archaeologists need to identify and examine those places where undisturbed deep deposits exist.

## **Sites Listed in the National Register of Historic Places**

None

## Region 16: Lower James

### Setting

The Lower James Region encompasses the lower reaches of the James River Basin in South Dakota. This region includes all or portions of Yankton, Hutchinson, Aurora, Davison, Hanson, McCook, and Jerauld counties. The James Basin is a broad, shallow trough, 50–60 miles wide (Flint 1955). The surface of the basin is relatively flat with some gently rolling hills. The nearly level floor of the basin contrasts sharply with the rugged glacial features of the Missouri Coteau to the west and the Prairie Coteau to the east. In the center of the basin is the valley of the James River. The valley is a steep-sided, flat-bottomed trench, 30–100 feet in depth, and 1/2 to 1 mile in width. The modern James River meanders across the valley. The James River valley is a remnant of glacial Lake Agassiz, an immense meltwater lake dating to the terminal Pleistocene. Natural vegetation is dominated by mixed and tallgrass prairie. Nearly all the region today is used for farmland.



*Figure 168. Lower James archaeological region landscape (ARC photo).*

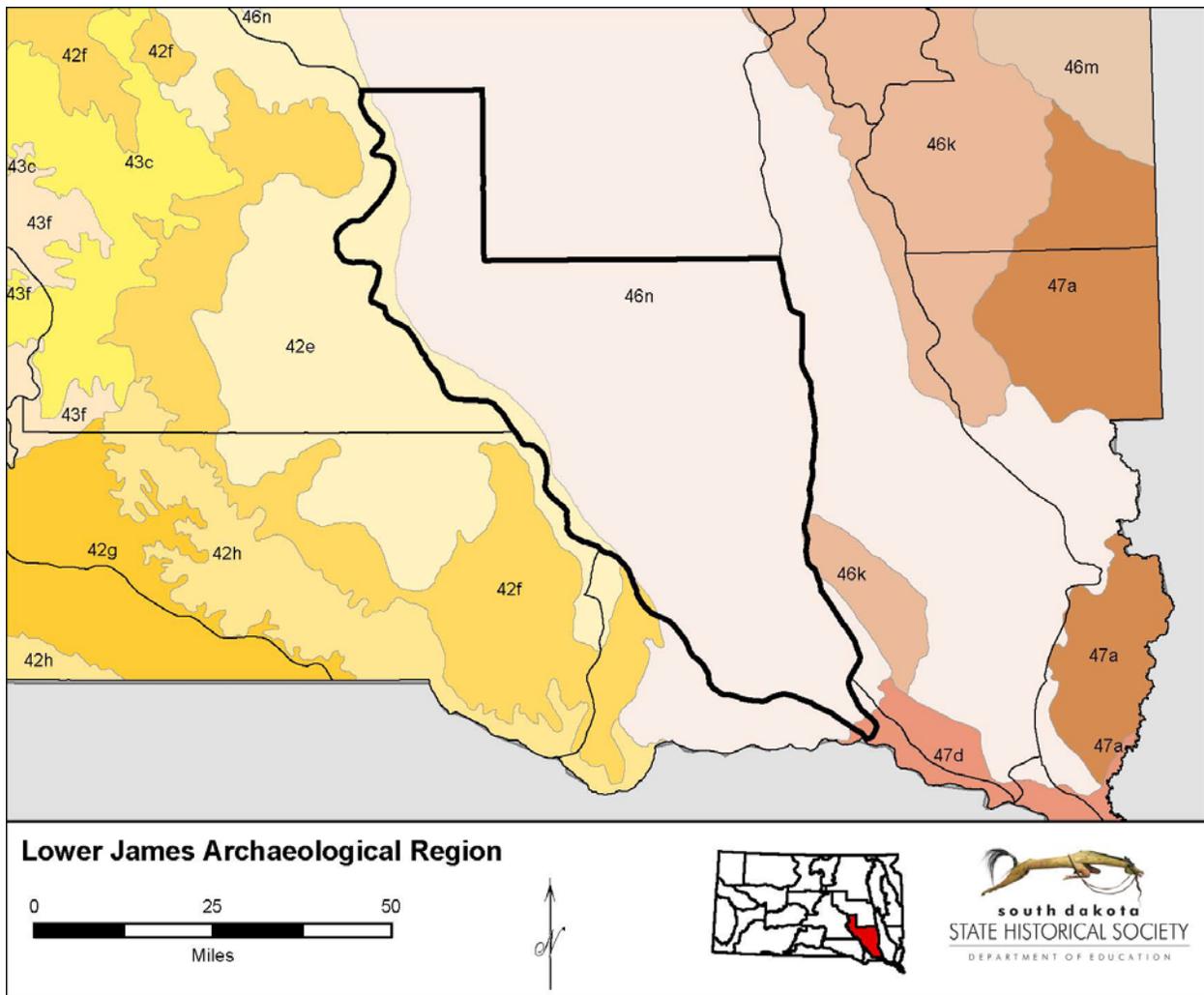


Figure 169. Ecoregions of the Lower James archaeological region.

42: Northwestern Glaciated Plains

42e: Southern Missouri Coteau, glaciated, gently undulating topography; scattered areas of high wetland density

46: Northern Glaciated Plains

46n: Lower James River, glaciated level to slightly rolling plain composed of glacial drift; dense concentrations of temporary and seasonal wetlands.

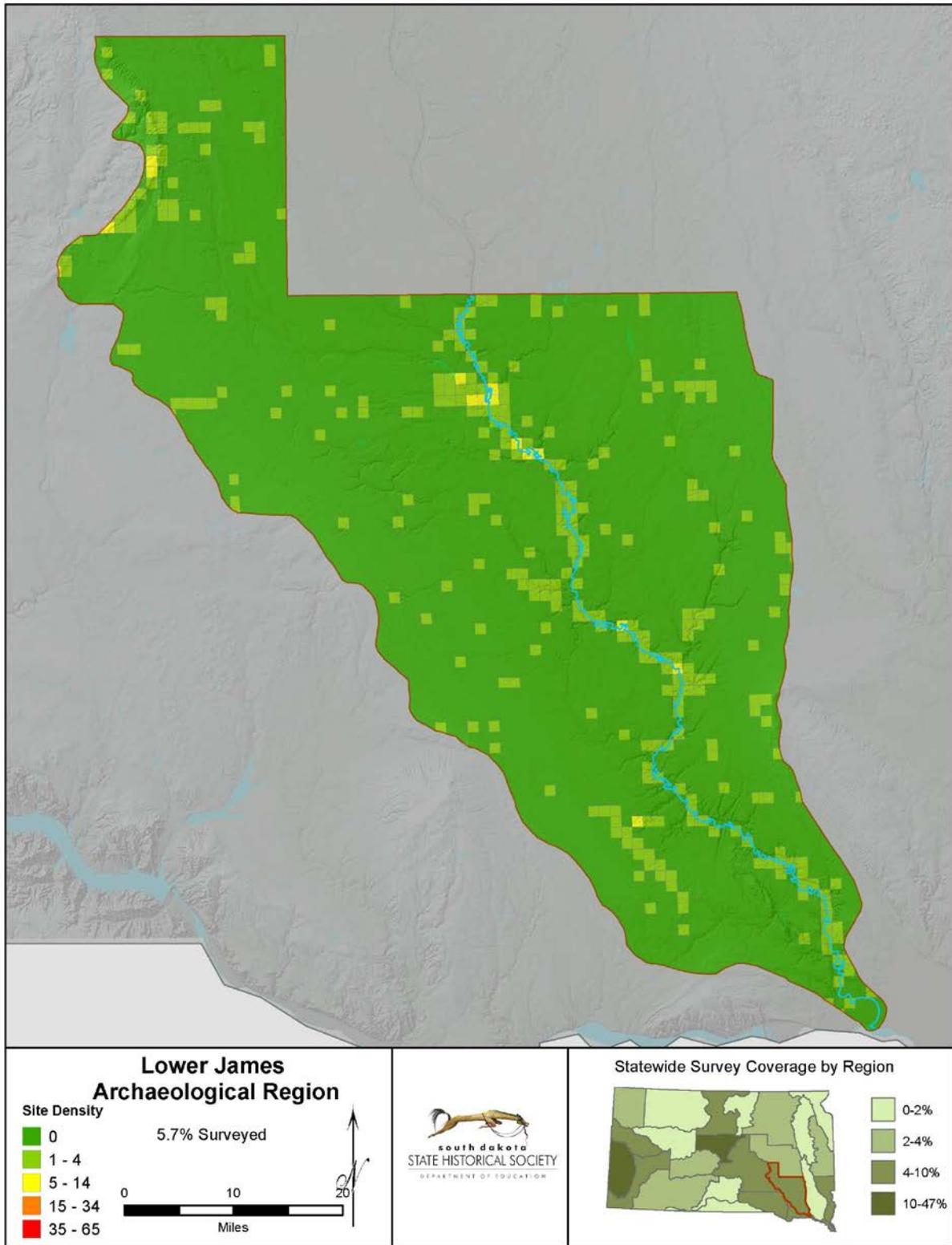


Figure 170. Density of known archaeological sites, Lower James archaeological region.

## Previous Archaeological Investigations

The earliest investigations in the area were conducted by W. H. Over of the South Dakota State Museum. Over recorded several earth lodge village sites and mound groups along the James River. F. C. Kratz, an amateur archaeologist and contemporary of Over, also made extensive collections in Hutchinson and Hanson counties. Kratz, a highway engineer, kept meticulous notes and drawings of his observations which are now curated at Archaeological Research Center (Sigstad 1974). Professional excavations of the Twelvemile Creek and Mitchell sites were conducted in the late 1930s by the State Museum (Meleen 1938, n.d.). Test excavations were also conducted in 1938 at the Bloom site (Kratz n.d.). In 1962, the Smithsonian Institution-River Basin Surveys and the W. H. Over Museum (formerly the University of South Dakota Museum) cooperated in salvage excavations at the Wolf Creek (Highway 44) Mounds in Hutchinson County.

In 1970, John S. Sigstad supervised the excavation of the Hofer Mound (Kant 1979). In 1971, Robert Alex, then of the University of Wisconsin, excavated two lodges at the Mitchell site and a small test trench at the Twelvemile Creek site (Alex 1981 b). As part of a Bicentennial reconstruction project in 1975, John S. Sigstad reexcavated one of the lodges previously examined by Alex. In 1977 and 1978, survey crews funded by the South Dakota Historic Preservation Center conducted reconnaissance level survey of the James River valley, adjacent bluffs, and lower reaches of tributary streams in Yankton, Hutchinson, Hanson and Davison counties (Buechler and Keller 1983). Limited test excavations were conducted at some of the recorded sites in 1978 (Buechler and Keller 1983). Beyond the James River valley, little research has been conducted in the region, apart from several small-scale surveys (Bleier *et al.* 2007; Buechler 1985a; Downing 2000; Gillen 1990; Gillen and Hannus 1990; Haakenson and Rom 2003; Miller 2009; Winham and Lueck 1994b).

In 1978, the Mitchell Prehistoric Indian Village Preservation Society appointed Darrell Fulmer as site archaeologist to direct the development of the Mitchell site as an ongoing scientific research and interpretive center. Field school students and Earthwatch volunteers have investigated the nature of the fortification ditches, defined additional structures in shallow depressions between the fortification ditches, and salvaged information from the terrace edge to enable bank stabilization to prevent further destruction of the site. A spacious interpretive center and laboratory have also been constructed. Since 1986, the Archaeology Laboratory of Augustana College has continued work at the site and has summarized the previous activities undertaken at the Mitchell site (Hannus *et al.* 1987). Subsequent grants have enabled expansion of the museum facility, the development of an interpretive trail and guidebook for the site, and continued limited excavation.

## Historic Contexts

**Paleoindian.** Only two Paleoindian sites are reported from the region. An Angostura-like point was reportedly found on a farm on unplowed land; however, a later survey was unable to find the site, if any, and the location was subsequently disturbed by agricultural activities (Archaeological Research Center records). Even less is known about a report of a Clovis point found on the bluffs of the James River north of Mitchell (Fosha 1994d). At present, there seems little reason to credit these reports.

**Archaic.** An Early Archaic dart point base was found on a terrace overlooking a small lake during a highway survey and recorded as 39HS91 (Byrne 2013). No other artifacts or features were noted at this location, which has not been test excavated. A more extensive site, 39HT38, may be of Early or Middle Archaic age, based on a basally-ground, wide, side-notched projectile point, discovered on a bluff of Wolf Creek. Other artifacts in the location were an endscraper, a biface fragment, flakes, chipping debris, and animal bone (Buecher and Keller 1983). The site has not been further investigated.

**Woodland.** Burial mounds are common in the James River valley (Buechler and Keller 1983). While most of these are assumed to be of Woodland age, those mound groups occurring near Initial Middle Missouri village sites (39DV1/39DV2/39DV3 and 39HS1) are generally thought to have been made and used by those later groups. Woodland materials were identified during excavations at the Freeman (Highway 44) Mounds (Gant n.d.) and the Hofer Mound, 39HT2. One of four mounds in the Hofer Mound group, a circular mound 100 feet in diameter, was excavated in 1970. The site contained human bone, including primary, secondary, and intrusive burials (Sigstad and Sigstad 1975).

Woodland habitation sites are less common than mound sites but have been reported by Gant (n.d.) and Buechler and Keller (1983). The Tabor Site, 39BO201, contained a scatter of Woodland (Scalp Creek ware) ceramics, chipping debris, and animal bone. The vertical and horizontal extent of this likely Woodland camp site are not known (Holst 2007). Several other sites lacked ceramics but were listed as Woodland based on projectile point types. These consisted either of chipped-stone artifact scatters in floodplain locations or on bluffs or terraces. The floodplain sites appear to have little potential as intact archaeological sites; however, the scatters found atop bluffs may indicate buried sites occurring near surface. One site, 39YK41, lacked ceramics but contained a Besant point, bifaces, scrapers, chipping debris, burnt animal bone, and fire-cracked rock exposed on a bluff top. These artifacts appeared to come from the upper 20 centimeters, but a basin hearth was exposed in a road cut at a lower level, and a series of shovel tests indicated the presence of two soil horizons, one at about 50 cm and the other at about 80 cm (Gillen 1990). The testing did not exceed that depth. The hearth was not dated, so it is not clear whether these finds indicate intact stratified deposits at this likely Woodland-era camp site. At present, the size, configuration, and usage patterns of Woodland occupation sites in this region are not known.

**Great Oasis.** Two Great Oasis sites, an occupation or village and an artifact scatter, have been reported from terraces of Firesteel Creek near Mitchell; however, neither has been formally investigated (Archaeological Research Center records).

**Initial Middle Missouri.** Sites in this region, including the Mitchell village and mounds (39DV1/39DV2/39DV3), Twelvemile Creek village (39HT1), Bloom village and mounds (39HS1), and the Goehring or Sheldon Reese village (39HS23) have been important in defining the Initial Middle Missouri variant (Meleen 1938; Sigstad and Sigstad 1973; R. Alex 1981a). These four villages are assigned to the Lower James phase of the Initial variant of the Middle Missouri tradition. These sites contained rectangular to square house pits, globular ceramic jars and bowls, chipped-stone and ground-stone tools, bone fishhooks and hoes. The houses contained central hearths and numerous bell-shaped subfloor storage pits.

The Mitchell Site is a village on the bluffs of the James River that had been fortified with a stockade and two ditches. The site contains 45 house depressions. Two houses excavated in the 1970s were rectangular structures supported by a double row of posts along the sides built over shallow pits, with clay- and rock-lined central hearths in the center of the house. House walls were constructed of wattle and daub with earth banked up along the outside the walls. In one house the packed-earth floor had been painted red. Activity areas within the house were marked by food-processing tools--including manos, metates, and grooved mauls--and hide-working tools. A few stone spheres and chunkee stones were found in one area. Near the entry ramp were an axe and two celts, probably used for cutting or working wood. Flint-knapping areas were indicated by blocks of local tool-stone (R. Alex 1981a). These excavations were the basis for studies of food remains and stone tool production (L. Alex 1993; Benn 1974; Keene 1973; Nepstad-Thornberry 1998; Sammis 1978). An earlier excavation project found human bone in some of the cache pits inside a house (Meleen 1938). Radiocarbon dates from hearth features within the house range from 910 to 1255 CE (R. Alex 1973). The houses contained bison and dog bone and a variety of wild and domesticated plant seeds. Subsequent excavations have illuminated more details of this culture and its relationship to other archaeological complexes in the region and beyond (Bettes and Henning 2016; Hannus *et al.* 1987; Johnson *et al.* 2007; Karr and Hannus 2013; Karr *et al.* 2010; Lippincott 2013; Winham *et al.* 1988).

Two mounds excavated there in 1938 contained the skeletal remains of 50 and 35 individuals, respectively. Both had central burial pits with additional human bone interred below the original ground surface. These central pits had been roofed with logs and the mounds constructed over them (Meleen 1938; R. Alex 1981a). Pottery from the mounds matched that of the village site (R. Alex 1981b:81–82).

Another mound near Mitchell (39DV4) was accidentally leveled by road construction activities, exposing six burials that had been placed in sub-mound pits in a flexed position. The position of the skeletons and the occurrence of recent materials around them indicated that the mound had been subject to other earthmoving activity in recent decades. The site contained the incomplete skeletal remains of four adults (female and male), one adolescent, and one infant (Buhta *et al.*, 2013; Molyneaux *et al.* 2004). The site contained very few grave goods: a few bone beads and some chipped-stone tools. Its age is thus a matter of speculation, but Initial Middle Missouri or Great Oasis affiliation seems most likely. This site appears to be the remains of the Overgaard mound group recorded by W.H. Over prior to development of this section of the city of Mitchell (Buhta *et al.*, 2013; Molyneaux *et al.* 2004).

The Twelvemile Creek Site (39HT1) is also located on a river bluff and appears to have been fortified, although evidence of a ditch and stockade is not entirely clear (Meleen n.d.; R. Alex 1981b). Excavation of an associated mound in 1939 showed a pattern of disposal of bodies in pits dug more or less randomly into the mound (Meleen n.d.; R. Alex 1981b). At least two other mounds are present near the village (Buhta *et al.* 2012). This site is notable for containing large amounts of shell from the Gulf Coast. A small excavation in 1971 yielded pottery, animal bone, and postmolds similar to those found at other Initial Middle Missouri sites in the region (Alex 1981a). Radiocarbon dates ranged from 950 to 1230 CE.

The Bloom site (39HS1) is a fortified village on a bluff overlooking the James River. It contains about 25 house depressions. The steep sides of the bluff nearly surround the village, with

a stockade protecting the narrow neck of land that connects it to the rest of the bluff (Alex 1981a). About 50 burial mounds were recorded in the vicinity prior to their destruction by plowing. The village has not been excavated; limited excavations of a mound in 1938 encountered several skeletons, suggesting that large numbers of people might have been buried in the mounds near the village. Early excavations at the Bloom site indicated that the burial mounds and the village were contemporaneous, based on ceramics.

The Goehring or Sheldon Reese village (39HS23) contains more than 60 house depressions and covers at least six acres (R. Alex 1981a). A 1 x 6 meter trench dug there uncovered pottery similar to that of the other Initial Middle Missouri sites in the area.

***Extended Coalescent.*** Ceramics from a private collection from 39JE7 in the Wessington Springs area indicate a possible Extended Coalescent presence in this region (R. Alex 1981a, 1981b).

***Oneota.*** In all, 14 sites in the Lower James region contained ceramics assigned to the Olivet phase of the Oneota tradition (L. Alex 1994; R. Alex 1981a, 1981b). Although some are listed as villages, all of these sites are located in floodplain settings, and none had recognizable house features (Archaeological Research Center records). These sites are the westernmost extension of the Oneota tradition. These sites may be related to the Oneota occupation of the Blood Run site, located in northwestern Iowa (Alex 1981a); however, the South Dakota sites are known only from surface scatters of ceramics, chipped-stone tools and debris, animal bone, ground-stone tools, and one catlinite pipe fragment (Archaeological Research Center records). The sites have all been disturbed by cultivation and/or deposition of silt by the James River. The location of these sites in the river floodplain lends support to the idea that they represent the short-term bison-hunting camps of Oneota groups with villages in Iowa or Minnesota (Henning 1998:398).

## Sites by Period

*Paleoindian:* 39DV5, 39HS49

*Early Archaic:* none

*Middle Archaic:* 39HS9?, 39JE13

*Unspecified Archaic:* 39HT37, 39HT38

*Late Archaic:* 39YK41 (Besant)

*Late Archaic or Woodland:* 39HT10

*Woodland:* 39BO103, 39DV7, 39DV11, 39DV20, 39HS2, 39HS3, 39HS7, 39HS13, 39HS17, 39HS22, 39HS25, 39HS32, 39HS42, 39HS43, 39HS47, 39HS68, 39HT1, 39HT2, 39HT14, 39HT16, 39HT22, 39HT24, 39HT27, 39HT29, 39HT30, 39HT33, 39HT42, 39HT64, 39HT78, 39HT83, 39HT86

*Woodland or Late Prehistoric:* 39HS32, 39HT13, 39HT17, 39HT20, 39HT26, 39HT64, 39HT83, 39HT85, 39HT88, 39YK2, 39YK22

*Late Prehistoric:* 39HT82, 39HT95, 39JE7, 39YK57 (Avonlea)

*Great Oasis:* 39DV29, 39DV30

*Plains Village:* 39DV1/39DV2/39DV3 (Initial Middle Missouri), 39DV25, 39DV54, 39HS1 (Initial Middle Missouri), 39HS23 (Initial Middle Missouri), 39HS46, 39HT1 (Initial Middle Missouri), 39HT3 (Initial Middle Missouri), 39HT25, 39JE2 (Initial Middle Missouri)

*Oneota:* 39DV21, 39DV23, 39HS34, 39HS38, 39HS39, 39HS40, 39HS41, 39HS42, 39HS45, 39HT53, 39HT57, 39HT60, 39HT63, 39HT68, 39HT73

*Protohistoric:* 39HT90 (gunflint)

*Historic:* (artifact scatter unless otherwise noted.) 39AU1 (fort), 39AU4 (dump), 39AU9, 39AU10 (school), 39BO61 (school), 39BO68, 39BO69, 39BO70 (dam), 39BO71 (dam), 39BO73 (dump), 39BO74 (burial), 39BO75 (school), 39BO95 (dump), 39BO96, 39DV34 (dump), 39DV43 (WWII bunker), 39DV47 (bridge), 39DV51 (well), 39DV52, 39DV53, 39DV55, 39DV59 (school), 39DV2003 (railroad), 39DV2007 (railroad), 39HS48 (fort), 39HS53 (foundation), 39HS69 (quarry), 39HS71 (dam), 39HS72 (cemetery), 39HS73, 39HS74, 39HS2003 (railroad), 39HS2007 (railroad), 39HT101 (depression), 39HT107 (school), 39HT110, 39HT113 (school), 39HT117, 39HT123, 39HN124, 39HT126 (well), 39HT127 (windmill), 39HT128 (windmill), 39HT131 (well), 39HT132 (bridge), 39HT133 (depression, foundation), 39HT134 (depression, foundation), 39HT136, 39JE14 (foundation), 39JE6 (burial), 39JE19 (school privies), 39JE29 (rock wall), 39JE31 (depression), 39JE2007 (railroad), 39MK19, 39MK2007 (railroad), 39MK2014 (railroad), 39YK56 (depression, foundation), 39YK78 (foundation)

*Historic farmstead :* 39AU6, 39AU11, 39DV32, 39DV40, 39DV41, 39DV42, 39DV45, 39DV46, 39DV49, 39DV50, 39DV57, 39DV60, 39DV61, 39DV62, 39HS50, 39HS54, 39HS55, 39HS57, 39HS59, 39HS63, 39HS66, 39HS67, 39HS70, 39HT99, 39HT108, 39HT109, 39HT114, 39HT115, 39HT116, 39HT118, 39HT121, 39HT122, 39HT125, 39HT129, 39HT130, 39HT135, 39JE6, 39JE15, 39JE16, 39JE20, 39JE21, 39MK15, 39MK16, 39MK17, 39YK48, 39YK55

## **Prehistoric and Historic Themes**

***Sacred Sites, Traditional-Use Sites, and Burials.*** The James River was known as the Yankton River, because Yanktonai villages were located along it and the Yankton/Dakota Rendezvous was held at the great bend of the James River (Upper James region) (Howard 1972:286–287, 296). Another name for the James was *cansasa* (red-willow) or *cansansan* (whitewood) (Howard 1972:296; Thwaites 1904–05(4):45; Warren 1922:110).

Emanuel Creek was called *Wanagi Kaga*, meaning Ghost-Impersonator, because a healer imitated a ghost there (Howard 1976:295).

***Mounds.*** The Lower James region contains burial mounds dated to the Woodland and Initial Middle Missouri periods. Although several mounds have been excavated, the relationship between Woodland and Plains Village mound construction and use is not well understood. The Initial Middle Missouri variant is widely thought to be ancestral to the Mandan, but whether this would push the presence of proto-Mandan groups back into the Woodland era in this region is an open

question. In addition, many mounds were assigned to the Woodland period without clear evidence that they are not later manifestations.

***Relationship of Various Plains Village Complexes.*** The distinction between Initial Middle Missouri, Great Oasis, and Mill Creek has not been clearly defined. These may represent local variants of a single culture or they may be distinct groups that developed similar life-ways on a Woodland economic base. Oneota sites in this region are limited to floodplain zones, suggesting temporary, perhaps seasonal use of the area by groups based to the east in Iowa and Minnesota. Does fortification of the Initial Middle Missouri sites indicate warfare between these seasonal visitors and the local populations? Or, as Robert Alex (1981a) proposed, had the Initial Middle Missouri villages been abandoned by the time Oneota people began to venture into the region? Some Initial Middle Missouri sites contain pottery similar to that found in Mississippian satellite communities in Illinois and Wisconsin; however, it is not yet clear what this signifies in terms of long-range trade and social interaction.

***Forts.*** One military fort has been recorded in Hanson County (39HS48). This outpost, known as Fort James, briefly served to protect settlers in southeastern Dakota Territory from Indian raids. The fort was constructed in 1865 and abandoned in 1866.

## **Archaeological Potential**

The Lower James region is important to questions of the development of permanent villages, long-range trade networks, and agriculture. The large body of information derived from investigations of the Mitchell site provides an example of the great archaeological potential of this region.

## **Management Considerations**

The area largely consists of farmland; thus, any sites have been preserved, at least in part. The Mitchell site represents a successful effort at site preservation and public education. State burial laws are in place to prevent wanton destruction of burial mounds, although these sites continue to be damaged by agricultural activities and urban development. The focus of archaeological activity has been on the James River and its major tributaries, and there is a need for basic inventory and site location in other parts of the region. Paleoindian and Archaic materials need to be documented and Woodland habitation sites associated with burial mounds identified. The region has good potential to address Late Woodland, Great Oasis and Initial Middle Missouri research questions. Protohistoric and historic resources of the region need basic definition. The region has the potential to reveal the archaeological footprint of the ancestors of today's Dakota, Yankton, Mandan, and Hidatsa people.

## **Sites Listed in the National Register of Historic Places**

39DV1/39DV2/39DV3 (village and mounds), 39DV9 (mound), 39DV24 (mound), 39HS1 (village and mounds), 39HS3 (mound), 39HS23 (village), 39HS48 (Fort James), 39HT14 (mound), 39HT27 (mound), 39HT29 (mound), 39HT30 (mound)

## Region 17: Middle James

### Setting

The Middle James Region encompasses all of Beadle and Sanborn counties, as well as portions of Hyde, Hand, Kingsbury, and Miner counties. Topographically, the area consists of the James River, adjacent bluffs, and gently rolling plains. Sand dunes form an unusual environmental zone in northern Sanborn and southern Beadle County. The western and eastern borders of the region conform to the margins of the Missouri Coteau and Prairie Coteau, respectively. The James River valley lies within the area covered by glacial Lake Agassiz, an immense meltwater lake formed during the end of the Pleistocene era. Native vegetation is mixed and tallgrass prairie, with stands of deciduous trees along some waterways. The region is farmland today.



*Figure 171. View of Middle James landscape (ARC photo).*

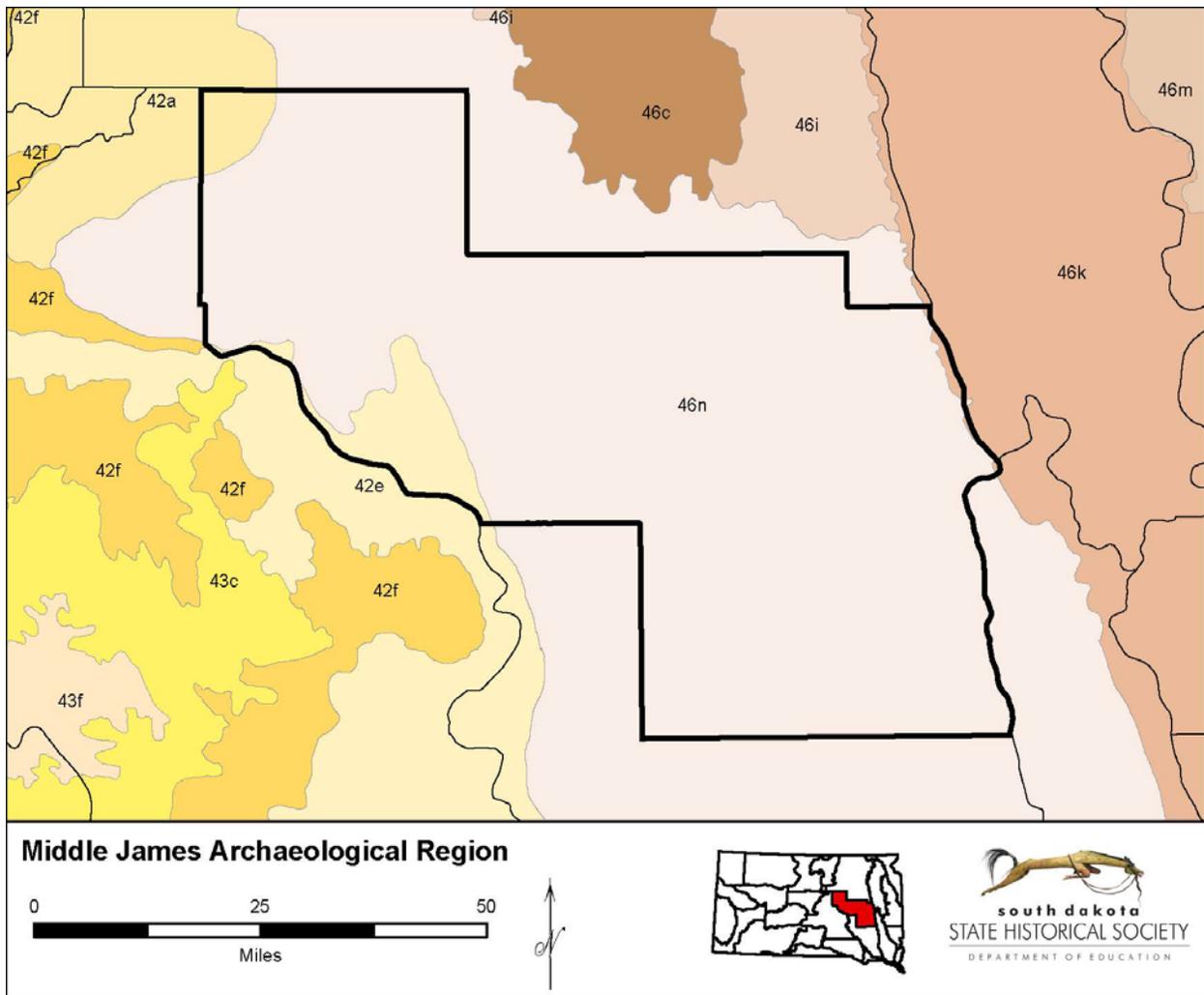


Figure 172. Ecoregions of the Middle James archaeological region.

42: Northwestern Glaciated Plains

42e: Southern Missouri Coteau, glaciated, gently undulating topography; scattered areas of high wetland density

46: Northern Glaciated Plains

46n: James River Lowland, glaciated level to slightly rolling plain composed of glacial drift; dense concentrations of temporary and seasonal wetlands.

## Previous Archaeological Investigations

Archaeological investigations in the Middle James region began in the 1930s when W.H. Over of the State Museum recorded sites along the James River valley and the western margin of the Missouri Coteau in Hand County (Sigstad and Sigstad 1973). Following Over's visits to the area in the early 1930s, little research was undertaken beyond small-scale surveys. In 1979 and 1980, archaeologists from the Archaeological Research Center surveyed the James River valley and adjacent bluffs and lower reaches of tributary streams (Buechler and Keller 1983; Haberman 1980). In 1982, Archaeological Research Center conducted a sample survey for the proposed

Cendak irrigation project in portions of the Middle James Region (Haug *et al.* 1983; Buechler 1985a, 1988f). Other surveys have been done in advance of cable and electrical lines, oil pipelines, a proposed supercollider site, rural water systems expansions, flood cleanup, rail line expansion, and highway repair (Byrne 1997, 2001; Buechler 1986, 2001; Chevance 1988; Downing 1998, 2008; Felix 2000; Fosha and Estep-Cumins 1990; Kogel 2008; Latham and Bolas 2001; Messerli 1984; Vaillancourt 2003; Winham 1989; Winham *et al.* 1996). A recent linear survey done in advance of construction of an oil pipeline included a small test excavation at a Woodland mound site, 39BE29 (Trader 1915). A historic preservation project in 2013 updated site records on mounds and other mortuary sites in the region (Buhta *et al.* 2013).

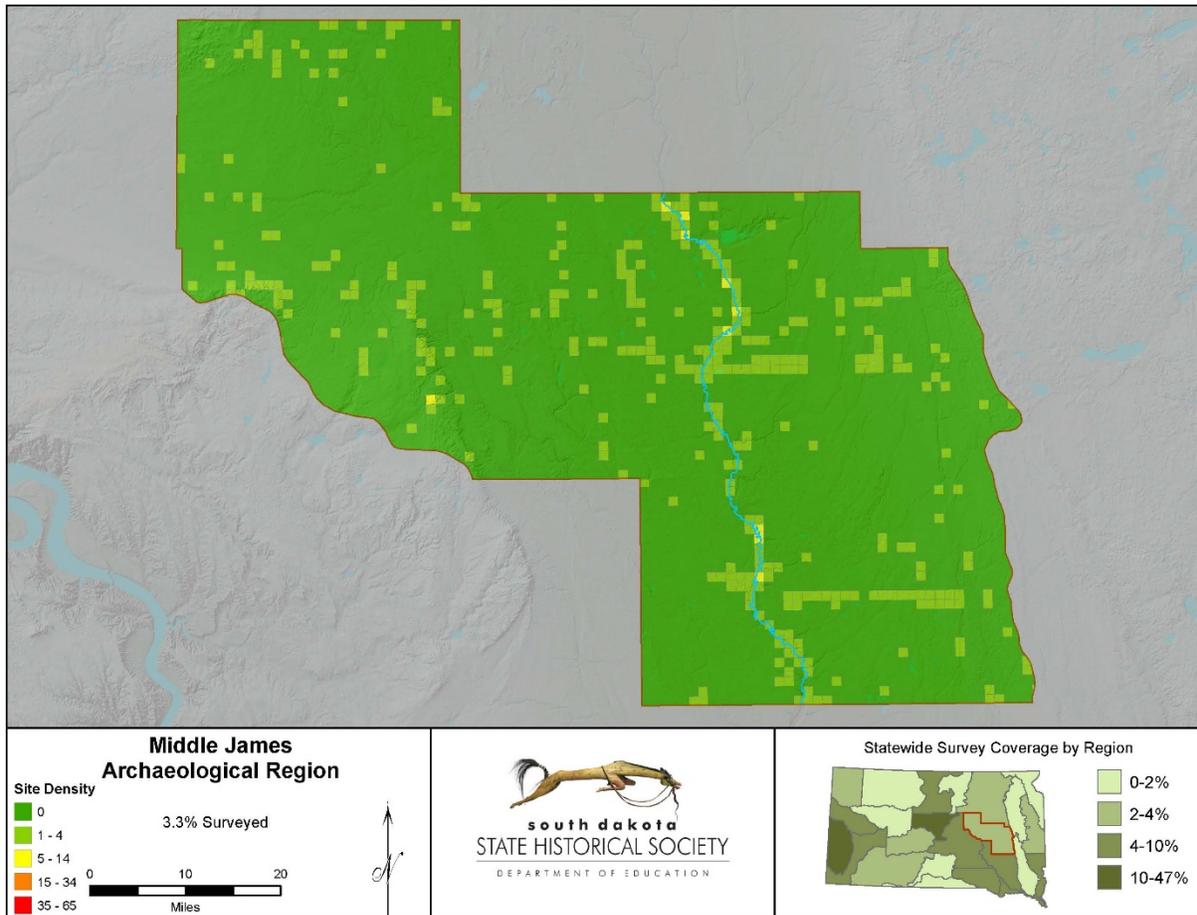


Figure 173. Density of known archaeological sites, Middle James archaeological region.

## Historic Contexts

***Paleoindian and Early Archaic.*** No sites pre-dating the Middle Archaic period have been identified in this region.

***Middle Archaic.*** A well-stratified site, 39BE122, exposed in the banks of the James River contains four or five components of which the second and fourth were dated to the Middle Archaic period. A single 1 x 1 meter excavation unit and several backhoe trenches revealed a column of at least six buried soil horizons in an alluvial terrace. The cultural deposits corresponded to buried A

horizons. All four (possibly five) cultural levels contained fire-cracked rock, chipped-stone tools and debris, bison and deer bone, and mussel shell. This indicates a series of residential or base camps at which a variety of activities took place (Donohue 2014). Component 2, at 180–200 cm below surface, was radiocarbon dated to 3690 BP, corresponding to the middle portion of the Middle Plains Archaic period. Component 4, at 260–300 cm below surface, was dated to 5140 BP, placing it at the Early Archaic-Middle Archaic boundary. This site is actively washing away, and excavations for emergency data-recovery are planned.

The only other Middle Archaic site in the region, 39SB54, is an artifact scatter on a level plain. It contained chipping debris, ground stone tools, a biface, and four projectile points, identified as Late Prehistoric, Woodland, and Middle Archaic (Hanna) types (Fosha and Estep-Cummins 1990c). The site has not been further investigated. Site 39BE29 is a Middle Woodland mound and village site that had two Besant points and a McKean point on the surface. It is not clear from current data whether these indicate multiple buried components.

**Late Archaic.** Late Archaic sites in this region are limited to isolated discoveries of projectile points in plowed fields: 39HD7 (unspecified corner-notched), 39HD9 (unspecified side-notched), 39KB41 (Besant), 39KB45, 39MN25, and 39SB77 (Pelican Lake).

**Woodland.** This portion of the Middle James region has 15 mound sites, most with one, two, or three mounds but others with nine or ten. These mounds either contained Woodland projectile points or pottery or are assumed to be Woodland based on their appearance (Buechler and Keller 1983; Haberman 1983c). Many of these mounds have been looted, but only one (39BE29) has undergone test excavation. Surface finds at these sites include ceramics, chipped stone tools and debris, a ground-stone abrading tool, stone mauls, and animal bone. The mounds are on stream terraces, bluffs, or low hill tops. Five Woodland sites with intact buried deposits have been found in the region: 39BE23, 39BE108, 39BE109, 39BE110, and 39BE115 (Buechler and Keller 1983; Haberman 1983c; Haug *et al.* 1983). These contain the same variety of artifacts as the mound sites. These potential occupation sites have not been text excavated. The Rose Hill site (39HD2 and 39HD4) is a Late Woodland village and a group of six conical and one ovate mound. The mounds and a portion of the village site are intact. Test excavations in 2011 confirmed that the portion of the village site inundated by Rose Hill Lake has been destroyed (Kruse 2011).

**Great Oasis.** Pottery from the Rose Hill Mounds site (39HD2) bears a strong resemblance to Great Oasis materials. Another site with mounds and a likely occupation level, 39BE29, also contained Great Oasis pottery.

**Plains Village.** Little is known of Plains Village period use of the region. The Rose Hill village site, 39HD4, was largely destroyed by construction of a dam and reservoir. Its age and cultural affiliation are not known. The site known as Miller village is a burial ground accidentally discovered by highway workers in 1934 on a bluff overlooking the east fork of Wolf Creek. This site contained more than 40 skulls and other human remains deposited in large pits. These appeared to be secondary (bundle) burials. Few artifacts were found with the bones and their age and cultural affiliation are not known. Chipped-stone tools and debris, animal bone, and pottery were found west of the knoll containing the burials. This may represent a village associated with the burials; however, it appears that little remains of this portion of the site (Buechler 1988). It is possible that the burial ground and village or camp are of Woodland age. Historic accounts refer to fortifications

on the north end of the Ree Hills (DeLand 1906:558–559); however, no site matching that description or location is listed in the state site inventory.

Site 39HD115 is identified as a Plains Village bison kill site. A layer of bison bone and a few artifacts were exposed in the side of a slump in the Ree Hills. A radiocarbon date from bison bone indicates an age of 1180–1270 CE for this site (Fosha 2016).

**Oneota.** The Ferguson site (39SB43) is a bison kill and processing station. Ceramics from this site include grit- and shell-tempered sherds suggesting an Oneota cultural affiliation (Haug 1979b). Some small iron fragments were also recovered in test-excavations. It is not known if these materials are intrusive or indicate a Protohistoric age for the site. Sites in the Lower James valley suggest Oneota use of this area for seasonal hunting expeditions.

## Sites by Period

*Paleoindian:* None

*Early Archaic:* None

*Middle Archaic:* 39BE122, 39SB54

*Late Archaic:* 39HD7, 39HD9, 39KB41 (Besant), 39KB45, 39MN25, 39SB77 (Pelican Lake)

*Late Archaic or Woodland:* 39BE51, 39BE93, 39KB41

*Woodland:* 39BE14, 39BE15, 39BE23, 39BE25, 39BE27, 39BE29, 39BE46, 39BE48, 39BE53, 39BE54, 39BE55, 39BE57, 39BE62, 39BE64, 39BE94, 39BE108, 39BE109, 39BE110, 39BE115, 39BE170?, 39HD2, 39HD30, 39HD37, 39HD59, 39JE85, 39KB1, 39KB30, 39KB43, 39KB45, 39MN5?, 39SB1, 39SB3, 39SB4, 39SB5, 39SB11, 39SB12, 39SB15, 39SB16, 39SB18, 39SB31

*Oneota:* 39SB50

*Late Prehistoric:* 39BE89?, 39BE182, 39HD71

*Plains Village:* 39BE22, 39HD1, 39HD4?, 39HD30, 39HD115, 39SB60

*Protohistoric:* 39HD31, 39HD65, 39SB43

*Historic:* 39BE7 (school), 39BE40 (depression), 39BE41 (depression), 39BE42 (foundation), 39BE43 (foundation), 39BE117 (depression), 39BE124 (foundation), 39BE125 (artifact scatter), 39BE129 (whistle stop), 39BE130 (whistle stop), 39BE132 (town), 39BE138 (school), 39BE140 (depression), 39BE142 (depression, foundation), 39BE143 (foundation), 39BE145 (waterworks), 39BE146 (dump), 39BE148 (school), 39BE149 (school), 39BE150 (school), 39BE156 (artifact scatter), 39BE159 (dump), 39BE172 (farmstead), 39BE173 (farmstead), 39BE174 (artifact scatter), 39BE177 (farmstead), 39BE179 (farmstead), 39BE180 (school?), 39BE2003 (railroad), 39BE2007 (railroad), 39BE2072 (railroad), 39HD14 (school), 39HD15 (post office), 39HD16 (school), 39HD17 (school), 39HD28 (depression), 39HD53 (depression), 39HD75 (school),

39HD76 (town), 39HD78 (dump), 39HD79 (school), 39HD80 (school), 39HD81 (school), 39HD82 (school), 39HD83 (school), 39HD86 (depression), 39HD87 (whistle stop), 39HD89 (school), 39HD90 (school), 39HD91 (school), 39HD94 (depression), 39HD95 (school?), 39HD102 (artifact scatter), 39HD2003 (railroad), 39HD2100 (road), 39HD2181 (road), 39HE9 (depression), 39HE334 (foundation), 39HE339 (school), 39HE2003 (railroad), 39KB12 (whistle stop), 39KB25 (artifact scatter), 39KB31 (artifact scatter), 39KB42 (artifact scatter), 39KB72 (railroad), 39MN11 (town), 39MN15 (historic marker for church), 39MN17 (church), 39MN19 (school), 39MN20 (school), 39MN2007 (railroad), 39SB32 (foundation), 39SB34 (ford), 39SB35 (ford), 39SB36 (ford), 39SB37 (foundation), 39SB38 (inn), 39SB39 (foundation), 39SB40 (foundation), 39SB41 (foundation), 39SB42 (road), 39SB52 (school), 39SB53 (foundation), 39SB56 (town), 39SB57 (dump), 39SB58 (artifact scatter), 39SB59 (artifact scatter), 39SB68 (dam), 39SB70 (road and bridge), 39SB72 (artifact scatter), 39SB73 (artifact scatter), 39SB75 (artifact scatter), 39SB78 (artifact scatter), 39SB79 (artifact scatter), 39SB2007 (railroad)

*Farmsteads:* 39BE6, 39BE8, 39BE9, 39BE33, 39BE34, 39BE35, 39BE36, 39BE37, 39BE38, 39BE39, 39BE98, 39BE99, 39BE100, 39BE101, 39BE105, 39BE111, 39BE112, 39BE118, 39BE131, 39BE133, 39BE134, 39BE135, 39BE137, 39BE144, 39BE147, 39BE151, 39BE152, 39BE155, 39BE157, 39BE158, 39BE160, 39HD12, 39HD25, 39HD33, 39HD35, 39HD40, 39HD49, 39HD55 (farm), 39HD69, 39HD70, 39HD74, 39HD84, 39HD88, 39HD92, 39HD93, 39HD96, 39KB8, 39KB17, 39MN16, 39SB49, 39SB66, 39SB67, 39SB69, 39SB74

## **Prehistoric and Historic Themes**

***Sacred Sites, Traditional-Use Sites, and Burials.*** The James River was known as the Yankton River, because Yanktonai villages were located along it, and the Yankton/Dakota Rendezvous was held at the great bend of the James River (Upper James region) (Howard 1972:286–287, 296). Another name for the James was *cansasa* (red-willow) or *cansansan* (whitewood) (Howard 1972:296; Thwaites 1904–05(4):45; Warren 1922:110). It was said to be the setting of a story about an evil, invincible man who camped there with his two wives (Oneroad and Skinner 2003:175–176).

***Mounds.*** The Upper James region contains burial mounds assigned to the Woodland and Initial Middle Missouri periods; however, their assigned ages are more a matter of conjecture than data. It is not currently known how long these mounds were used, whether more than one group used each one, and how they are related to other archaeological sites in the region. In addition, the configuration and contents of these sites can reveal something of the belief systems of those who constructed and used them.

*Mound Sites:* 39BE25, 39BE27, 39BE29, 39BE46, 39BE48, 39BE54, 39BE55, 39BE57, 39BE64, 39BE66, 39BE93, 39HD2, 39JE85, 39KB1, 39KB30

***Relationship of Various Plains Village Complexes.*** This region contains very few sites that have been definitely identified as Initial Middle Missouri, Great Oasis, or Oneota, but all three can be expected based on their larger distribution. The region certainly was within the historic territory of today's Mandan, Arikara, Hidatsa, Yankton, and Dakota nations and was likely visited, if not occupied, by the ancestors of today's Omaha, Ponca, and Ioway people. An understanding of the

relationships between these various cultures and the degree to which they developed in place or migrated in from elsewhere will require much more data than are available now.

**Stone Circles:** Stone circles are common in the Middle James region. At present, 72 stone circle sites are listed in this region. Only three of these had artifacts on the surface, and only one of the recorded sites, 39SB45, has been test excavated. It contained chipped stone tools and debris, ceramics, bison bone, and fragments of shell (Haug 1979c). Most of the sites contain only one or a few rings, but some contain as many as 30 or 40 stone circles. It is not clear whether these sites represent winter camps of earth lodge villagers, the camps of seasonal bison hunting groups from outside the area, or both. One landowner reported finding glass beads at a stone circle site, suggesting use in Protohistoric times (Archaeological Research Center records).

*Stone circle sites:* 39BE16, 39BE18, 39BE19, 39BE21, 39BE26, 39BE30, 39BE31, 39BE32, 39BE44, 39BE45, 39BE50, 39BE60, 39BE63, 39BE66, 39BE67, 39BE68, 39BE69, 39BE70, 39BE71, 39BE72, 39BE73, 39BE75, 39BE81, 39BE82, 39BE86, 39BE87, 39BE88, 39BE89, 39BE90, 39BE91, 39BE92, 39BE94, 39BE95, 39BE96, 39BE97, 39BE102, 39BE103, 39BE104, 39BE139, 39HD24, 39HD39, 39HD42, 39HD45, 39HD46, 39HD52, 39HD56, 39HD64, 39HD65, 39HD103, 39HD104, 39HD105, 39HE338, 39JE11, 39JE39, 39MN3, 39SB6, 39SB9, 39SB17, 39SB21, 39SB22, 39SB24, 39SB25, 39SB27, 39SB29, 39SB30, 39SB44, 39SB45, 39SB46, 39SB48, 39SB62, 39SB81

## **Archaeological Potential**

This region is primarily farmland, and few sites have escaped the effects of plowing. At the same time, intact archaeological deposits have been identified throughout the region. Work at 39BE122 indicates that well stratified early sites exist in the region but are fairly deeply buried in alluvial terraces. Until more such investigations are done, it is difficult to assess the archaeological potential of this region. The region contains several apparently intact buried Woodland occupation sites, which will be critical to an understanding of proto-village cultures in eastern South Dakota, and numerous stone circle sites of uncertain age, affiliation, and purpose.

## **Management Considerations**

Basic data collection and inventory are needed to document early sites, in particular those from the Paleoindian and Early and Middle Archaic periods. Survey results and geomorphological investigations at 39BE122 seem to indicate that early materials are likely to be deeply buried. Additional research is also needed along the western margin of the Missouri Coteau to identify and document prehistoric resources, especially near permanent springs. The nature of Woodland occupation of the area is poorly understood and will require much more research before a clearer picture emerges. Woodland materials appear to be more common at the northern end of this region where they are not as deeply buried as further south. Evidence of Oneota use of the region is ambiguous at present, and the period(s) of Oneota expansion into this region have yet to be delineated. More stone circles appear to be present here than elsewhere in the James River Basin, but the use, cultural affiliation, and age of these sites are not yet clear.

## Sites Listed in the National Register of Historic Places

39BE2 (rock art), 39BE3 (rock art), 39BE14 (mound), 39BE15 (mound), 39BE23 (village), 39BE46 (mound), 39BE48 (mound), 39BE57 (mound), 39BE64 (mound), 39HD22 (alignment), 39SB15 (mound), 39SB18 (mound), 39SB31 (mound)

## Region 18: Upper James

### Setting

The Upper James Region encompasses the northern James River Basin in South Dakota. The area includes all or portions of Spink, Brown, McPherson, Edmunds, Faulk, Marshall, Day, and Clark counties. The topographic characteristics of the Upper James Region include a broad river valley and relatively flat to gently rolling hills. The river valley was once the bed of glacial Lake Agassiz, an immense meltwater lake formed as the last continental glaciers receded. This region is generally flat grassland prairie with mid to tall grasses and few trees and shrubs.



*Figure 174. Upper James archaeological region landscape (ARC photo).*

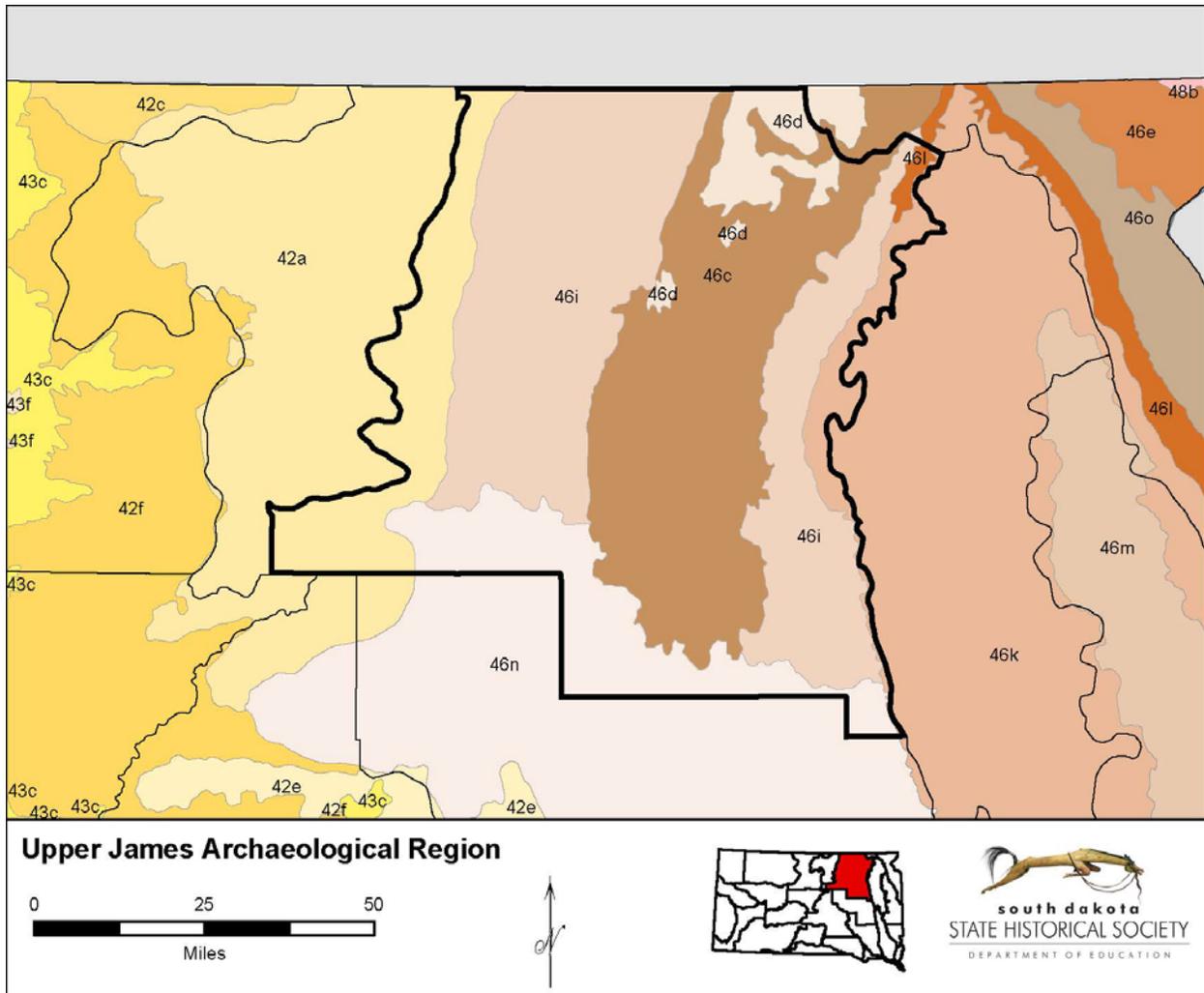


Figure 175. Ecoregions of the Upper James archaeological region.

42: Northwestern Glaciated Plains

42a: Missouri Coteau, glaciated, hummocky, rolling stagnation moraine; stream drainage absent or uncommon; numerous pothole wetlands between mounds of glacial till.

46: Northern Glaciated Plains

46c: Glacial Lake Basins, glaciated, very level glacial lake floors; low wetland density.

46d: Glacial Lake Deltas, glaciated; flat sheets of sand and gravel or rolling sand dunes; paucity of stream channels.

46l: Prairie Coteau Escarpment, glaciated, dissected topography along face of 300-600 ft. escarpment, incised by high gradient perennial streams.

46n: James River Lowland, glaciated level to slightly rolling plain composed of glacial drift; dense concentrations of temporary and seasonal wetlands

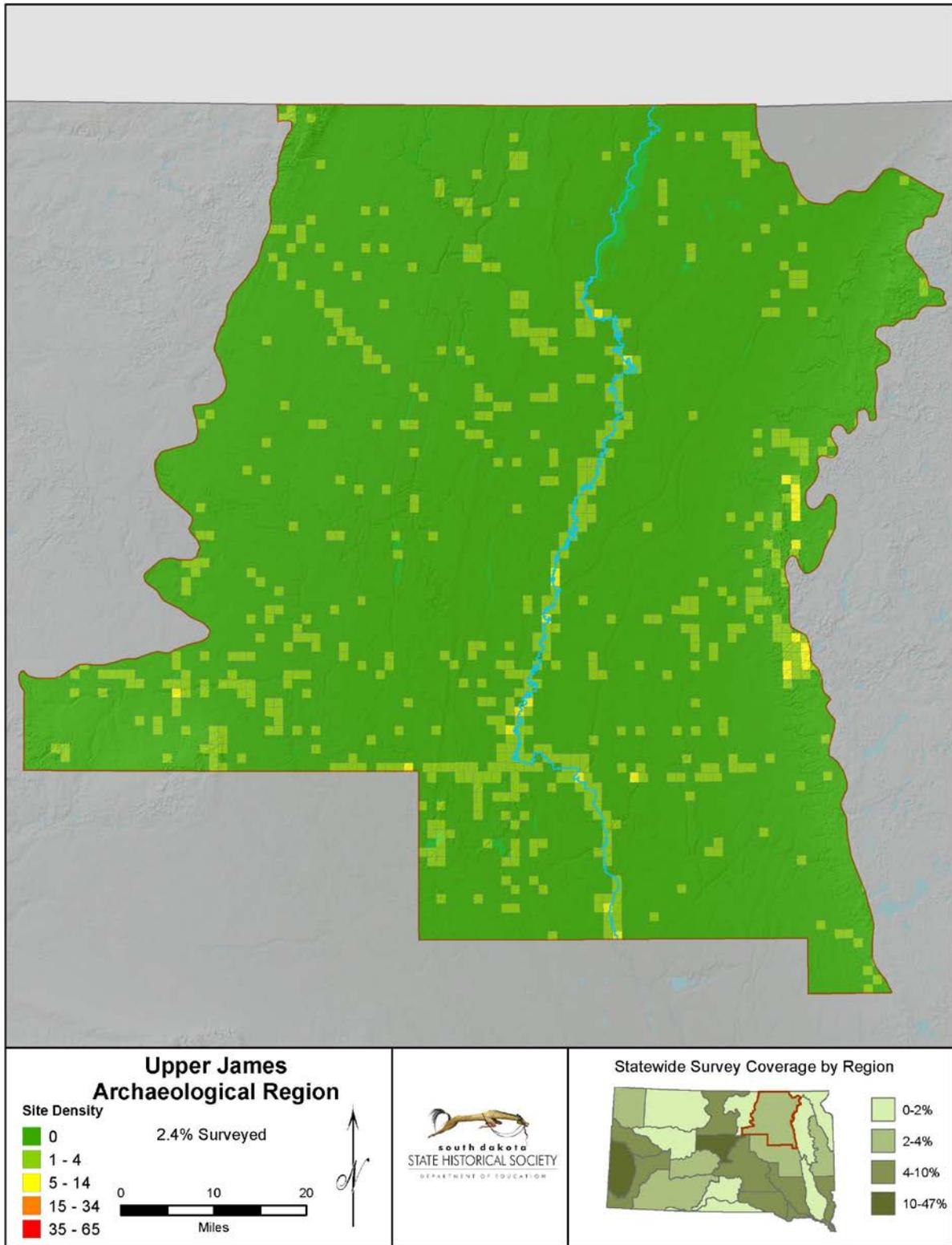


Figure 176. Density of known archaeological sites in Upper James archaeological region.

## Previous Archaeological Investigations

The earliest archaeological investigations in the Upper James Region were conducted by T. H. Lewis in the late 1800s. Lewis (n.d.a) recorded a number of mounds and earthworks along the James River in Spink and Brown counties. The accuracy of Lewis's documentation is quite remarkable. W. H. Over (Sigstad and Sigstad 1973) of the state museum at the University of South Dakota recorded sites along the James River within the region in the 1930s. Also, Howard and Black (n.d.) conducted a survey along the James River in Spink County for RBS. Following these early visits, little research was conducted in the area until the 1970s. In 1974, Sigstad and Barjenbruch published the results of an examination of the prehistoric and historic resources of the James River valley in portions of Spink and Brown counties. In 1980 and 1982–1983, Archaeological Research Center continued a cultural resources inventory of the James River valley (Haberman 1983c; Keller and Keller 1982, 1984a) and also conducted test-excavations at 39SP11 (Haberman 1980). Archaeological investigations along the route of the Northern Border Pipeline were also conducted in the area (Hannus *et al.* 1982). A sample survey of portions of the CENDAK irrigation project was conducted in the Upper James Region in 1982 (Haug *et al.* 1983). Since the late 1970s, small-scale contract projects have been conducted in the region (Buechler 1985d, 1986a, 1987b, 1988e). An oil pipeline survey discovered mostly historic sites related to farming (Trader 2015).

## Historic Contexts

***Paleoindian.*** Evidence for Paleoindian use of this region is minimal, with only one site listed. Site 39SP67 was a scatter of artifacts in a floodplain setting. It included a Plano point, a scraper, a biface, a retouched flake, a core, a few flakes, and four animal bone fragments. The site was test excavated, but nothing was found below the surface (Apley *et al.* 1982). The presence of this single verified Paleoindian artifact suggests that sites dating to this era may be either largely eroded away or deeply buried.

***Early Archaic.*** Two sites in the region, 39SP214 and 39ED14, are artifact scatters with projectile points similar to the Early Archaic Hawken type. The former was on a hilltop overlooking a lake and also had fire-cracked rock, fully grooved mauls, a grooved ax, core choppers, flakes, and chipping debris (Archaeological Research Center records). The latter contained a core, a retouched flake, and animal bone in addition to the projectile point (Apley *et al.* 1982). This site was on a hill top overlooking Snake Creek. It was test excavated, but only one artifact (a flake) was encountered. Another site, 39SP254, consisted of artifacts eroding from a cutbank of Cottonwood Lake. These appeared to have eroded from several levels: one about 10 cm below surface, and others at 80, 90, and 98 cm below surface. No diagnostic artifacts were found, but this site indicates the potential for deeply buried deposits in similar settings (Bradley and Haakenson 2004).

***Middle Archaic.*** The Middle Archaic period is represented by three sites in the region. Artifacts found on a hill top at 39ED12 included a Middle Archaic Hanna point, scrapers, bifaces, and animal bone, but nothing was found in a test unit. Another Hanna point was found at 39SP202, a multiple component site exposed in a bank of the James River. The site also contained an early Late Archaic Yonkee point, fire-cracked rock, chipped-stone tools and flakes, a grooved maul, and

bison bone. The stratigraphy of the site was not clear from the exposure, and no test excavations have been conducted (Gregg and Picha 1991). A Middle Archaic Duncan projectile point was observed along with large mammal bone, flakes, chipping debris, and fire-cracked rock scattered across a hill top at 39SP251. The site overlooks a stream and lake. Shovel tests did not encounter subsurface artifacts (Bradley and Haakenson 2004). In addition to these three sites, a recent survey identified an isolated biface fragment (39FK115) as unspecified Archaic. This item was on a flat plain near a natural lake, and was not test excavated (Trader 2015).

**Late Archaic.** Most sites in this region dating to the 1500 BCE to 900 CE period are assigned to the Middle or Late Woodland; however, a few sites that contained projectile points typical of the Late Plains Archaic and that lacked ceramics are classified as Late Archaic. Isolated projectile points were found at 39BN27 (Pelican Lake type), 39FK25, 39FK48, 39FK51, 39FK54, and 39SP202 (Yonkee). A more substantial site (39BN142) contained two Late Archaic projectile points, a scraper, chipping debris, and two fragments of shell on a hill slope. This site has not been test excavated. Another surface site, 39ED11, contained a variety of chipped-stone tools, including a Yonkee projectile point. Another Yonkee point was found at 39SP202, a multiple component site exposed in a bank of the James River. The significance of these non-ceramic sites is not clear because none have been excavated or otherwise studied in detail. The lack of pottery could indicate use of the region by mobile hunting groups, or it could indicate special activity sites where pottery vessels were not needed or used. A good prospect for such study would be 39BN28, a scatter of artifacts on a bluff. It lacked pottery but contained a Pelican Lake projectile point, a biface, six retouched flakes, a basalt hammerstone, cores and chipping debris, 31 pieces of animal bone, and three shell fragments. The site has not been test excavated, but coring indicated the potential for buried deposits there (Apley *et al.* 1982).

**Woodland.** Woodland sites are very common in the Upper James region. These fall into two categories: burial mounds and artifact scatters. The region contains 33 mound sites, some of which contain multiple mounds. Mound groups found along the James River valley are generally assigned to the Woodland period; however, few of these sites have been excavated. The region has about 30 artifact scatters assigned to the Woodland period. These typically contain small amounts of pottery, chipped stone tools and/or debris, and sometimes fire-cracked rock and animal bone. The sites occur either in floodplain settings or on bluffs or terraces overlooking streams or lakes. Very few have been test excavated; hence, little is known of Woodland life in this region apart from the practice of burying the dead in mounds.

The Dirt Lodge Village site, 39SP11, contained a large roasting pit feature radiocarbon dated at 540 CE, placing it in the Woodland period. The pit contained large mammal bone. Other features at the sites, primarily storage pits, contained Randall phase pottery and yielded radiocarbon dates from 1030 to 1250 CE, indicating a terminal Woodland or early Plains Village component. Those features included bell- and basin-shaped cache pits similar to those found in other Plains Village sites (Haberman 1993:105). These pits contained burned and unburned animal bone fragments, ceramics, bifaces, retouched flakes, and mussel shell fragments. One pit contained a secondary bundle burial. Randall phase ceramics from this and other sites are distinctive, but share some traits with Great Oasis pottery (Haberman 1993). Sherds are grit-tempered, smoothed or smoothed over cord roughened, and dark brown to light gray. Globular vessels with incised decoration are indicated. Projectile points from Randall phase assemblages are very small triangular unnotched or corner-notched types. Food remains from 39SP11 include shellfish, frogs, fish, duck-sized and

smaller birds, bison, canid, turtle, maize, sunflower, wild plum, and *Chenopodium*. These indicate a varied diet including both wild and domesticated plant and animal food sources.

Site 39BN85 is an artifact scatter on a bluff overlooking the James River. Artifacts observed on the surface included retouched flakes, body sherds (one cord-marked), shell, yellow ocher, and a large number of animal bone fragments (Keller and Keller 1983). The presence of Great Oasis ceramics suggests a terminal Woodland or early Plains Village age for this site; however, it has not been test excavated.

***Plains Village and Late Prehistoric.*** Only a handful of sites in this region are identified as Plains Village. Artifact scatters in floodplain settings that contained Plains Village pottery include 39BN72, 39BN143, and 39SP125. These sites contained small amounts of pottery and chipped-stone artifacts. They have not been test excavated. Pottery tempered with grit and shell was observed at 39BN72, suggesting a connection to Oneota seasonal camp sites farther south on the James River (Keller and Keller 1983). A floodplain surface scatter of pottery and chipped stone recorded as 39BN13A was test excavated as part of a field school (Grettlar 2010). This excavation revealed Woodland and Plains Village materials to a depth of 80 cm below surface and buried soil surfaces to 190 cm below surface. Three features were discovered: two hearths, including one with butchered dog bone, and a pit filled with bison long bones placed in an upright position. Site 39MP18 had an Avonlea point along with other chipped-stone artifacts. Shovel-testing at this site did not expose subsurface artifacts or features.

Another floodplain site, the Sieh Site (39BN30) was test excavated and contained a fairly dense Plains Village component from 0–30 cm below surface. The site had been plowed and heavily disturbed by rodents, and no intact features were found at this level (Fosha 1998). Ceramics, arrowpoints, scrapers, biface fragments, and a bison rib quill flattener or spatula made up the Plains Village assemblage. A lower component, at 60–100 cm below surface, contained bone, chipped-stone artifacts, and mussel shell fragments but lacked anything that would indicate a date for it. The site may have even lower archaeological deposits, as the landowner reported finding chipped-stone artifacts at a depth of 120 to 180 cm while digging a dugout. In the absence of features and undisturbed cultural deposits, the site is of limited value in reconstructing Plains Village life-ways, but, like 39BN13A, it does demonstrate that Woodland and pre-Woodland sites may be deeply buried in lowland settings.

The first of two other sites in the region with identifiable Plains Village ceramics is 39ML60, a scatter of sherds and animal bone fragments on the surface of a dune (Gregg *et al.* 1991). The site has not been test excavated. The other, 39MP21, is a stone circle site. Excavation of one of seven stone circles revealed a substantial cultural deposit including ceramics, chipped-stone tools and flakes, and animal bone. A hearth was radiocarbon dated to 1560 CE. This site also contained a Besant projectile point suggesting the possibility of an earlier Late Archaic/Woodland component. The density and variety of artifacts at this site suggest a long-term camp or base camp (Apley *et al.* 1982)

Sites with Late Prehistoric projectile points but lacking ceramics include 39BN50 on a terrace, 39BN11, on a flat plain, and 39SP273 on a rolling plain. These sites have not been explored further.

More research will be needed to explain the low number of Plains Village sites in this region, relative to other parts of the James River Valley, eastern South Dakota, and the large number of Woodland sites in the region.

**Protohistoric.** The region contains two post-contact Dakota villages: the aforementioned Dirt Lodge village (39SP11) and the Drifting Goose village (39SP101). Drifting Goose's band lived at the site on Armadale Island in the James River during the mid-nineteenth century, but this village had probably been occupied at least occasionally from Woodland times on. Both of these villages were associated with the Dakota trade rendezvous referenced by Lewis and Clark. Various Dakota communities also gathered in this area for ceremonies and councils, particularly at Dirt Lodge Village, which maintained a permanent council ground surrounding a sacred stone (Thwaites 1904–05[4]:45). This stone represented the deity of movement, Takuskanskan, and its mysterious movements were said to foretell the future (Dorsey 1894:446–7; Howard 1972:299).

The region contains two fur-trade posts, the Colin Campbell Post (39BN7/39BN100) and the Rondell Post (39BN107). The Colin Campbell post appears today as a depression approximately 20 x 20 feet and two smaller depressions, all within a fortification ditch on a terrace of the Elm River at its confluence with the James. The post was built about 1821. No archaeological investigations have taken place there, apart from mapping the surface features (Kapler 1987; Archaeological Research Center records). A large log building was still standing at this location in 1938, and the remains of the 100-foot square stockade could be clearly seen at that time (*Sioux Falls Argus-Leader*, August 29, 1938, p.10). The Rondell or Oakwood Trading Post was built in 1835 by Pierre LeBlanc for trade with Sisseton Dakota. LeBlanc refused food to a starving Sisseton man, who killed LeBlanc during the ensuing quarrel. The American Fur Company's agent Francis Raundelle built a new post at the location in 1842, which operated until 1851. The site of the latter post, known as Rondell Post, is marked with a granite monument, but no features are visible on the surface. This post was in the floodplain of the river and any remains have probably been obscured by flood deposits (Kapler 1987).

## Sites by Period

*Paleoindian:* 39SP67

*Early Archaic:* 39ED14 (Hawken), 39SP214 (Hawken)

*Middle Archaic:* 39ED12 (Hanna), 39FK115, 39SP202 (Hanna), 39SP251 (Duncan)

*Late Archaic:* 39ED11 (Yonkee), 39ED17 (Pelican Lake), 39ML56, 39ML82, 39MP21 (Besant), 39MP23 (Pelican Lake), 39SP202 (Yonkee)

*Unknown Pre-Woodland:* 39SP254

*Woodland:* 39BN1, 39BN2, 39BN3, 39BN4, 39BN6, 39BN10, 39BN11, 39BN12, 39BN13A, 39BN14, 39BN16, 39BN27, 39BN28?, 39BN29, 39BN37, 39BN38, 39BN44, 39BN48, 39BN51, 39BN57, 39BN59, 39BN62, 39BN65, 39BN69, 39BN70, 39BN73, 39BN74, 39BN75, 39BN76, 39BN78, 39BN83, 39BN85, 39BN86, 39BN87, 39BN88, 39BN89, 39BN92, 39BN94, 39BN96, 39BN98, 39BN99, 39BN123, 39BN124, 39BN142, 39FK23, 39FK25?, 39FK48, 39FK51,

39FK54, 39SP2, 39SP3, 39SP6, 39SP8, 39SP11, 39SP12, 39SP15, 39SP17, 39SP19, 39SP24, 39SP37, 39SP46, 39SP51, 39SP101, 39SP146, 39SP149, 39SP181?, 39SP187?, 39SP246, 39SP254

*Oneota:* 39BN72

*Great Oasis:* 39BN85

*Plains Village:* 39BN13A, 39BN30, 39BN50, 39BN112, 39BN143, 39ML57, 39ML60, 39ML82, 39MP21, 39SP1 (Coalescent), 39SP125, 39SP217, 39SP273

*Protohistoric:* 39BN7/39BN100 (trading post), 39BN18, 39BN108 (trading post, burial), 39SP5 (cache pit), 39SP7 (council ground), 39SP11 (Dirt Lodge Village, burial), 39SP101 (Drifting Goose Village)

*Historic:* (Sites are artifact scatters unless otherwise noted.) 39BN2, 39BN23, 39BN31, 39BN36 (foundation), 39BN109 (dump), 39BN111 (dump), 39BN113, 39BN116 , 39BN119 (town), 39BN122 (WORKS PROGRESS ADMINISTRATION dam), 39BN128 (youth camp), 39BN130 (depression), 39BN131, 39BN133 (burial), 39BN134 (foundation), 39BN135 (burial), 39BN136, 39BN137, 39BN138 (dump), 39BN139 (dump), 39BN146, 39BN147 (foundation), 39BN148, 39BN152 (depression), 39BN2003 (railroad), 39BN2007 (railroad), 39BN2013 (railroad), 39BN2015 (railroad), 39CK9 (depression), 39CK46 (foundation), 39CK47 (foundation), 39CK52, 39DA37 (depression), 39DA50, 39DA73 (depression), 39DA2000 (railroad), 39ED12, 39ED15 (dump), 39ED26 (dump), 39ED28 (dairy), 39ED36 (foundation), 39ED38, 39ED61, 39ED2007 (railroad), 39FK32 (foundation), 39FK37 (corral), 39FK41 (depression), 39FK55 (depression), 39FK58 (church), 39FK62, 39FK63, 39FK65 (school), 39FK66 (school), 39FK67 (school), 39FK70, 39FK71 (burial), 39FK75, 39FK76 (farmstead), 39FK77 (depression, foundation), 39FK79 , 39FK80 (foundation), 39FK81 (dump), 39FK82 (well), 39FK83 (foundation), 39FK84 (dump), 39FK85 (well), 39FK86 (well), 39FK96 (foundation), 39FK98, 39FK99 (well), 39FK112, 39FK113, 39FK114 (well), 39FK2003 (railroad), 39FK2007 (railroad), 39FK2015 (railroad), 39FK2047 (railroad), 39ML38 (stage stop), 39ML39 (stage trail), 39ML53 (dump), 39ML55 (depression, dump), 39ML59, 39ML62 (dump), 39ML63 (dump), 39ML65 (school), 39ML84 (marker for church), 39ML2000 (railroad), 39MP41, 39MP48, 39MP73, 39MP2003 (railroad), 39MP2015 (railroad), 39SP14 (historic marker), 39SP58 (wagon road), 39SP59 (ferry crossing), 39SP64 (road), 39SP66 (depression, alignment), 39SP73 (depression), 39SP94 (ford), 39SP98 (dugouts, road), 39SP110 (dugout), 39SP111 (dugout), 39SP119, 39SP128 (ford), 39SP133 (dugout), 39SP156 (cemetery), 39SP157 (depression), 39SP159 (depression), 39SP163 (school), 39SP168 (foundation), 39SP169 (dump), 39SP171, 39SP172 (school), 39SP177, 39SP180 (foundation), 39SP182 (school), 39SP184 (school), 39SP186, 39SP188, 39SP189 (school), 39SP190 (foundation), 39SP191 (school), 39SP192 (school), 39SP193 (school), 39SP195 (foundation), 39SP197, 39SP199 (foundation), 39SP201 (depression), 39SP205 (dam), 39SP209, 39SP211 (church), 39SP212 (dump), 39SP217 (foundation), 39SP222, 39SP224, 39SP229 (town), 39SP230 (foundation), 39SP234 (road), 39SP235 (dump), 39SP236, 39SP237 (ford), 39SP238 (auto racetrack), 39SP239 (foundation), 39SP240 (foundation), 39SP241 (dump), 39SP247 (foundation), 39SP249 (fish hatchery), 39SP256 (foundation), 39SP257 (depression), 39SP258 (dump), 39SP274 (foundation), 39SP275 (school), 39SP2003 (railroad), 39SP2007 (railroad), 39SP2079 (road), 39SP2096 (road)

*Farmsteads:* 39BN20, 39BN43, 39BN54, 39BN97, 39BN110, 39BN127, 39BN129, 39BN140, 39BN145, 39BN151, 39CK36, 39CK39, 39CK50, 39DA38, 39DA39, 39DA70, 39DA72, 39ED10, 39ED11, 39ED27, 39ED35, 39ED37, 39ED39, 39ED45, 39ED46, 39FK28, 39FK38, 39FK39, 39FK42, 39FK52, 39FK57, 39FK61, 39FK64, 39FK68, 39FK69, 39FK71, 39FK76, 39FK97, 39ML54, 39ML58, 39ML64, 39ML66, 39ML67, 39MP27, 39MP50, 39MP59, 39SP65, 39SP112, 39SP136, 39SP140, 39SP142, 39SP145, 39SP155, 39SP158, 39SP162, 39SP164, 39AP165, 39SP166, 39SP167, 39SP170, 39SP173, 39SP174, 39SP175, 39SP178, 39SP185, 39SP194, 39SP196, 39SP198, 39SP200, 39SP213, 39SP216, 39SP225, 39SP226, 39SP232, 39SP233, 39SP242, 39SP243, 39SP244, 39SP245, 39SP253, 39SP255, 39SP270, 39SP277

## **Prehistoric and Historic Themes**

***Sacred Sites, Traditional-Use Sites, and Burials.*** The James River was known as the Yankton River, because Yanktonai villages were located along it and the Yankton/Dakota Rendezvous was held at the great bend of the James River (Upper James region) (Howard 1972:286–287, 296). Another name for the James was *cansasa* (red-willow) or *cansansan* (whitewood) (Howard 1972:296; Thwaites 1904–05(4):45; Warren 1922:110). The Dirt Lodge Village, 39SP11, was home to the Yankton Dakota oracle stone, used in ceremonies and councils.

A large number of stone circle sites in Day County have been identified as traditional cultural properties by elders from the Sisseton-Wapeton Oyate (Sabatke and Stanfil 2016).

***Mounds.*** The Upper James region contains burial mounds assigned to the Woodland period, as well as other Woodland sites. Questions remain as to how long these mounds were used, whether more than one group used each one, and how they are related to other archaeological sites in the region. The configuration and contents of these sites can be assumed to reflect belief systems, as well as highly organized and cooperative local cultures.

*Mound Sites:* 39BE25, 39BE27, 39BE29, 39BE46, 39BE48, 39BE54, 39BE55, 39BE57, 39BE64, 39BE66, 39BE93, 39HD2, 39JE85, 39KB1, 39KB30

***Woodland and Early Plains Village Developments.*** This region has many Woodland sites, at least some of which are likely to contain intact stratified deposits. These sites can fill in the gaps of Woodland history in the region, especially concerning settlement and subsistence patterns. The shift to a farming-based economy and larger villages are hallmarks of the Plains Village period, but these developments started in the Woodland period. These sites can reveal whether the various Plains Village cultures have their roots in distinctive Woodland complexes, such as the Randall phase, or whether they represent in-migration of people from other regions. Much remains to be known about Woodland life in this region, including house types, the use of earth lodges versus tipis, patterns of seasonal movement, and development of a variety of resource uses, including use of fish weirs, gathering wild seeds and fruit, and domestication of or introduction of cultigens.

***Stone Circles.*** Stone circles are fairly common in the Upper James region. Most of the sites contain only one or a few rings, but a few larger sites have been recorded. It is not clear whether these sites represent winter camps of earth lodge villagers, the camps of seasonal bison hunting groups from outside the area, or both. Several sites in Faulk County were described as having a

double ring of stones. This may indicate use of a tipi liner, suggesting a winter occupation. The amount and variety of artifacts in excavated sites 39BN25, 39ED17, and 39MP21 are also consistent with the use of these sites in winter. Three sites (39ED17, 39MP21, and 39MP23) contained Late Archaic projectile points, indicating that use of tipis extends back about 2000 years.

*Stone circle sites:* 39BN25, 39BN104, 39BN160, 39CK3, 39CK8, 39CK10, 39CK11, 39CK12, 39CK14, 39DA123, 39DA125, 39DA127, 39DA128, 39DA130, 39DA131, 39DA132, 39DA133, 39DA135, 39DA136, 39DA137, 39DA138, 39DA141, 39DA142, 39DA143, 39DA149, 39DA151, 39DA153, 39DA165, 39ED17, 39ED49, 39FK27, 39FK29, 39FK31, 39FK33, 39FK34, 39FK35, 39FK36, 39FK40, 39FK43, 39FK44, 39FK45, 39FK46, 39MP21, 39MP23, 39MP32, 39SP18, 39SP20, 39SP23, 39SP25, 39SP26, 39SP28, 39SP29, 39SP31, 39SP32, 39SP36, 39SP38, 39SP39, 39SP138, 39SP148

## **Archaeological Potential**

The Upper James region contains a large number of Woodland sites, including both burial mounds and camp or special activity sites. Limited excavations at 39BN13 and 39BN30 indicate that in this relatively flat terrain, intact archaeological deposits may be preserved far below the current ground surface. In practical terms, this means that small scatters of artifacts on the surface may indicate intact stratified deposits with excellent potential to fill in the gaps of the Woodland, Archaic, and Paleoindian history of the East River region.

Survey in this region has largely been limited to the James River valley. Expanding archaeological investigations to the shores of glacial Lake Dakota may reveal Paleoindian sites, as this location should have been attractive to human populations in the immediate post-glacial period. This region appears to have the potential to contain intact, but deeply buried, archaeological deposits, which are unlikely to be discovered via the kind of survey thus far undertaken in the region. Additional geomorphological studies, including trenching through alluvial sediments will help elucidate patterns in the distribution of such deposits.

The protohistoric Dakota villages and early fur-trading posts in this region will be important in telling the story of the first encounters of Native groups first with Euroamerican trade goods and then with non-Native traders. These sites can provide important clues to the dynamics of these interactions. Such deposits have a good potential to have preserved information that can be used in reconstructing the history of climate change in the region.

## **Management Considerations**

Many of the sites recorded in this region have not been test excavated or otherwise evaluated for nomination to the National Register. As that process goes forward, it will be important that excavation methods be adequate to discover any buried soil surface and/or cultural deposits, even if they are deeply buried. In general, excavations should be continued until glacial till is encountered.

At least one cairn at a stone circle site in this region was covering a human burial. Archaeologists working at the site noted that looters had dug into the cairn and that human bone

was exposed in the backdirt of this unauthorized excavation. This points out the need to investigate cairn features as potential burial sites.

Most of this region is privately owned, meaning that preservation of historic resources will depend on the interest and good will of land-owners. That fact makes proper management of archaeological resources in state parks and recreation areas all the more imperative.

## **Sites Listed in the National Register of Historic Places**

39BN7 (Colin Campbell Trading Post), 39SP2 (mound), 39SP4 (mound), 39SP7 (council ground), 39SP8 (mound), 39SP11 (Dirt Lodge village), 39SP12 (mound), 39SP19 (mound), 39SP37 (mound), 39SP46 (Woodland artifact scatter).

## **Region 19: Missouri Coteau**

### **Setting**

The Missouri Coteau Archaeological Region takes its name from the vast rolling upland that extends from southern Alberta and Saskatchewan along the eastern side of the Missouri River through central North Dakota and north-central South Dakota. The South Dakota portion lies between the Missouri and James Rivers. It is characterized by low, undulating hills with numerous lakes or “prairie potholes.” Small clusters of low hills in the area include the Ree, Orient, Bowdle, Lebanon, Lowry, and Artas Hills. Drainage is primarily internal. Glacial till with compact clays and the underlying Pierre shale inhibit drainage. No major rivers occur within this archaeological region, but broad, shallow valleys mark the pre-glacial courses of the Grand and Moreau rivers. The native vegetation is tall and mixed grass prairie. Today the area is used for grain farming and cattle. The area includes portions of Campbell, Walworth, Potter, McPherson, Edmunds, Faulk, and Hyde counties.

### **Previous Archaeological Investigations**

Little professional research had been undertaken within the Missouri Coteau Region until large-scale contract surveys examined portions of the area in the late 1970s and 1980s (Roetzel and Woolworth 1978; Apley *et al.* 1982; Haug *et al.* 1983; Chevance 1984; Lueck *et al.* 1984). Small-scale survey projects have also been conducted in the area since the late 1970s. These have been done for bridge replacements, stock tanks and water lines, extension of utility lines, materials pits for road repair projects, and shelter belt plantings. Surveys of proposed utility line corridors, water systems, highway routes, and an oil pipeline have provided most of the current data for this region (Buechler 1985b, 1991a, 1991b, 1991c, 1997b, 2000a, 2000b, 2000c, 2008, 2009; Hanson 2005; Kurtz 1987; Trader 2015). An archaeological field school project focused on collecting data on stone circle sites. The collected data became the basis for a doctoral dissertation (Dasovich 1996, 1998).

Few excavation projects have been done in the region. An amateur excavation in the 1930s of the largest of the six Faulkton mounds (39FK1) is reported to have exposed a pit with the remains of at least 12 individuals (Sigstad and Sigstad 1973:93–95). Test excavations at the Kuhl-Poindexter Site (39FK12) covered 16 square meters. This revealed a Post-Contact Coalescent

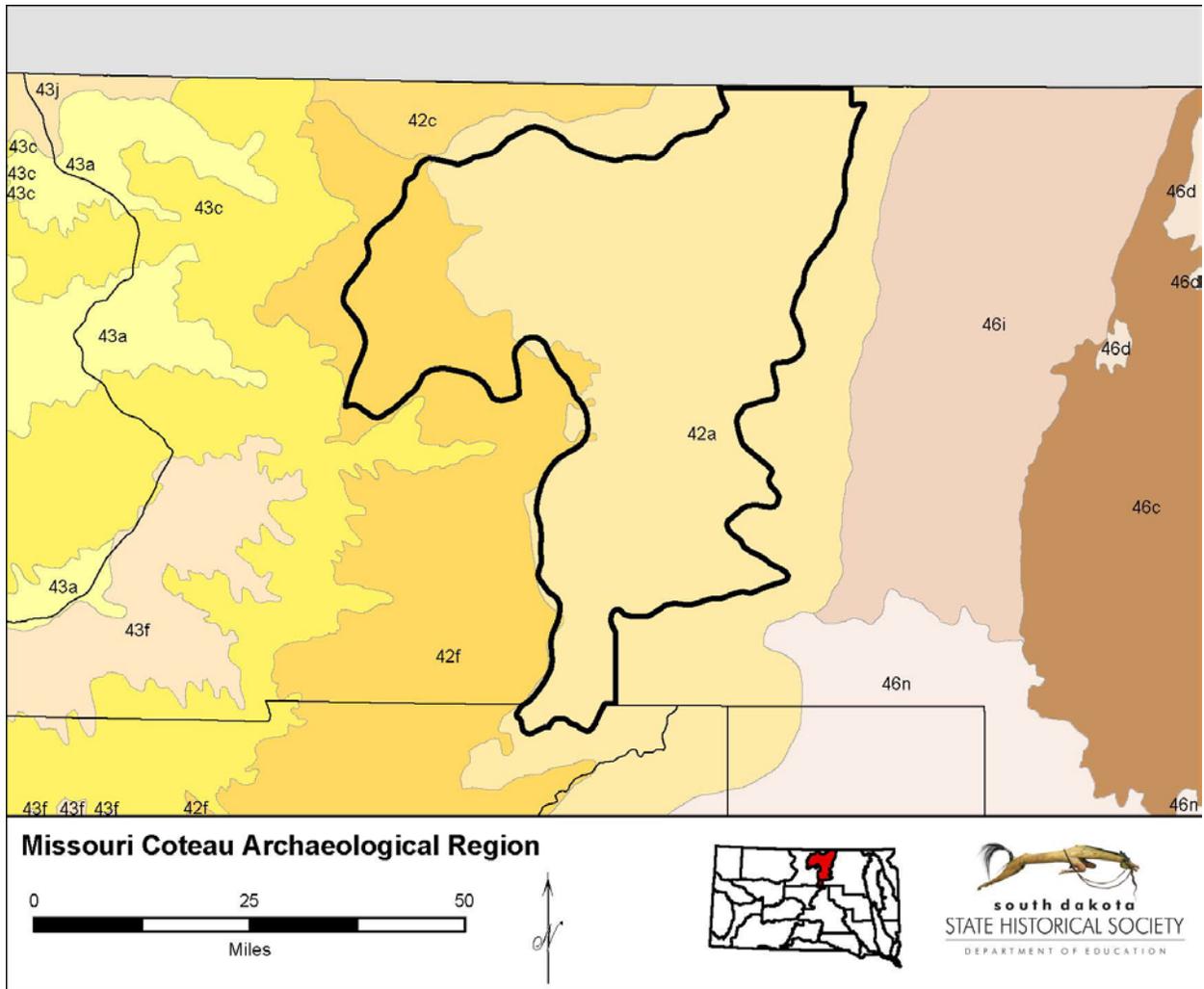
component with pottery, trade goods, concentrations of burned earth, and probable hearths. Test excavations suggested the presence of a deeply buried Woodland component (Haug *et al.* 1983). Nine stone circle features from two sites were excavated as part of the above-mentioned dissertation study of stone circles in the northern Great Plains (Dasovich 1996, 1998). At 39MP51 and 39MP52, the contents of the rings varied in type and density; some had hearth and knapping features, and some were devoid of features. A cairn was excavated at 39MP51 but contained no artifacts.



*Figure 177. Test excavation at 39CA284 in the Missouri Coteau region, 2011 (ARC photo).*

## **Historic Contexts**

The Missouri Coteau region is poorly known archaeologically. So far, no sites have been found to contain artifacts or features dated to the Paleoindian or Early Archaic periods. One site, 39ED13, contained a Middle Archaic McKean projectile point and a Woodland projectile point collected from stone circle features. The Woodland and Plains Village periods are better represented in the Missouri Coteau with six known Woodland sites and two assigned to the Plains Village period. The most informative site thus far investigated in the region is the Kuhl-Poindexter Site (39FK12). Test excavations revealed a Post-Contact Coalescent component just under the surface and the possible presence of a Woodland component at a depth of nearly two meters (Haug *et al.* 1983). Another site (39CA171) was assigned to the Plains Village era based on a projectile point; however, no excavations have been done there.



*Figure 178. Ecoregions of the Missouri Coteau archaeological region.*

*42: Northwestern Glaciated Plains*

*42a: Missouri Coteau, glaciated, hummocky, rolling stagnation moraine; stream drainage absent or uncommon; numerous pothole wetlands between mounds of glacial till.*

*42f: Southern Missouri Coteau Slope, glaciated, level to rolling uplands sloping westward to Missouri River; simple stream drainage.*

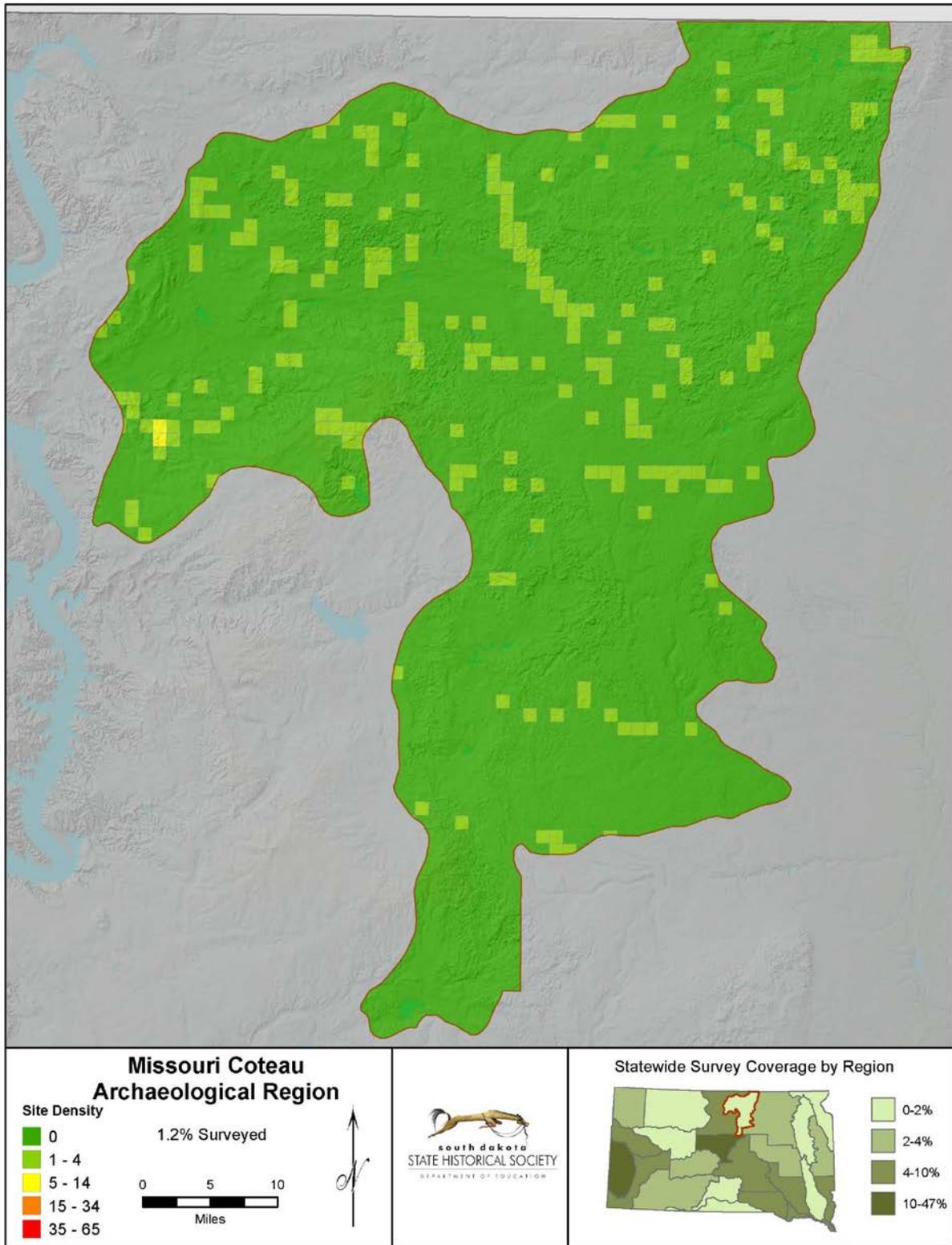


Figure 179. Density of known archaeological sites, Missouri Coteau archaeological region.

Stone circle sites suggest a different pattern of settlement and subsistence contemporaneous with Plains Village sites. As mentioned, field school students excavated nine stone circle features at two sites (39MP51 and 39MP52). These varied widely in the number of artifacts and features (*Table 4*) (Dasovich 1998). Features noted were one knapping feature, one hearth, and one post-mold. No pottery was found in the stone circle sites in the Missouri Coteau region, but it is unclear whether this indicates they were used by different groups that lived at the village sites or simply represent different seasonal activities by the same groups.

Ring	Flakes	Shatter	Stone Tools	Cores	FCR	Bone
D	3	4	0	0	0	1
K	4	28	1	7	1	0
N	26	205	8	8	44	0
1	2	3	3	0	0	0
2	5	5	1	1	0	0
3	4	6	2	0	0	0
4	1	5	0	0	0	0
5	1	5	0	0	0	0
6	15	11	0	0	0	0

*Table 4. Summary of excavated artifacts from nine stone circle features at 39MP51 (D, K, N) and 39MP52 (1-6).*

The Post-Contact Coalescent component at 39FK12 is the only Protohistoric site recorded in the region thus far. The vast majority of historic sites in the Missouri Coteau region are related to homesteading. Several dozen homestead sites and more ephemeral ruins in the form of foundations and depressions have been recorded in the region. Other common sites dating to the homestead era are the remains of rural schools and towns.

## Sites by Period

*Paleoindian:* None

*Early Archaic:* None

*Middle Archaic:* 39ED13

*Woodland:* 39CA206, 39ED13, 39FK1, 39FK12, 39FK15, 39MP14

*Plains Village:* 39CA171, 39FK12 (Post-Contact Coalescent)

*Late Prehistoric:* 39MP52

*Protohistoric:* None

*Historic:* (Artifact scatter unless otherwise noted.) 39CA121 (cabin), 39CA122 (burial), 39CA123 (foundation), 39CA124 (foundation), 39CA125 (foundation), 39CA126 (foundation), 39CA129 (foundation), 39CA130 (foundation), 39CA131 (foundation), 39CA132 (school), 39CA133 (burial), 39CA169 (school), 39CA182 (foundation), 39CA198 (depression), 39CA199, 39CA200, 39CA219 (school), 39CA229 (school), 39CA230 (foundation), 39CA231 (foundation), 39CA233 (foundation), 39CA235 (foundation), 39CA242 (foundation, well), 39CA301,

39CA2007 (railroad), 39CA2090 (railroad), 39ED6 (road), 39ED7 (school), 39ED22 (depression), 39ED29A (school), 39ED33 (foundation), 39ED40 (school), 39FK3 (road), 39FK17 (farmstead), 39FK21 (depression), 39FK22 (foundation), 39FK88, 39FK89 (gas station?), 39FK90 (depression), 39FK91, 39FK93 (foundation), 39FK94, 39HE28 (foundation), 39HE320 (foundation), 39HE330 (foundation), 39HE332 (foundation), 39HE340 (depression), 39MP49 (foundation), 39MP53 (foundation), 39MP54 (foundation), 39MP62 (foundation), 39MP64 (cemetery), 39MP67 (foundation), 39MP68 (foundation), 39MP69 (burial), 39MP70 (foundation), 39MP71 (road), 39MP72 (burial), 39MP76 (foundation), 39MP79 (foundation), 39MP2007 (railroad), 39MP2051 (railroad), 39PO55 (foundation), 39WW95 (school), 39WW96 (foundation), 39WW97 (foundation), 39WW106 , 39WW124 (school), 39WW128 (WORKS PROGRESS ADMINISTRATION dam), 39WW130 (corral), 39WW133 (school), 39WW135 (foundation), 39WW144 (town), 39WW2007 (railroad)

*Historic Farmsteads:* 39CA128, 39CA170, 39CA216, 39CA217, 39CA228, 39CA232, 39CA241, 39CA296, 39CA302 (farm and burials), 39ED24, 39ED29, 39ED31, 39ED32, 39ED34, 39ED42, 39ED44, 39FK17, 39FK72, 39HE13, 39HE14, 39HE314, 39HE323, 39MP6, 39MP42, 39MP56, 39MP60, 39MP61, 39MP63, 39MP65, 39MP66, 39WW107, 39WW123, 39WW126, 39WW12, 39WW134

## **Prehistoric and Historic Themes**

***Stone Circles.*** Available information suggests that stone circles are common near pothole sloughs. These vary in size from a single circle to several dozen rings. One extensive stone circle site along Spring Creek in McPherson County has been documented through aerial reconnaissance to cover seven square miles. As noted above, the relationship of these sites to the village sites is not yet understood. Excavations indicate that stone circle sites vary widely in the number of artifacts and features they contain; however, it is clear that the sites are not devoid of cultural material, as has sometimes been assumed (Dasovich 1998). Stone circle sites in this region had artifacts dating from Middle Archaic to Late Prehistoric times, but the earlier material is not clearly associated with the stone circle feature.

*Stone circle sites:* 39CA218, 39CA281, 39CA282, 39CA283, 39CA285, 39CA297, 39CA298, 39CA299, 39CA300, 39ED3, 39ED5, 39ED13, 39ED18, 39ED23, 39FK6, 39FK21, 39FK74, 39FK77, 39HE9, 39HE311, 39HE312, 39HE313, 39HE315, 39HE317, 39HE318, 39HE319, 39HE321, 39HE322, 39HE324, 39HE331, 39MP8, 39MP11, 39MP12, 39MP14, 39MP15, 39MP16, 39MP19, 39MP21, 39MP22, 39MP25, 39MP28, 39MP29, 39MP30, 39MP31, 39MP43, 39MP45, 39MP46, 39MP47, 39MP51, 39MP52, 39MP55, 39MP57, 39MP58, 39MP74, 39MP80, 39PO78, 39WW94

***Homesteads.*** The region contains numerous sites from the era of the Homestead Act.

***Sacred Sites, Traditional-Use Sites, and Burials.*** Little information has been published on this topic. The Yankton remembered Snake Creek as a place where they once found a scalped, but still living, enemy. It retains a version of its Dakota name, *Wamduska*, snake or worm creek (Howard 1972:300). A Dakota sacred story relates that a place near the town of Eureka was where a holy man told the people where to find bison in a time of famine. He said the bison would be coming down between two hills north of a lake; this prophecy was fulfilled and the famine ended (Olden

1918:99). Two rock art sites (39MP3 and 39HE331) and a boulder effigy in the shape of a bird at 39HE332 probably also designate sacred places.

## **Archaeological Potential**

The archaeological potential of the region is not well understood. Prehistoric sites tend to occur near pothole lakes and sloughs and along the margins of the uplift (Haug *et al.* 1983). Historic sites are more dispersed, due to the laws governing acquisition of homesteads, but more data are needed for more specific historic land-use patterns to emerge.

## **Management Considerations**

In this region, too little is known to make accurate predictions about site distribution and type. Early prehistoric sites have not been identified, suggesting that they may be deeply buried and not visible on the surface. The possibility of deeply buried early sites should be taken into account in developing research plans and cultural resource management projects. The lack of recorded early sites in this area probably reflects inadequate survey methods, rather than indicating that the area was not used before the Middle Archaic period.

Stone circle sites have proved more visible in this region. A better grasp of the density, form, and environmental distribution of stone circle sites may be an important contribution of this area to South Dakota history. In areas where such sites are relatively intact, they should be thoroughly recorded and, if necessitated by construction or agricultural development, excavated to prevent loss of important information about the life-ways they represent.

The relationships between the Middle Missouri, Coalescent, and Northeastern Plains Village archaeological traditions are poorly understood at present. This region, as a point of intersection between the three traditions, will be important in clarifying the apparently multiple paths to establishment of towns and villages in the northern Great Plains. The area has been used primarily for farming and cattle ranching and contains a large nature preserve; thus, archaeological sites are under less threat of damage from large-scale development than in other areas of the state. Priority should be given to site discovery projects and to identifying those sites with good research potential. At present, the only sites in the region listed in the National Register were part of a statewide rock art nomination.

## **Sites Listed in the National Register of Historic Places**

39HE331 (rock art), 39MP3 (rock art)

## Region 20: Prairie Coteau

### Setting

The Prairie Coteau Archaeological Region comprises part of the Coteau des Prairies physiographic feature. The larger Coteau des Prairies is a vast, gently sloping plateau that covers portions of eastern South Dakota, southwestern Minnesota, and northwestern Iowa. The portion of it included in the Prairie Coteau Archaeological Region lies between the Upper James River basin and the Big Stone Lake-Lake Traverse area on its northern extent and extends southward to the Vermillion River basin. It covers most of Day County and portions of Marshall, Roberts, Clark, Codington, Hamlin, Kingsbury, Brookings, and Lake counties. The region comprises glacial deposits from several Pleistocene glacial advances. These deposits attained a thickness of 275 meters. These overlie shale bedrock. Glacial advances tended to fill in valleys, producing a wide, wedge-shaped plateau that slopes down gently toward the west and more abruptly toward the east. The Prairie Coteau forms a drainage divide between the James River on the west and the Red and Big Sioux Rivers on the east. The Prairie Coteau itself is largely internally drained by numerous kettle lakes and “prairie potholes.” The native vegetation is tallgrass prairie.



*Figure 180. View of a kettle lake in the Prairie Coteau region (ARC photo).*

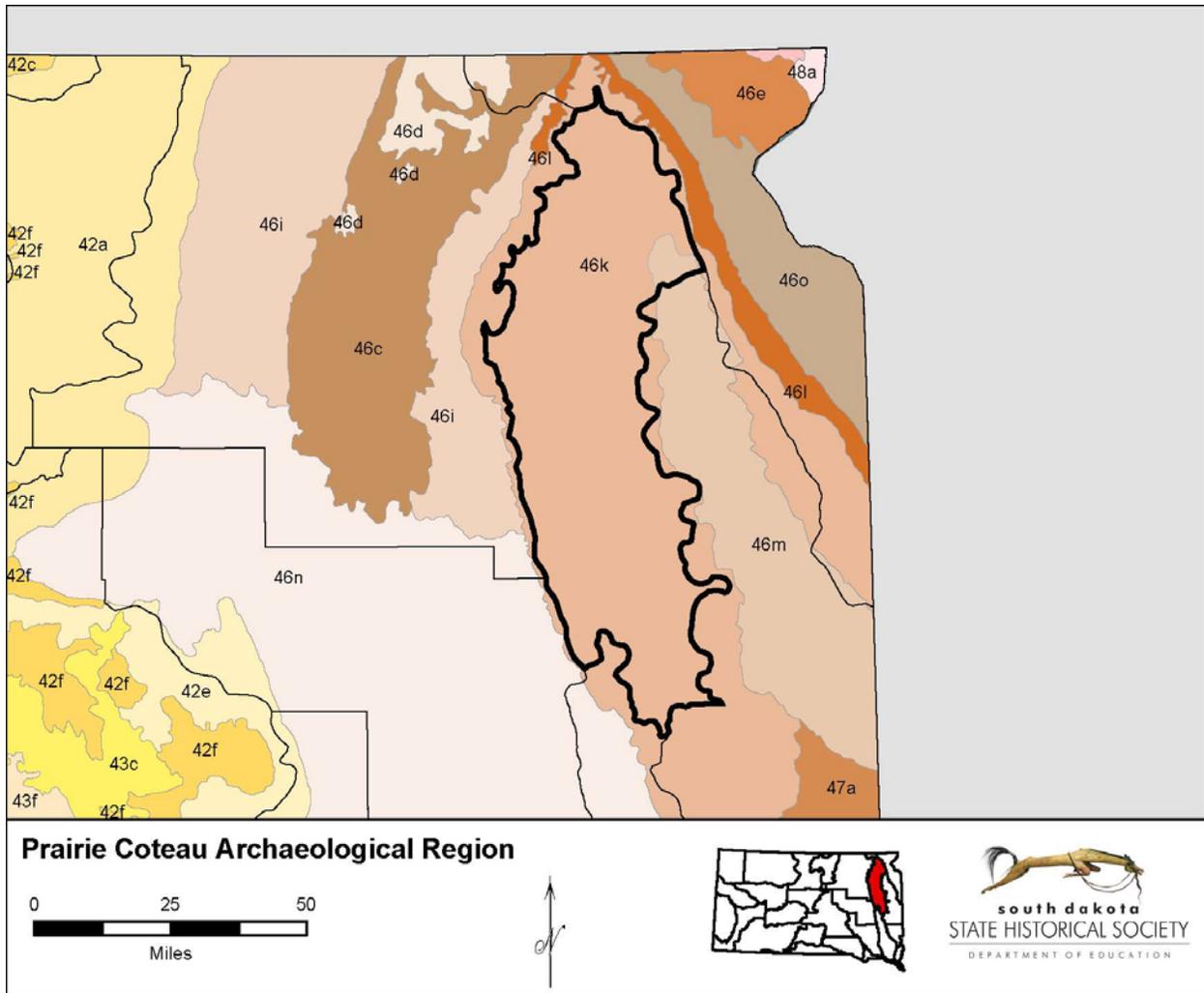


Figure 181. Ecoregions of the Prairie Coteau archaeological region.

46: Northern Glaciated Plains

46k: Prairie Coteau, glaciated platform of hummocky, rolling terrain raised above surrounding drift plains; stream network lacking; high concentration of large lakes and wetlands.

46m: Big Sioux Basin, only lightly glaciated; erosional, rather than depositional landscape; rolling, with incised stream drainage network, few wetlands.

## Previous Archaeological Investigations

Comfort (1978) published the earliest reports of archaeological excavations in the Prairie Coteau Region. Comfort was an army surgeon stationed at Ft. Wadsworth (Sisseton) who excavated and described a number of burial mounds in northeastern South Dakota. Between the 1890s and 1930s, T.H. Lewis (Keyes 1928) and W. H. Over (Sigstad and Sigstad 1973) each conducted research in the region, focused mainly on mapping the locations of burial mounds.

Little archaeological research took place in the region until the 1970s, when cultural resource management laws began to require survey and evaluation of sites prior to federal projects such as road-building, wildlife habitat improvements, reservation housing, and utility lines. The Waubay National Wildlife Refuge was surveyed in 1981 with 28 sites recorded (Keller and Zimmerman 1981). The Northern Border Pipeline survey project done in the early 1980s crossed into the Prairie Coteau region (Apley *et al.* 1982). Around the same time, Barbara Lass surveyed portions of the Prairie Coteau and tested some sites (Lass 1980a, 1980b); however, most of her work was in the Upper Big Sioux region. Another large survey project also included a small portion of the Prairie Coteau archaeological region, but lay mostly in the Northeast Lowlands archaeological region (Rood and Rood 1984). Larger scale projects in the 1990s included a highway survey (Shierts 1994), several electric utility projects (Lueck *et al.* 1994), and alteration of a lake outlet (Lueck *et al.* 1995). Portions of US Highway 12 were surveyed in 2000 (Long 2000), and the Pelican Lake Recreation Area was surveyed in 2004 (Des Planques *et al.* 2004). Many smaller surveys have been done for highway realignments, bridge replacements and materials pits, water and electrical lines, tree plantings, wastewater treatment facilities, recreation area facilities, and wildlife management.

Very little excavation has taken place in the Prairie Coteau region. In the 1980s, crews from the state archaeologist's office undertook the emergency salvage of materials from a mound near Punished Woman's Lake (Chevance 1988). In another such instance, bundle burials were accidentally unearthed on private land. State archaeologist's office personnel assisted in recovering, identifying, and arranging for reburial of these. One set of human bones had freshwater clam shells in association, but otherwise no artifacts were observed (Archaeological Research Center site records). Test excavations indicated the presence of Woodland or early Plains Village camp sites at 39DA7, 39DA13, 39DA14, 39DA15, and 39DA27 (Keller and Zimmerman 1981; Bradley and Ranney 1985). In 1999, three small sites were test-excavated and found to contain no historically significant material (Watts and Donohue 1999).

In the 1930s, Works Progress Administration crews began restoring portions of Fort Sisseton as a historic site. Part of that work involved archaeological excavations; however, almost no documentation of this project survived (Kapler 1998). Much later, archaeologists excavated and shovel-tested several areas of Fort Sisseton (39ML10) in advance of various improvements in the associated state park (Kapler 1987, 1990, 1993, 1995, 1998, 2002; Buechler 1990b; Hanenberger and Donohue 1996).

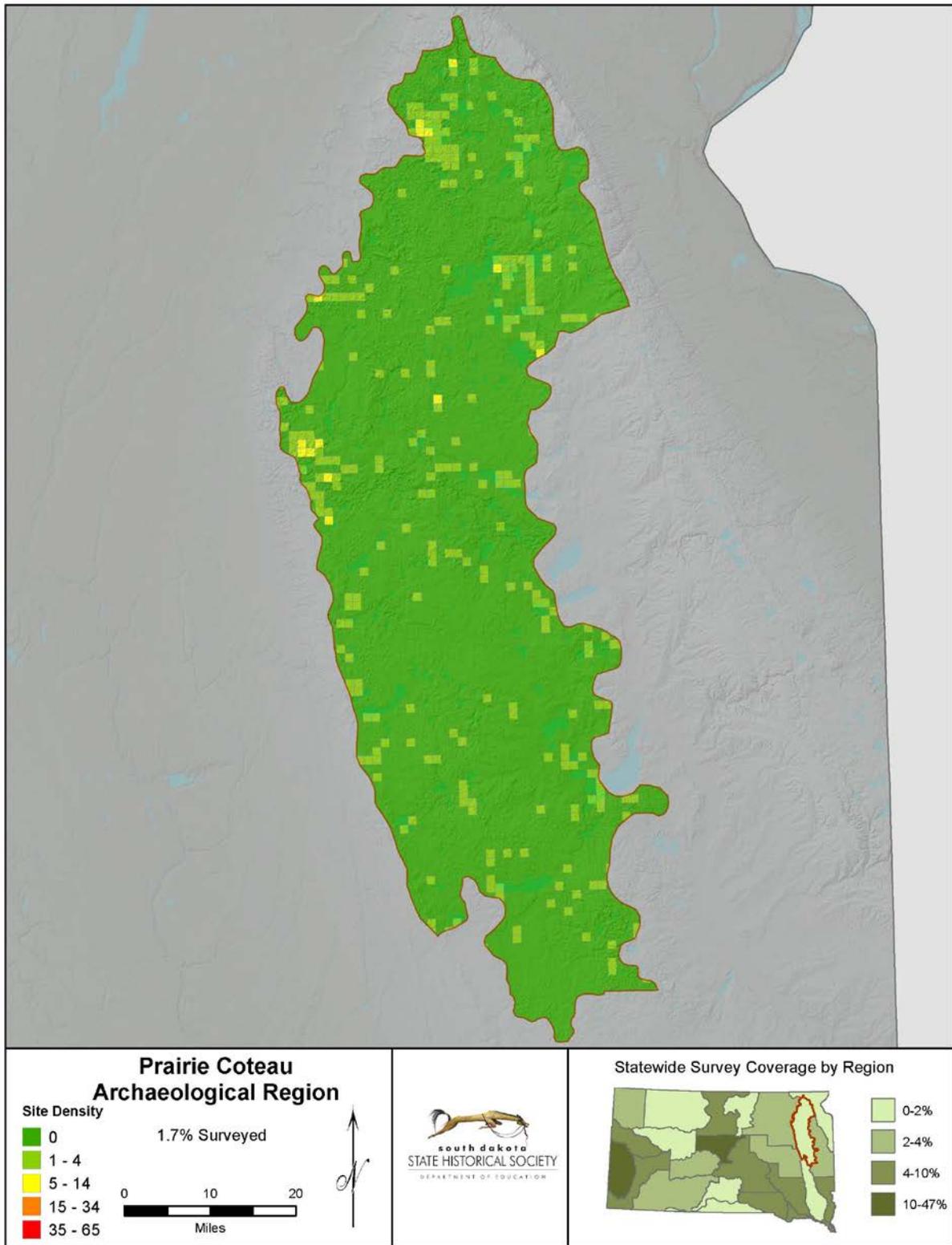


Figure 182. Density of known archaeological sites in the Prairie Coteau archaeological region.

## Historic Contexts

Virtually nothing is known of the Paleoindian and Early Archaic history of this region. In the 1930s, a local resident reported finding a Folsom point within the region (39CK2); however, nothing is known of its context. A possibly reworked projectile point from 39DA19 originally described as a Paleoindian type (Lueck *et al.* 1985) appears to be of more recent manufacture and perhaps was a hafted knife rather than a projectile point. Two surveys reported Middle Archaic materials from surface contexts (Apley *et al.* 1982; McNerney 1970).

The Woodland period, by contrast, is well represented in the Prairie Coteau region. The area contains 35 mound sites listed as Woodland in the site records and a few more that are of probable Woodland age. Unfortunately for archaeological knowledge of the region, the only sites for which we have subsurface data are a few burial mounds that have been disturbed or destroyed by looting and construction. Along with bundle burials, items such as freshwater clamshell, a conch shell gorget, and a limestone tobacco cutting board were observed when archaeologists were called to identify, remove, and assist in reburial of human remains (Chevance 1988; Spar 2007; Archaeological Research Center records). The area does not appear to contain recognizable Woodland village sites; however, the presence of sites with a mix of chipped stone artifacts, pottery, bone, and fire-cracked rock suggests the presence of some kind of habitation sites. Test excavations at 39DA7, for example, revealed a dense deposit of pottery, stone tools and chipping debris, and animal bone; these were interpreted as the remains of a campsite (Bradley and Ranney 1985). Limited excavation at four other sites (39DA13, 39DA14, 39DA15, and 39DA27) also revealed concentrations of Woodland pottery, chipped stone artifacts, and animal bone (Keller and Zimmerman 1981); however, these test excavations were too small to delineate house remains if they existed at the sites. Until more of these sites are investigated, the presence of settlements in the region remains an open question. It is assumed that most of the mounds contain primary or secondary burials; however, data are lacking from most of them.

Plains Village occupation sites are also poorly studied in this region. A single test excavation unit at 39DA21 yielded a deer scapula and Initial Middle Missouri pottery sherds, and one at 39DA8 contained Plains Village pottery, bone, chipped stone artifacts, fire-cracked rock, and charcoal (Keller and Zimmerman 1981). Site 39DA15 had Initial Middle Missouri pottery sherds and chipped stone debris in the two units dug (Keller and Zimmerman 1981). A campsite with Woodland pottery (39DA27) also contained Plains Village pottery, suggesting the presence of two components (Keller and Zimmerman 1981). This region contains several sites assigned to the Great Oasis tradition on the basis of pottery types (39ML9, 39ML32, 39ML35), suggesting influences from what is now northwest Iowa. It is not clear whether these sites indeed reflect external Great Oasis influences on local developments from local Woodland complexes such as Cambria and Fox Lake (cf. Schneider 2002; Toom 2004). The presence of shell-tempered pottery at 39CK53 hints at the presence of Oneota groups in the Prairie Coteau region.

At least one fur-trading post, Brown's First Post, recorded as archaeological site 39ML74, was in operation in the region in the 1840s. The 1851 Treaty of Traverse des Sioux established the Sisseton-Wahpeton Indian Reservation and several other reservations for the various Santee Dakota communities. This treaty opened most of western Minnesota and portions of eastern South Dakota to non-Indian settlement. The agency and most of the reserved lands assigned to the Sisseton and Wahpeton groups lay within the Northeast Lowlands and Prairie Coteau

archaeological regions. During the six-week Dakota Conflict of 1862, hostilities broke out between Santee Dakotas and white settlers in the Minnesota Valley. The eastern Santee bands were frustrated by unfair trade practices, broken treaties, and near starvation. Although the Santees on the Dakota Territory side of the border, including the Sisseton and Wahpeton, did not join in attacks on white settlers, fear of attack and retribution panicked whites and Indians alike. Dakota and Euroamerican refugees streamed into the area. Fort Wadsworth (called Fort Sisseton after 1876) was hastily erected to prevent further outbreaks and remained in use until 1889 (Hummel 1936). Non-Indian settlement of the region resumed soon after the end of the Dakota Conflict. The area today remains predominantly farm land.

## Sites by Period

*Paleoindian:* 39CK2

*Early Archaic:* None

*Middle Archaic:* None

*Late Archaic:* None

*Woodland:* 39CK1, 39DA4, 39DA7, 39DA10, 39DA13, 39DA14, 39DA25, 39DA26, 39DA27, 39HL5, 39HL25, 39HL26, 39KB2, 39ML2, 39ML3, 39ML4, 39ML5, 39ML8, 39ML12, 39ML13, 39ML14, 39ML15, 39ML16, 39ML17, 39ML18, 39ML19, 39ML20, 39ML21, 39ML22, 39ML23, 39ML24, 39ML25, 39ML26, 39ML27, 39ML28, 39ML29, 39ML31, 39ML36, 39ML69, 39ML70

*Woodland or Late Archaic:* 39CD12

*Woodland or Plains Village:* 39DA17, 39DA19

*Great Oasis:* 39ML9 (Mill Creek), 39ML32, 39ML35

*Plains Village:* 39DA7, 39DA8, 39DA15, 39DA19, 39DA25, 39DA27, 39DA60, 39ML71, 39ML75

*Late Prehistoric:* 39BK74, 39CK27, 39CK28

*Protohistoric:* 39DA6 (trail?), 39ML7 (village), 39ML74 (trading post)

*Historic:* 39CD20 (artifact scatter), 39CD47 (artifact scatter), 39CD60 (foundation), 39CD2003 (railroad), 39CK33 (foundation), 39CK34 (dump), 39CK38 (artifact scatter), 39CK42 (dump), 39CK43 (foundation), 39CK54 (foundation), 39CK2000 (railroad), 39CK2003 (railroad), 39CK2007 (railroad), 39DA6 (road), 39DA18 (hunting resort), 39DA20 (depression), 39DA23 (foundation), 39DA30 (picnic area), 39DA31 (Civilian Conservation Corps dining hall and kitchen), 39DA32 (log foundation), 39DA40 (foundation), 39DA41 (foundation), 39DA46 (depression), 39DA47 (foundation), 39DA48 (foundation), 39DA55 (artifact scatter), 39DA58 (depression), 39DA61 (depression), 39DA69 (dump), 39DA2007 (railroad), 39KB6 (depression), 39KB7 (school), 39KB16 (foundation), 39ML10 (fort), 39ML30 (cabin/fort), 39ML36 (graves),

39ML77 (school), 39ML78 (artifact scatter), 39ML2017 (railroad), 39RO89 (school), 39RO108 (artifact scatter), 39RO155 (quarry), 39RO2139 (road)

*Historic Farmsteads:* 39CD51, 39CD52, 39CD67, 39CK26, 39CK29, 39CK35, 39CK37, 39CK38, 39CK40, 39CK44, 39CK45, 39CK51, 39DA9, 39DA12, 39DA19B, 39DA22, 39DA24, 39DA42, 39DA43, 39DA52, 39DA54, 39DA56, 39DA62, 39DA65, 39DA66, 39DA67, 39RO112, 39RO113

## **Prehistoric and Historic Themes**

**Mounds.** The region contains many Woodland-era mounds. Most seem to have served as sites for primary (time of death) or secondary (bundle) burials. Mound sites in this region have between one and nine mounds. A single mound might contain just one or as many as 12 burials, generally with only a few grave goods; however, a lack of professional excavation makes recognition of such patterns tenuous. As in other parts of the state, the mounds probably were used for interments during later periods, as well (Bruce *et al.* 2010a, 2010b; Maki *et al.* 2015).

*Mound sites:* 39CD5, 39DA1, 39DA2, 39DA3, 39DA4, 39DA5, 39DA10, 39DA25, 39DA28, 39DA29, 39DA33, 39DA76, 39DA77, 39HL5, 39HL25, 39KB2, 39KB3, 39ML2, 39ML3, 39ML4, 39ML5, 39ML8, 39ML9, 39ML12, 39ML13, 39ML14, 39ML15, 39ML16, 39ML17, 39ML18, 39ML19, 39ML20, 39ML21, 39ML22, 39ML23, 39ML24, 39ML25, 39ML26, 39ML27, 39ML28, 39ML29, 39ML31, 39ML32, 39ML36, 39ML45, 39ML46, 39ML69, 39ML96, 39ML97, 39ML98, 39ML99, 39ML100

**Contact Era.** The period of initial contact between Indian and Euroamerican groups in this area was tumultuous. With the entry of French and American fur-traders, indigenous groups in the region gradually became involved in a world economic system. That relatively peaceful and prosperous interlude was followed by attempts to take over Indian lands for settlement by European immigrants and US citizens. The various Dakota communities were restricted to reservations and their lands taken over for non-Indian homesteads. Conditions on the reservations became increasingly dire as treaty rations were reduced and the Dakota had no means of supporting themselves. This led to the 1862 Dakota Conflict, when break-away groups of Dakota men attacked homesteads and towns throughout western Minnesota, killing several hundred settlers. US forces quickly suppressed the rebellion, holding Dakota refugees and prisoners of war at military posts such as Fort Rice. The largest government-sanctioned mass execution in US history followed trials of Dakotas accused of attacking the white settlements; 38 men were hanged at Mankato in December 1862. Fort Wadsworth, to be renamed Fort Sisseton, was constructed in 1864 to ensure that no further outbreaks would occur among the Dakota. Related sites: 39ML10, 39ML30, 39ML74, and historic farmsteads.

**Sacred Sites, Traditional-Use Sites, and Burials.** Many places in the region retain their Dakota names or English versions of them, referring to events from history, legend, or myth. The Prairie Coteau feature is named as a sacred place in Dakota tradition, particularly that portion southeast of the archaeological region near Pipestone, Minnesota. Its name in Dakota simply translates to rocky ridge (Bray and Bray 1976:61). The portion of the Prairie Coteau near Big Stone Lake is strongly associated with the powers of the sky, sometimes conceived as thunder-birds (Catlin 1844, Vol. II:163–166, 169, 206; Lewis 1886; Mooney 1896:968, 1022; Alexander 1967:53). A party of

Dakotas confronted George Catlin at the Traverse des Sioux and told him not to visit this sacred ground lest he desecrate it (Catlin 1844, Vol II:165–66). In the words of a biographer of the Lakota Hunkapa leader Sitting Bull, “The Holy Land of the Indians is the Coteau du Prairie, the Mountain of the Prairie, the Red Pipe Stone Country” (W. Johnson 1891:213). According to Catlin, the Pipestone Country and the Prairie Coteau were preserved for the use of all Indian nations for purposes of ritual and acquiring the sacred red pipestone (Catlin 1941, Vol. I:31, Vol II:234, 165–166). Ponca, Mandan, Iowa, Yankton, and Lakota people have long held sacred traditions about the Prairie Coteau region (Catlin 1844, Vol II: 234, 170). One Dakota sacred story tells of a great flood when all the people drowned except one young woman that an eagle carried to safety on the Coteau; she gave birth to the eagle’s twins, and from these sprang the Dakota nation (SD Writers Project 1941:45).

Lake Kampeska and Maiden’s Isle are places associated with a Dakota sacred story about a young woman saved by a pelican or swan (Howard 1972:301; SD Writers Project 1941:123–124; Tarbell 1949:294–297; Turchen 1988:14; Ehrensperger 1941:51). Lake Kampeska’s name refers to the white shells that wash up on the beach there; discs are cut from these for the medallions worn at the throat as part of traditional Dakota costume (Howard 1972:301). Hines Creek seems to be the place referred to in a Dakota sacred story as Hoop Ravine. In this story, bison save the people from starvation during a severe famine (Oneroad and Skinner 2003:165–66).

Enemy Swim Lake is remembered for a battle between Dakota and Cheyenne (Oneroad and Skinner 2003:191) or between Dakota and Ojibwa (SD Writers Project 1941:177–19). Dakota people referred to Spirit Lake as *Bde Wakan*, Sacred Lake, for its medicinal properties. They also dug sweetflag (a medicinal root) there (Howard 1972:301). The Dakota term for Medicine Lake is *Minnepejuta*, referring to its mineral-laced waters that were used for medicines (Turchen 1988:13). Two places named for fables or legends about social disruptions caused by jealous rivalries are Starvation Hill (Tarbell 1949:297) and Punished Woman’s Butte (39CD1). The latter lies just outside the Prairie Coteau archaeological region in the Upper Big Sioux region. A Yankton winter count indicates a date of 1770–1790 for the event memorialized by stone effigies at Punished Woman’s Butte (Sundstrom 2007b).

Clearly, indigenous interaction with this landscape of the Prairie Coteau goes far beyond subsistence and resource acquisition. Many ideas of religious belief and social morality are embedded in this landscape, as is indicated by this brief list of traditions.

## **Archaeological Potential**

Much of the archaeological potential of the region has been compromised by agricultural activities. Most shallow sites and mounds have been damaged or destroyed by plowing, and many mounds have been looted over the years. The region contains a few recreation areas and wildlife preserves that have seen less surface modification. It is likely that the area contains some deeply buried sites of Paleoindian and Archaic age; however, site discovery techniques have not been adequate to find these. The several Woodland-Plains Village transition sites thus far identified, but not yet excavated, will prove important in understanding the interaction between the village cultures of the Middle Missouri and those of the Northeastern Plains. Fort Sisseton State Park provides the opportunity for research and public educations. The numerous natural lakes in the

area can provide data on past environmental and climatic conditions through study of lake sediment core samples, as has been done at Pickerel Lake (Watts and Bright 1968).

## **Management Considerations**

Basic data collection is a high priority in this region, particularly the identification and documentation of pre-ceramic cultural sites and contexts. The region has the potential to address Woodland, Great Oasis, and Cambria cultural developments. Basic documentation of protohistoric and historic resources in the region is needed, for instance in regard to the Buffalo Lake Post, Brown's Trading Post, the Roy settlements at Roy Lake and Sica Hollow, the Long Expedition of 1823, the Nicollet Expedition, protohistoric Dakota sites, and early reservation sites. Because this region includes the Sisseton-Wahpeton Reservation, as well as many Yankton and Dakota sacred sites, Yankton and Santee Dakota people should be involved as much as possible in studies of this area and their views considered in any management actions or policies affecting this homeland.

## **Sites Listed in the National Register of Historic Places**

39ML10 (Ft. Sisseton)

## **Region 21: Vermillion Basin**



*Figure 183. Vermillion Basin landscape (ARC photo).*

## Setting

The Vermillion Basin Region includes the Vermillion River drainage system in portions of Kingsbury, Miner, Lake, McCook, Minnehaha, Turner, Lincoln, Yankton, Clay, and Union counties. The topography of the area comprises the Vermillion River valley, terraces, bluffs, and adjacent rolling plains. The area has the typical rocky glaciated terrain of eastern South Dakota. Natural vegetation is tallgrass prairie with deciduous trees and shrubs along the river and major streams.

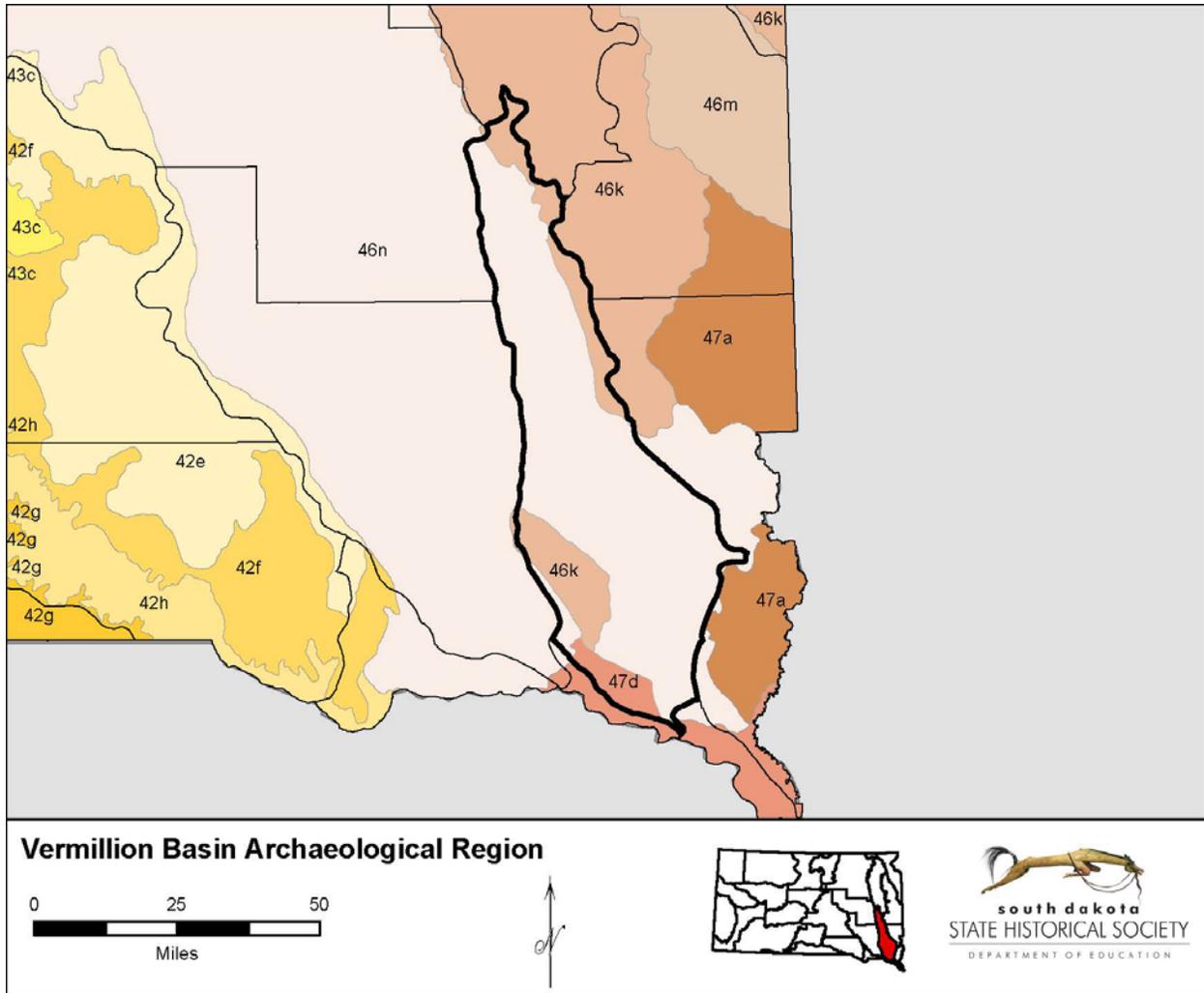


Figure 184. Ecoregions of the Vermillion Basin archaeological region.

46: Northern Glaciated Plains

46k: Prairie Coteau, glaciated platform of hummocky, rolling terrain raised above surrounding drift plains; stream network lacking; high concentration of large lakes and wetlands.

46n: James River Lowland, glaciated level to slightly rolling plain composed of glacial drift; dense concentrations of temporary and seasonal wetlands.

47: Western Corn Belt Plains

47d: Missouri Alluvial Plain, level floodplain alluvium; riparian wetlands largely drained.

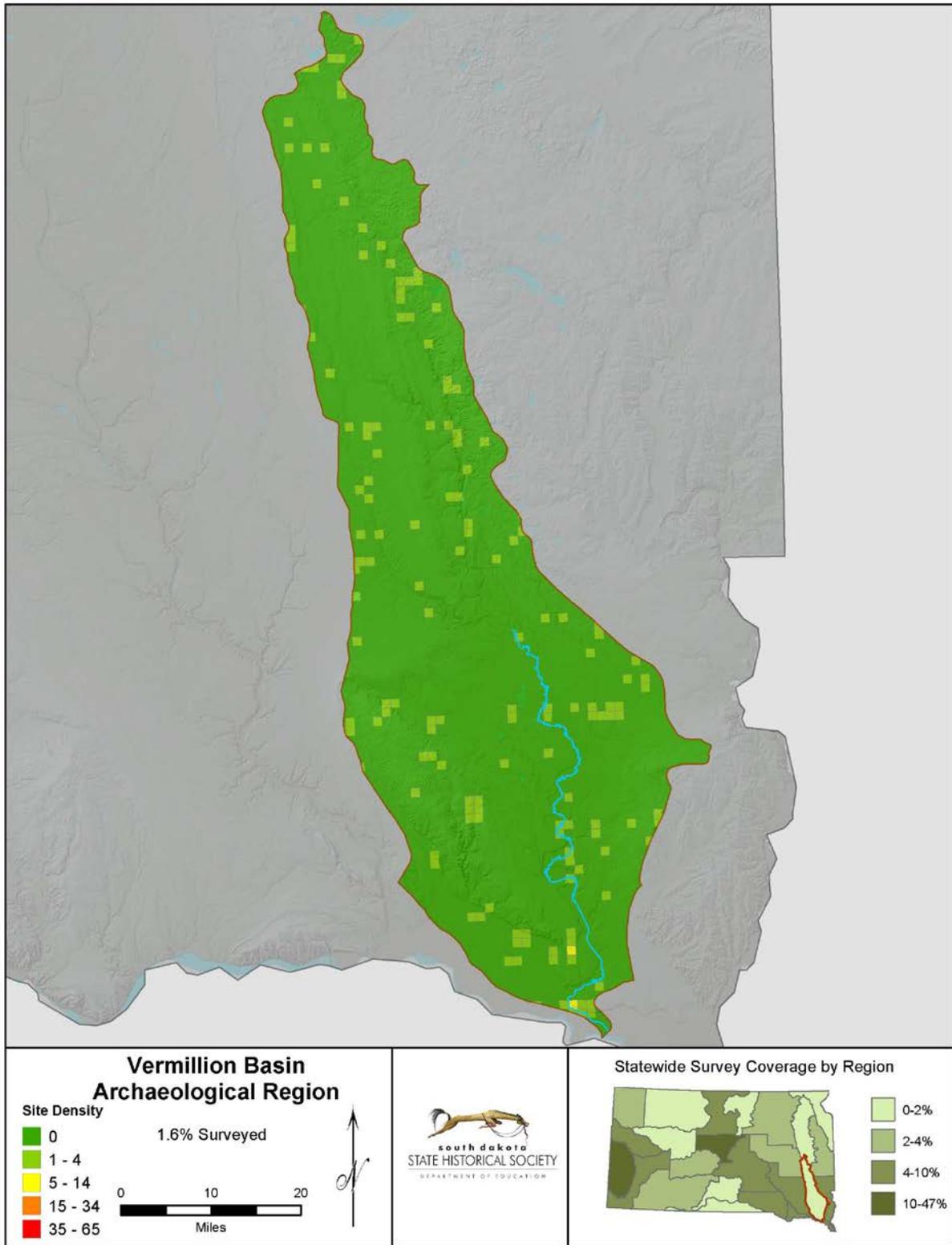


Figure 185. Density of known archaeological sites, Vermillion Basin archaeological region.

## Previous Archaeological Investigations

Relatively little is known about the archaeology of the Vermillion Basin. Apart from several surveys in the 1980s, highway realignment surveys in 1991 and 2002, and a survey in 2015 for the Dakota Access Pipeline, no large-scale projects have been done there (Lueck *et al.* 1987; Winham *et al.* 1985; Fosha 1991; Ranney *et al.* 1992; Trader 2015). Other projects in the area were small-scale surveys for water and powerlines, boat ramps, small road repairs and bridge replacements, gravel pits, commercial or housing developments, crop rotation, cattle tanks, shelterbelts, small recreational facilities, and a proposed site for a supercollider. Five sites—39CL22, 39CL23, 39CL28, 39KB9, and 39LK62—have undergone limited subsurface testing (Ranney *et al.* 1992; Palmer *et al.* 1998; Messerli and Pflipsen 2005). Of these, only 39CL23, 39CL28, and 39LK62 had intact buried deposits.

## Historic Contexts

Pre-contact sites in the Vermillion Basin include artifact scatters, buried sites exposed in cut banks, burial mounds, and boulder alignments representing turtles and a thunderbird. One rock art site (39MK12), of probable Late Prehistoric age, is recorded within an outcropping of Sioux quartzite. One stone circle site (39MN13) has been recorded in the region.

Only about 68 pre-contact sites have been recorded in the Vermillion Basin. Only 10 of those could be classified by age. The Paleoindian period is represented only by a find of an “Early Man” spear point reported in the 1930s, recorded as 39TU4. If any intact archaeological deposits are present from this period, they have not yet been identified. A projectile point found among chipped stone artifacts on the surface of 39LK22 was identified as an Oxbow type dating to the Early-Middle Archaic transition. The site has not been test excavated to determine whether it contains intact buried archaeological deposits. No other Middle Archaic sites have been recorded in the region. The Late Archaic period is represented by three sites that contained time-diagnostic projectile points. None of these have been excavated. Site 39CL22 was identified as Late Archaic or Woodland from projectile points found on the surface; however, test excavations showed that the site has been destroyed by agricultural work. Three Woodland artifact scatters in the region have not been test excavated or otherwise studied. The few burial mounds recorded in this region are probably of Late Woodland age, but have not been formally studied. The only Late Prehistoric site, 39CL13, was destroyed by construction work before it could be studied. It contained a triangular projectile point and a few flakes. A human skeleton accompanied by glass and shell beads and a dog probably dates to the Protohistoric or Historic period (39KB11), but it is possible that the beads and human bones are of different ages. The skeleton was found on the banks of a lake. No Plains Village sites have been recorded in the region.

The historic period is better represented in the archaeology of the Vermillion Basin. Sites include farmsteads, schools, irrigation ditches, railroads, and a cemetery, but none have been excavated. It is probably safe to assume that the history of the Vermillion Basin parallels that of the adjoining archaeological regions, but at present too little information is available to outline the history of the region in its own right.

Two sites in the region are listed in the National Register of Historic Places. Explorers Meriwether Lewis and William Clark visited Spirit Mound (39CL4) on their way up the Missouri

River in 1804. Dakota Indians believed that this hill was home to animal spirits. It remains a place of spiritual significance for Dakota people. The other listed site is a boulder effigy in the form of a thunderbird (39TU5). Its age and cultural affiliation are not known.

## Sites by Period

*Paleoindian:* 39TU4?

*Early Archaic:* 39LK22 (Oxbow)

*Middle Archaic:* None

*Late Archaic:* 39CL16, 39LK59 (Pelican Lake), 39MN9

*Late Archaic or Woodland:* 39CL22

*Woodland:* 39CL4, 39LK8, 39MK1

*Late Prehistoric:* 39CL13

*Plains Village:* None

*Protohistoric:* 39KB11 (burial), 39LK8

*Historic:* 39CL6 (burial), 39CL8 (school), 39CL12 (college), 39CL14, 39CL15, 39CL16, 39CL17, 39LC18 (farmstead), 39CL19, 39CL20, 39CL21, 39CL23 (farmstead), 39CL27, 39CL29 (farmstead), 39CL30, 39CL31 (farmstead), 39CL2050 (ditch), 39CL2205 (ditch), 39HT2007 (railroad), 39KB10 (farm), 39KB13 (whistle stop), 39KB14 (whistle stop), 39KB15 (whistle stop), 39KB20 (farm), 39KB21, 39BK22 (depression), 39KB23, 39KB2003 (railroad), 39LK17 (town), 39LK48 (school), 39LK56, 39LK63 (depression), 39LK70, 39LN65, 39LN75, 39MH134, 39MK3 (farmstead), 39MK11 (farmstead), 39MK18, 39MK21, 39MK2003 (railroad), 39MN1 (trading post), 39MN7 (cemetery), 39MN14 (farmstead), 39MN18 (farmstead), 39MN28 (farmstead), 39MN29 (farmstead), 39MN29, 39MN2003 (railroad), 39TU9 (foundation), 39TU13, 39TU14, 39TU15, 39TU17, 39TU2007 (railroad), 39YK53, 39YK54, 39YK2050 (ditch)

## Prehistoric and Historic Themes

Cultural resource managers have little to go on in indentifying important prehistoric themes in this region. The region lies within the zone of Woodland burial mounds and the largely undated boulder alignments. It may also prove important in understanding interactions between various Woodland and Plains Village complexes. During the Protohistoric period, the area was the location of trading posts and trade rendezvous. Later, this area became a stop-over for explorers, such as Lewis and Clark, and a locus of early non-native settlement in what would become South Dakota.

***Sacred Sites, Traditional-Use Sites, and Burials.*** Spirit Mound is a well documented Native American sacred site (DeVoto 1953:22–23; Ehrensperger 1941:54). Another site considered sacred is a rock art site with a footprint and a mother-and-child petroglyph cut into a Sioux quartzite exposure along Wolf Creek (39MK12). W.H. Over reported a “stone effigy” at this

location, as well; however, it is not clear whether he meant the petroglyphs or a boulder alignment that no longer exists (Over 1965). The Yankton called the Vermillion River by a term meaning Red Paint River because they mined limonite (yellow ocher) there (Howard 1976:296–297; Olden 1918:31; Warren 1922:111; Ehrensperger 1941:6); the Ponca name for the river translates to “where they acquire white clay” (Fletcher and La Flesche 1911:92). The Ponca tribal history refers to limestone cliffs near Springfield where the religious leaders made drawings (petroglyphs) during their westward migration (Howard 1965:18). This apparently refers to a location on the Nebraska side of the river.

According to Northern Cheyenne oral history, a boulder effigy of a bird with outstretched wings at Turkey Ridge (39TU5) marked the camp site of a leader named Swan and his people (Leman 1987:17–20; Sundstrom 2006). Turkey Ridge takes its name from a Dakota/Yankton term designating it as a place to hunt wild turkeys (Howard 1976:297; Warren 1922:111). Another village site remembered in oral tradition is Black Eagle’s village of Wahpekute Santee on the Vermillion River (Landes 1968:35). Ash Creek on the South Dakota side of the Missouri was where Ponca men found wood for the stem for the nation’s ceremonial pipe (Howard 1965:17).

Given the strong and ongoing use of this area by Ponca, Omaha, Yankton, Santee Dakota, and Lakota people, it likely contains many more places with importance to their historical and religious traditions.

## **Archaeological Potential**

The archaeological potential of this region is unknown. Its location at the confluence of the Vermillion and Missouri rivers would undoubtedly have been attractive to human occupation throughout the post-glacial era. The presence of non-cultural bison bone deposits at three sites (39LK6, 39MN12, and 39TU1) suggests that buried archaeological deposits are probably preserved in portions of the region. However, because the area was one of the first settled by non-natives, many older sites may have been destroyed by town-building and farms. Only eight sites have been test excavated (39CL22, 39CL23, 39CL28, 39KB9, 39LK8, 39LK62, 39MN7, 39MN28). Four of these contained intact buried deposits within the first 30 cm below surface. Site 39LK8 was dated to the Woodland period and 39CL22 to the Woodland or Late Archaic, based on their artifacts. The presence of ceramic sherds at 39CL28 indicates a Woodland or Plains Village date for the site. Site 39MN28 is a farmstead, and 39MN7 is a historic cemetery.

## **Management Considerations**

The biggest challenge in cultural resource management in the Vermillion Basin is a lack of data regarding its archaeological resources. Due to frequent flooding of the rivers, it is likely that any remaining ancient sites are very deeply buried. Until areas with the potential for containing deeply buried deposits, such as stream terraces, are better known, it is not possible to assess the likelihood of finding Paleoindian and Archaic sites in this region. Sites at and near surface have largely been destroyed or damaged by farming and construction of homes and businesses. In this area, it may be advantageous to develop methods for recording the less than perfect data available in the plow zone, rather than simply declaring that such sites have no historic value. While plowed sites usually lack the integrity required for National Register of Historic Places listing, they nevertheless may contain usable archaeological data.

## Sites Listed in the National Register of Historic Places

39CL4 (Spirit Mound), 39MK12 (rock art), 39TU5 (alignment)

## Region 22: Lower Big Sioux

### Setting

The Lower Big Sioux Region encompasses the lower reaches of the Big Sioux River drainage basin in southeastern South Dakota. The region includes portions of Union, Lincoln, Turner, McCook and Minnehaha counties. The general topography of the area consists of the Big Sioux River valley, bluffs, and adjacent plains. Areas such as Newton Hills in Lincoln County offer local relief. The bedrock of the area is largely Pre-Cambrian age Sioux quartzite.



*Figure 186. Site survey in the Lower Big Sioux region, 2014 (ARC photo).*

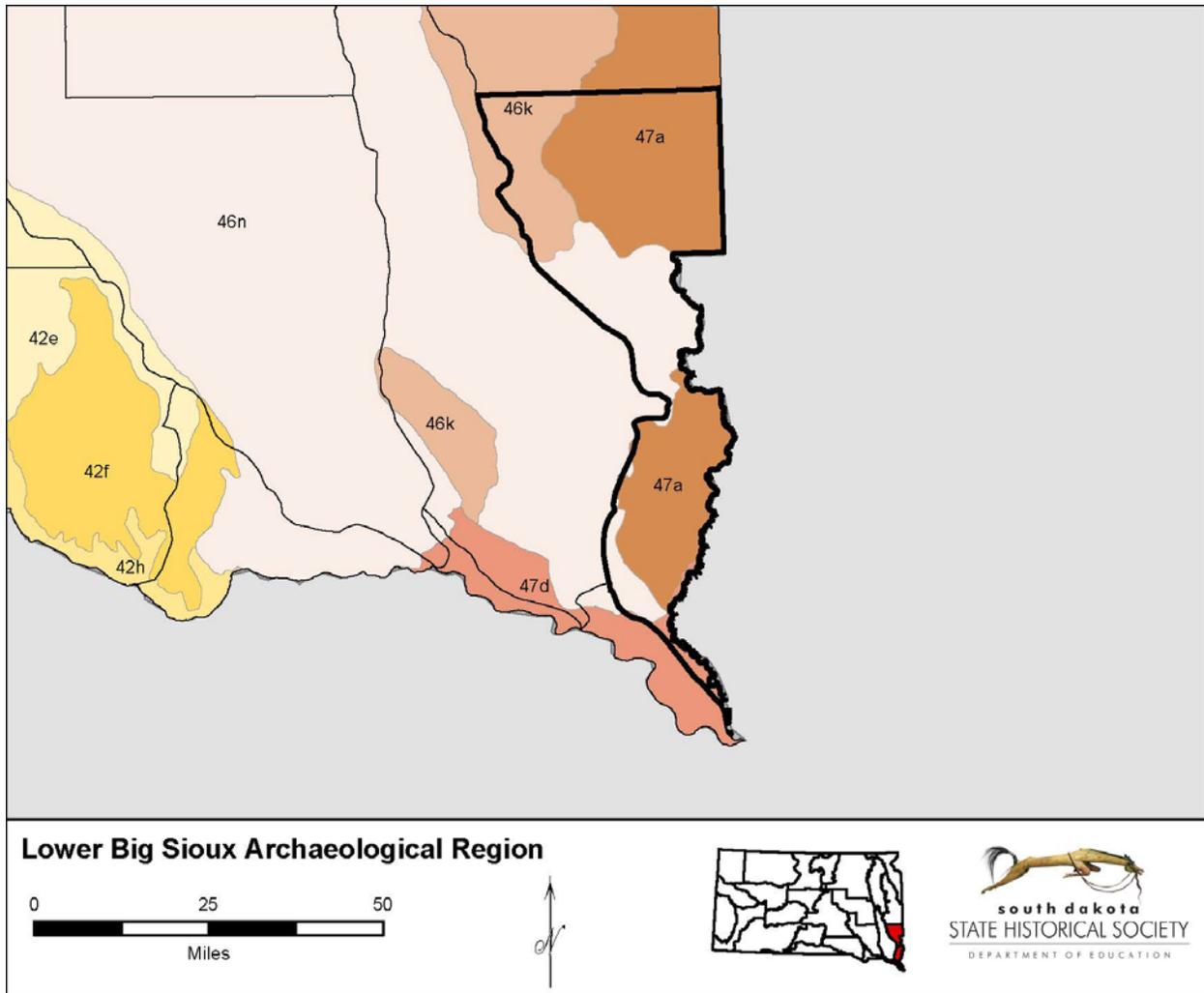


Figure 187. Ecoregions of the Lower Big Sioux archaeological region.

46: Northern Glaciated Plains

46k: Prairie Coteau, glaciated platform of hummocky, rolling terrain raised above surrounding drift plains; stream network lacking; high concentration of large lakes and wetlands.

46n: James River Lowland, glaciated level to slightly rolling plain composed of glacial drift; dense concentrations of temporary and seasonal wetlands.

47: Western Corn Belt Plains

47a: Loess Prairies, gently rolling in the northern section, more dissected in the southern section; streams have a quartzite substrate providing diverse habitat for aquatic life.

47d: Missouri Alluvial Plain, level floodplain alluvium; riparian wetlands largely drained.

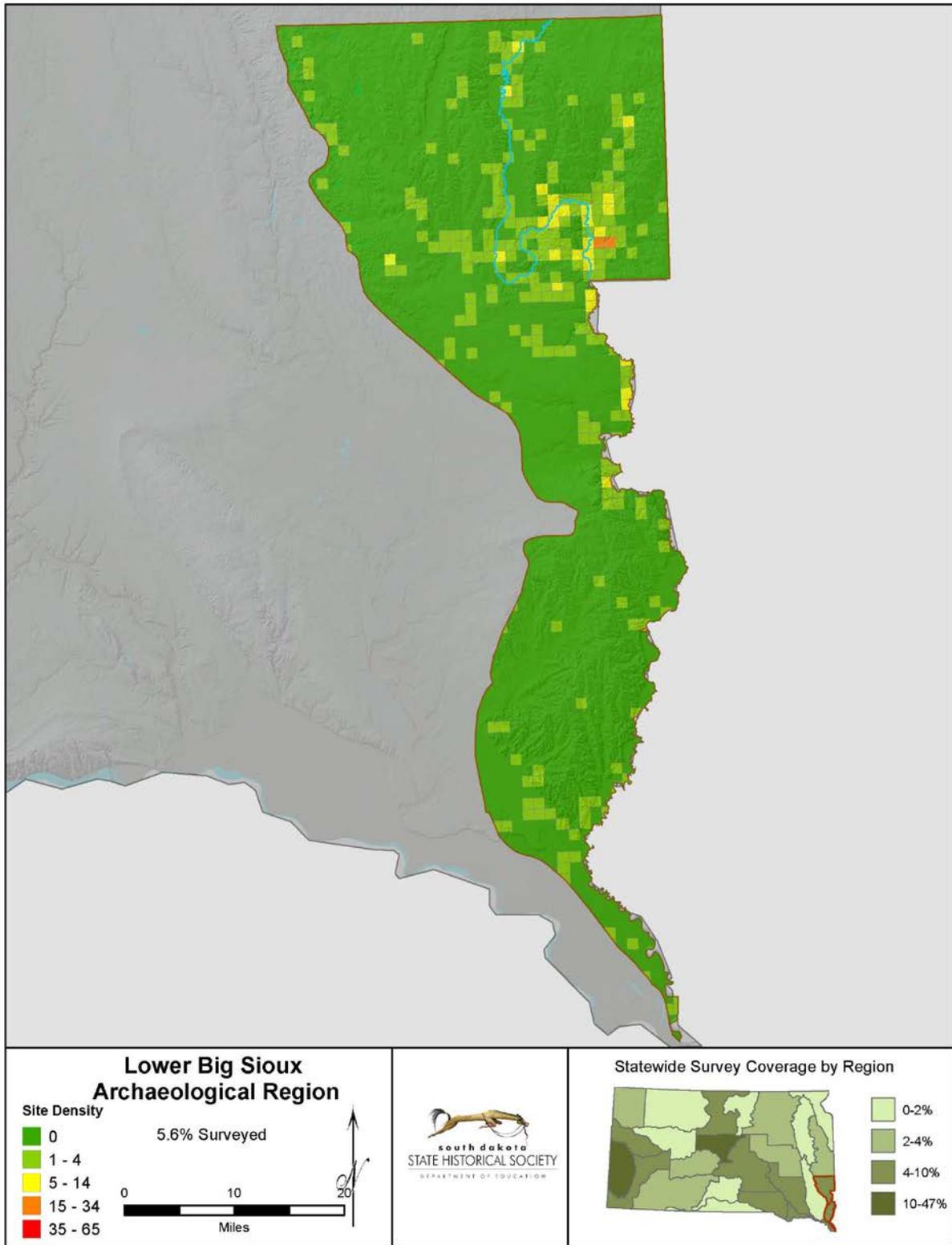


Figure 188. Density of known archaeological sites in the Lower Big Sioux region.

## Previous Archaeological Investigations

Study of mound and village sites in the Lower Big Sioux Region began in the nineteenth century (Barrandt 1873; Lewis n.d.). At the same time, national interest in the “mound builder” culture led to the looting of many mounds, including many of those on private land in eastern South Dakota. In the following decades, W.E. Myer of the Smithsonian and W.H. Over of the state museum conducted more formal excavations at the Brandon village and mounds and Split Rock Creek mounds (Myer 1921; Over and Meleen 1941; Sigstad and Sigstad 1973). The Brandon Village was assigned to the Initial Middle Missouri variant of the Plains Village period. The cultural affiliation of the Split Rock Creek mounds is not clear, but they probably were used from the Woodland through Protohistoric periods. Omaha and Ponca elders identified both of these sites as belonging to their immediate ancestors (Myer 1921). Additional excavations have been conducted by Gant and Brandon (1963), Hannus (1974), Hurt (1963), and Zimmerman (1975). Later projects at the Brandon and Split Rock Creek sites included survey and test excavation (Palmer and Winham 2007; Winham and Lueck 2003; Winham *et al.* 1983).

Since the 1970s, other work in the region has included both cultural resource management surveys and basic research (Hannus, Lueck and Winham 1987; Sigstad 1973b Winham *et al.* 1983). The Archaeology Laboratory of Augustana College sponsored a series of research projects (Hannus *et al.* 1986; Lueck *et al.* 1987a, 1987b, 1988a, 1988b; Winham and Lueck 1989; Winham *et al.* 1985). Several projects have been associated with the proposed alterations to Highway 11 (Haberman 1986b, 1988).

## Historic Contexts

***Pre-Woodland:*** No Paleoindian or Early Archaic sites have been recorded in this region. This likely indicates that any such sites are deeply buried. The area contains two Middle Archaic sites, 39LN7 and 39LN19, based on projectile point types. The Blood Run site, 39MH2, contained a projectile point similar to those identified in the northwestern plains as belonging to the Yonkee complex. If this identification is correct, it would indicate a fairly early Late Archaic or Woodland date for this component.

***Late Archaic:*** Several sites in the region are identified as Late Archaic, based on the presence of Pelican Lake or Besant projectile points. These sites have not been studied so their relationship to contemporary Woodland tradition sites is not clear.

***Woodland:*** Woodland sites, especially mound groups, are common in the region (Barrandt 1873; Gant and Brandon 1963; Hurt 1963; Lewis n.d.; Over and Meleen 1941; Sigstad 1973a, 1973b). The majority of the Woodland resources of the region have been recorded in Minnehaha County, especially in the Split Rock Creek and Beaver Creek vicinity. Little is understood regarding the cultural dynamics of Woodland populations in the area. Materials associated with the Sherman Park Mounds (Gant and Brandon 1963; Hurt 1963) suggest Middle Woodland, Great Oasis, and protohistoric Dakota Sioux interments.

***Great Oasis:*** This region contains four Great Oasis village sites, a campsite, one multiple burial, and one single burial with diagnostic Great Oasis pottery. The four known village sites are 39LN7, Heath Village (39LN15), 39LN21, and Split Rock Creek Village (39HM202). A test

excavation unit at the Heath Site yielded a radiocarbon date of 940 BP for the Great Oasis occupation (Sigstad and Hannus 1974; Zimmerman and Hannus 1976). Woodland and Mill Creek pottery were found on the surface of the site, suggesting that it contains at least three components; however, their extent is not known. A test excavation at the Bonander Site (39MH102) uncovered animal bone, ceramics, mussel shell, fire-cracked rock, flakes, and chipped-stone debris. Soil samples from a hearth contained fish bones and scales, maize kernels and cob fragments, and charred remains of sunflower, *Chenopodium*, ragweed, grass, and plum seeds. No distinct cultural level was found, suggesting that this site was a temporary camp rather than a village (Haberman 1993c, 1993d). The site was radiocarbon dated to 1040 BP. A similar assemblage was recorded for 39MH33, but no excavations were done, and the nature of the site is not well defined (Archaeological Research Center records). A single test excavation unit at 39LN21 revealed a dense stratum of animal bone, fire-cracked rock, pieces of catlinite, Great Oasis ceramics, flakes, and chipping debris (Taylor 2015).

The two burial sites were exposed in a creek bank and in the excavation of a pit toilet. The one in the creek bank (39MH10) was a single skeleton with Great Oasis pottery, chipped-stone tools, shell, and animal bone. The other (39LN70) included twelve sets of human remains, a Late Prehistoric side-notched arrow point, three Great Oasis sherds, a celt, a mano, and a mano-metate set.

**Mill Creek Variant.** Mill Creek materials are ascribed to the region by Ludwickson *et al.* (1981). This identification is based on work conducted by Over (Sigstad and Sigstad 1973) at burial mounds in Union County. Additional research is necessary to confirm the presence of Mill Creek populations in the region as distinct from Initial Middle Missouri and Great Oasis.

**Initial Middle Missouri:** Major excavations were conducted at the Brandon site in 1939–1940 (Over and Meleen 1941). Excavation of the Brandon Village site (39MH1) provided a view of Initial Middle Missouri developments in the region. Six houses were completely excavated and a seventh bisected with a trench (Over and Meleen 1941). The houses were found to be rectangular and constructed by digging a shallow pit and using large timbers to support roof and walls. The house interiors contained one or more hearths and subfloor storage pits. The artifact assemblages consisted mostly of pottery sherds from large, globular jars and bowls, buff to gray in color and tempered with grit. Various forms of rims and decoration occurred; however, these variations were consistent with use of the site by a single culture. Other artifacts included chipped-stone arrow points and scrapers, celts, mauls, mano-metate sets, and bone items such as awls, hoes, fleshers, scrapers, and a bracelet. Although the presence of bison scapula hoes suggests horticulture, no squash or maize was recovered from the site. Food remains were dominated by bison and deer bone, but also included shellfish shells and turtle bone.

Apart from Brandon Village, the presence of Initial Middle Missouri sites in this region, as opposed to Great Oasis, Mill Creek, and Oneota, is limited to four sites: 39LN5, 39LN7, 39MH30, and 39MH202. The latter site contained both Initial Middle Missouri and Great Oasis pottery, but the relationship of the two at this site is unclear (Gillen 1993). The Sargeant Site, 39LN5, is described as a village, but no earth lodge depressions were noted, and the site has not been test excavated. Surface finds include ceramics, chipped-stone artifacts, fire-cracked rock, groundstone tools, animal bone, shell, and ocher nodules (Lueck 1992; Sigstad 1973a). Site 39LN7 is an extensive surface artifact scatter recorded as a village but lacking house depressions. It contained

Initial Middle Missouri and Great Oasis ceramics, as well as intermediate forms (Lueck *et al.* 1988; Sigstand 1973a). The site has not been test excavated. The Lauer Site, 39MH30, is also listed as an Initial Middle Missouri village, but it has not been test excavated, and no house depressions are reported from the site (Archaeological Research Center records).

**Oneota.** In South Dakota, the Oneota tradition primarily represents northern Siouan-speaking groups. Oneota materials are present at the very large Blood Run site (39LN2; sometimes called the Rock Island site) and the Canton Mounds site (39LN1). The former lies primarily on the left bank of the Big Sioux in Iowa. Based on ethnographic records, these Oneota sites represent the immediate ancestors of today's Omaha, Ponca, Ioway, and/or Dakota. The Omaha and Ponca, in particular, recognize these places as former villages of their people (Myer 1921).

## Sites by Period

*Paleoindian:* None

*Early Archaic:* None

*Middle Archaic:* 39LN7 (Duncan), 39LN19

*Late Archaic:* 39LN20, 39LN26, 39LN34 (Besant), 39LN72 (Besant), 39MH32 (Pelican Lake), 39MH80, 39MH105

*Late Archaic or Woodland:* 39LN32

*Woodland:* 39LN3, 39LN6, 39LN9, 39LN15, 39LN28, 39LN71, 39MH2, 39MH3, 39MH4/39MH11, 39MH5, 39MH6, 39MH7 (Randall Phase), 39MH11, 39MH21, 39MH23A, 39MH23C, 39MH29, 39MH34, 39MH74, 39MH77, 39MH183 (Randall Phase?), 39MH202, 39MH209, 39MH222, 39MH233, 39MH234, 39MH235, 39MH237, 39MH238, 39MH241, 39MH242, 39MH243, 39MH244, 39MH245, 39MH246, 39MH247, 39MH249, 39MH250, 39MH252, 39MH253, 39MH254, 39MH258, 39MH259, 39MH260, 39MH261, 39MH263, 39MH264, 39MH267, 39MH291, 39UN1

*Late Prehistoric:* 39LN12, 39MH165

*Late Prehistoric or Plains Village:* 39MH212

*Great Oasis:* 39LN7, 39LN15, 39LN21, 39LN70, 39MH10, 39MH33, 39MH102, 39MH202

*Plains Village:* 39LN5 (Initial Middle Missouri), 39LN7 (Initial Middle Missouri), 39LN15 (Mill Creek), 39MH1, 39MH23?, 39MH23A, 39MH23B, 39MH30 (Initial Middle Missouri), 39MH82 (Coalescent), 39MH202 (Initial Middle Missouri), 39MH212, 39MH296, 39UN7, 39UN11

*Oneota:* 39LN1, 39LN2, 39LN104

*Protohistoric:* 39LN1, 39LN2, 39MH61 (stone circle), 39MH65 (stone circle), 39MK25 (camp)

*Historic:* (Artifact scatter unless otherwise noted.) 39LK69 (drive-in theater), 39LN8, 39LN13, 39LN22, 39LN23, 39LN26, 39LN30 (depression), 39LN37 (depression), 39LN40 (monument), 39LN42 (depression), 39LN49 (depression), 39LN54, 39LN55 (depression), 39LN60 (wagon box), 39LN64, 39LN69, 39LN77 (gas station), 39LN81 (windmill), 39LN87 (foundation), 39LN88 (road, dam), 39LN2007 (railroad), 39MH6 (school), 39MH7, 39MH8, 39MH12, 39MH15, 39MH19 (foundation), 39MH25 (road), 39HN28, 39MH36 (depression), 39MH48 (dump), 39MH57 (depression), 39MH62 (depression), 39MH63 (depression), 39MH68 (foundation), 39MH73 (well), 39MH76 (industrial dump), 39MH80, 39MH81, 39MH89 (dump, foundation), 39MH100, 39MH101, 39MH105, 39MH106, 39MH111, 39MH112 (depression), 39MH117, 39MH118 (foundation), 39MH126, 39MH135 (school), 39MH144, 39MH173 (dump), 39MH175 (quarry), 39MH176 (quarry), 39MH177 (quarry), 39MH178 (quarry), 39MH179, 39MH181 (well), 39MH188, 39MH190, 39MH204, 39MH211, 39MH213, 39MH214, 39MH215, 39MH218 (depression, foundation), 39MH219 (depression), 39MH225 (foundation), 39MH227 (depression), 39MH229 (foundation, well), 39MH251 (dugout), 39MH262 (burial), 39MH263, 39MH271, 39MH280 (gas station), 39MH283 (dump), 39MH284, 39MH285 (dump), 39MH286, 39MH288 (town), 39MH295 (depression), 39MH296 (foundation), 39MH298, 39MH323 (school), 39MH324 (windmill), 39MH326 (well), 39MH2003 (railroad), 39MK24 (smithy), 39MK25, 39UN2, 39UN5 (cemetery), 39UN6 (cemetery), 39UN13 (trail, possible graves, depressions, reported gun cache), 39UN21 (cemetery), 39UN41, 39UN42, 39UN47, 39UN49 (foundation, well), 39UN51 (foundation, depression), 39UN52, 39UN53

*Historic Farmsteads:* 39LN4, 39LN31, 39LN40, 39LN41, 39LN46, 39LN52, 39LN53, 39LN59, 39LN76, 39LN78, 39MH11, 39MH46, 39MH118, 39MH174, 39MH182, 39MH187, 39MH208, 39MH210, 39MH221, 39MH231, 39MH257, 39MH266, 39MH287, 39MH292, 39MK26, 39UN18, 39UN22, 39UN24, 39UN46, 39UN50

## Prehistoric and Historic Themes

***Sacred Sites, Traditional-Use Sites, and Burials.*** The Dakota and Yankton called the Big Sioux River above the falls (Sioux Falls) *Wakpa ikpa kshan*, meaning river with a crooked point, and the stretch below the falls *Hohe Wakpa*, noisy river (Bray and Bray 1976:71; Howard 1976:301). The Santee Dakota also called it *Cankusduta*, Splitting Log River (Howard 1976:301; Tarbell 1949:280). The Omaha called it *Xe*, meaning buried (Fletcher and La Flesche 1911:91). An 1890 report noted the presence of burial mounds and numerous boulder effigies in the Big Sioux Valley in Lyon County, Iowa, east of the Lower Big Sioux. These were said to be in the form of circles and ovals (Lewis 1890:269).

***Mounds.*** The Lower Big Sioux region contains numerous burial mounds generally assigned to the Woodland period and containing both primary and secondary burials. Most of them are, or were, circular, with a lesser number of oval and linear types. These mounds occurred singly or in groups of between two and 32 mounds. Mounds typically were placed on high points in the landscape (Lewis 1889, 1898). Excavated mounds were found to contain one or several burials, but some mounds did not contain any human remains. Primary burial positions vary and include extended, flexed, and in a sitting position. Items found with the human remains in these mounds generally were few in number and consisted of shell or copper beads, pieces of catlinite, the occasional chipped-stone projectile point or scraper, or grooved mauls. One bundle burial in a mound at 39LN10 had pieces of mica, quartz crystals, a geode fragment, and a pine cone with it

(Archaeological Research Center site records). Red ocher was found in some mounds, suggesting that bodies of the deceased or their bones were covered in this pigment prior to burial. It is clear that most of the mounds recorded in the late nineteenth century have now been lost to plowing, road building, housing developments, and the like (Boen and Sieverding 2005; Buhta *et al.* 2009; Lueck *et al.* 1988).

Many mounds were reused as burial sites, resulting in the occurrence of human remains and artifacts dating to the Plains Village and Protohistoric periods in addition to the original Woodland burials. Some mounds and villages are in close proximity and might have been used at the same time; however, the more typical pattern is a Plains Village era settlement near a Woodland era mound or mound group. Intrusive horse burials, as well as human burials, sometimes are found at mound sites, including 39MH5 and 39MH6 (Over and Meleen 1941).

Two Woodland mound groups are associated with Great Oasis villages (39LN15, 39MH24/39MH202), which may lend support for the hypothesis that Great Oasis developed in place from local Woodland complexes (Sigstad 1974; Sigstad and Hannus 1974). Two other mound groups, 39LN1 and 39LN2, are associated with Oneota villages. Site 39MH209 is probably obliterated now but was originally described as next to a “Mound Builders” village (Archaeological Research Center site records). If true, this represents a significant loss to the state’s history, as very few Woodland settlement sites have been investigated.

*Mound sites:* 39HT139, 39LN1, 39LN2, 39LN3, 39LN6, 39LN8, 39LN9, 39LN10, 39LN15, 39LN28?, 39LN43, 39LN71, 39MH2, 39MH3, 39MH4, 39MH5, 39MH6, 39MH11, 39MH21, 39MH23A, 39MH24, 39MH27, 39MH29, 39MH74, 39MH201, 39MH202, 39MH203, 39MH209, 39MH222, 39MH232, 39MH234, 39MH235, 39MH237, 39MH238, 39MH241, 39MH242, 39MH243, 39MH244, 39MH245, 39MH246, 39MH247, 39MH249, 39MH250, 39MH252, 39MH253, 39MH254, 39MH258, 39MH259, 39MH260, 39MH261, 39MH263, 39MH264, 39MH267, 39MH289, 39MH291, 39MH322, 39UN1, 39UN13, 39UN54.

*Historic Quarries.* Sioux quartzite and catlinite were quarried here.

## **Archaeological Potential**

The Lower Big Sioux region is of special importance in understanding the origin and development of the Woodland tradition, the beginnings of horticulture and life centered on semi-permanent villages, and the complex belief systems reflected in the very widespread pattern of mound construction and use. Although many mound sites have been destroyed or damaged, this region contains several intact mounds. This region will also be important in tracing the relationship between Woodland, Great Oasis, Oneota, and Initial Middle Missouri cultural developments. The presence of what appear to be transitional Woodland-Great Oasis and Woodland-Oneota sites should allow a clearer picture of how local Woodland cultures developed over the centuries into historic Indian nations such as the Ponca, Omaha, and Dakota.

The Blood Run site (39LN2) and other large village or ceremonial sites can provide a better understanding of the long distance exchange of good and ideas (Henning and Schnepf 2014; Henning and Thiessen 2004).

The Lower Big Sioux region is well-suited to address early settlement of South Dakota, early industrial development and urbanization, stone quarrying (Sioux quartzite) techniques, and ethnic Scandinavian settlement of the region.

## **Management Considerations**

While several Woodland mounds in the region have been formally excavated or dug by amateurs, very little is known of Woodland life-ways apart from mound construction and use. Priority should be given to preserving and investigating Woodland occupation and special activity sites. The region undoubtedly contains the remains of burial mounds that have been leveled by plowing and erosion but not entirely removed. Accidental exposure of Woodland burials can be expected where mounds once existed. Other mounds have been destroyed entirely by housing developments, highway construction, or looting, making preservation of the remaining intact mounds particularly important. More recent studies of mound sites in eastern South Dakota have provided valuable updates on the condition of the recorded sites (Boen and Sieverding 2007; Buhta *et al.* 2009; Winham and Lueck 2003).

Some sites in this region are likely to be deeply buried, requiring special techniques for site discovery and testing. For example, sediment cores taken at 39LN15 in 2006 indicated intact archaeological deposits to a depth of over four meters (Archaeological Research Center site records).

Urban areas in this region continue to expand, further threatening archaeological sites of all types. Developers and local governments should be encouraged to take the potential presence of archaeological sites into account as they plan for expansion projects.

Protection of much of the South Dakota portion of the Blood Run Site, 39LN2, as Good Earth State Park will assure preservation of this important archaeological and cultural site.

## **Sites Listed in the National Register of Historic Places**

39LN2 (Blood Run Village), 39MH1 (Brandon Village)

## Region 23: Upper Big Sioux

### Setting

The Upper Big Sioux region lies within the general Coteau des Prairies physiological region, a low plateau that covers much of eastern South Dakota. The Upper Big Sioux archaeological region encompasses the upper reaches of the Big Sioux River drainage basin in portions of Roberts, Grant, Codington, Deuel, Hamlin, Brookings, Moody, and Lake counties. The general topography of the region is composed of the Big Sioux River valley, river bluffs and adjacent plains. The Big Sioux River flows south from northeastern South Dakota, joining the Missouri River near Sioux City, Iowa. The archaeological region also contains numerous permanent and intermittent lakes, especially west of the Big Sioux. This region lies within the glaciated portion of the northern Great Plains, with typical gently rolling topography with shallow lakes and streams. Native vegetation is mid and tall grass prairie, dominated by big bluestem and little bluestem, with stands of deciduous trees along the river valley.



*Figure 189. Upper Big Sioux landscape (ARC photo).*

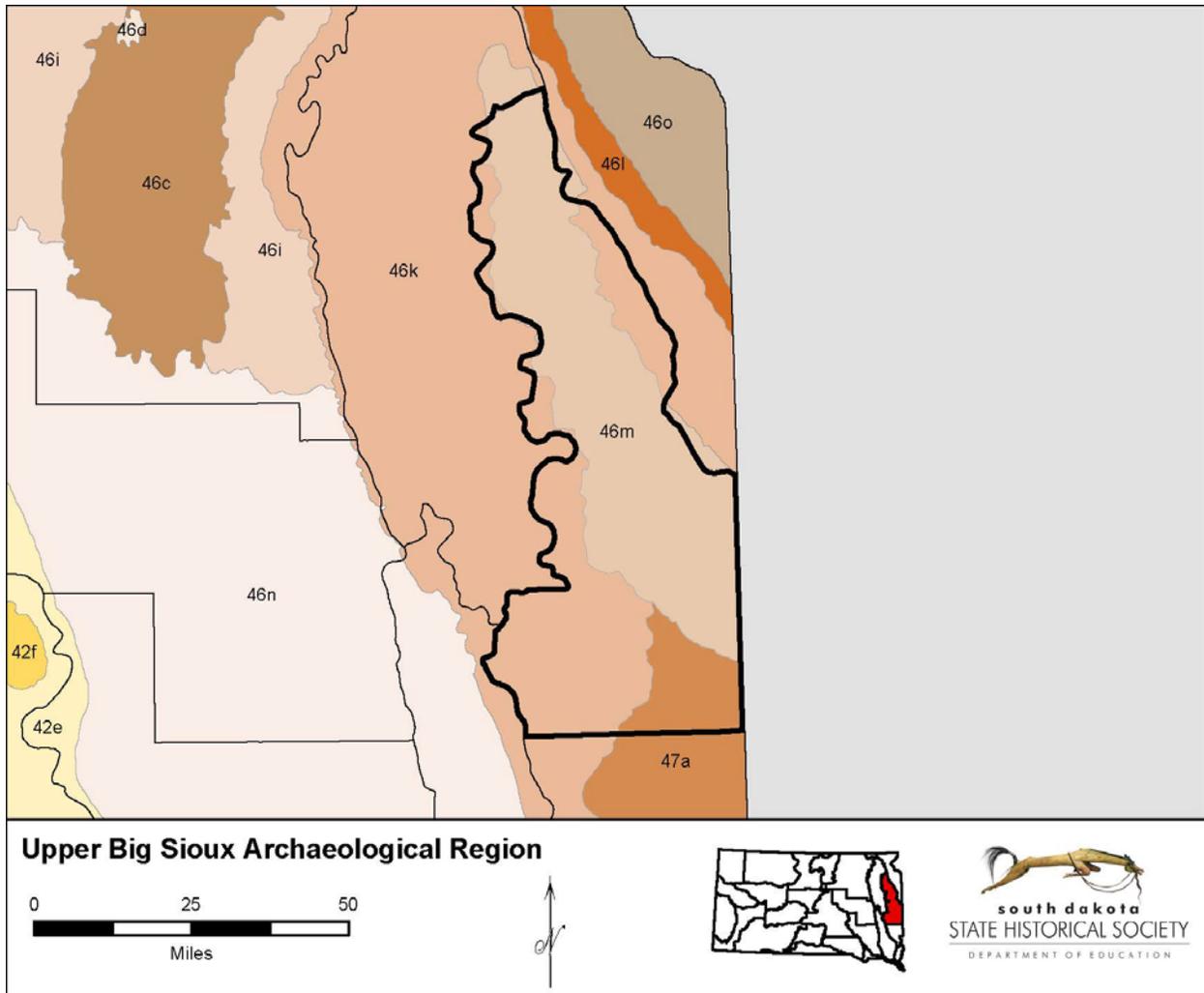


Figure 190. Ecogeregions of the Upper Big Sioux archaeological region.

46: Northern Glaciated Plains

46k: Prairie Coteau, glaciated platform of hummocky, rolling terrain raised above surrounding drift plains; stream network lacking; high concentration of large lakes and wetlands.

46m: Big Sioux Basin, only lightly glaciated; erosional, rather than depositional landscape; rolling, with incised stream drainage network, few wetlands.

47: Western Corn Belt Plains

47a: Loess Prairies, gently rolling in the northern section, more dissected in the southern section; streams have a quartzite substrate providing diverse habitat for aquatic life.

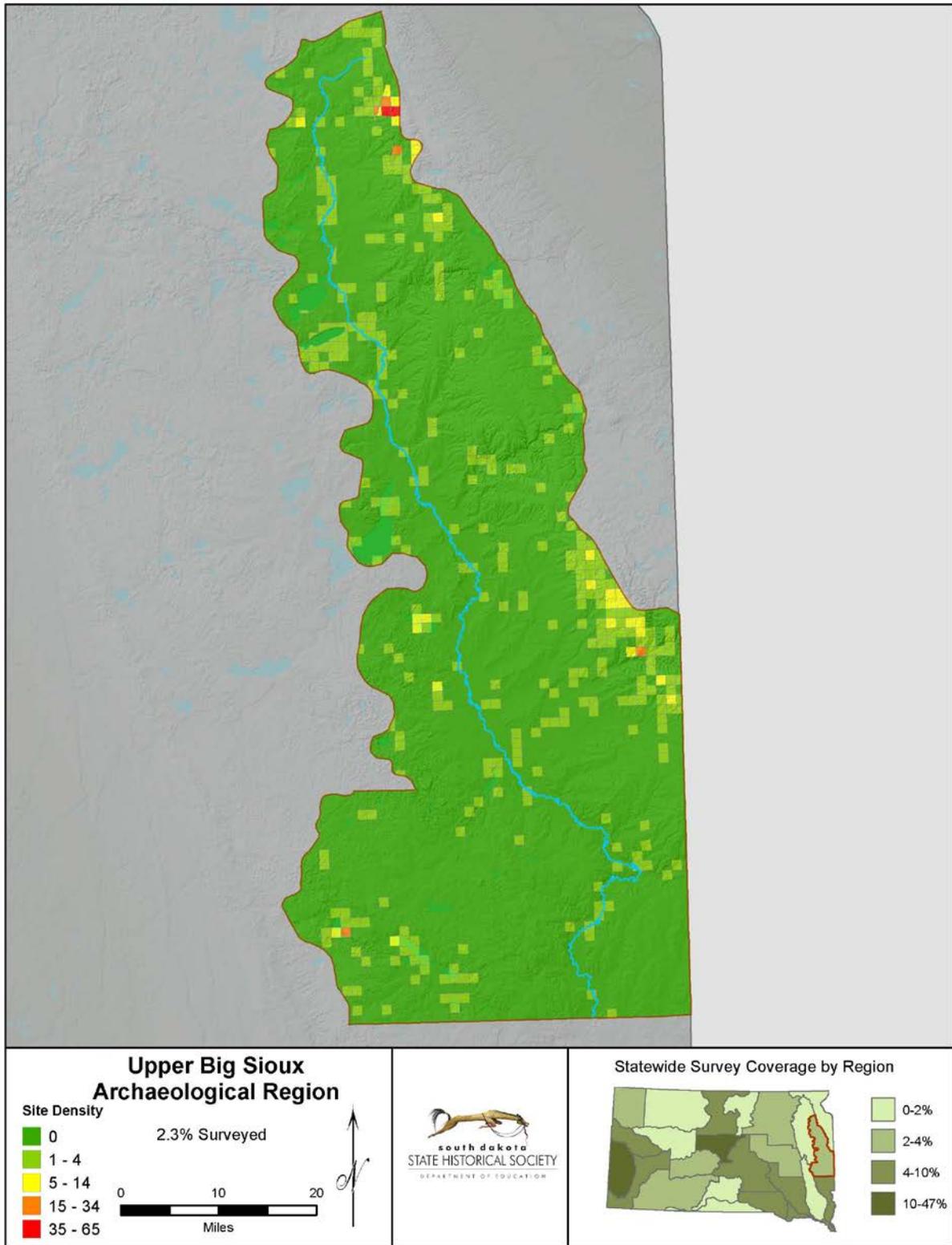


Figure 191. Density of known archaeological sites in the Upper Big Sioux archaeological Region.

## Previous Archaeological Investigations

T.H. Lewis (n.d.) and W.H. Over (Sigstad and Sigstad 1973) conducted the earliest archaeological investigations in the Upper Big Sioux Region in the 1880s and 1920–1940. Most of the sites they investigated were Woodland burial mounds. Following these early investigations, little research was conducted in the region until the 1970s. Portions of the Big Sioux River were examined by the state archaeologist's office in 1970 and 1973 (Sigstad 1973a, 1973b). State Historic Preservation Office personnel surveyed portions of Oakwood Lakes State Park in 1979, recording four sites (Ruple 1982). In 1980, Barbara Lass (1980) conducted a sample survey of portions of the region and recorded 26 sites. These included a village with Plains Village and Woodland components (39DE5) and an early Plains Village occupation (39DE6) that were later partially excavated (Haug 1979b, 1982; Lass 1980b). The Northern Border Pipeline survey also examined portions of the region (Hannus *et al.* 1982). In addition to these efforts, a number of small-scale contract and research surveys have been conducted within the region (Hannus, Winham and Lueck 1986; Lueck, Winham and Hannus 1987c). Site 39BK8 is a Great Oasis village, excavated in the early 1980s (R. Alex 1980; Buechler 1982; Ruple 1982). Excavations at nearby site 39BK7 revealed Middle Woodland, Late Woodland, and Oneota components (Greer 1979; Ruple 1982; Hannus 1981). Excavations at 39BK6, a scatter of groundstone mauls, a projectile point, and a few flakes, showed that no archaeological materials lay below the surface (Burns 1977).

In 2015 an archaeological survey and systematic shovel testing demonstrated that all of Lake Herman State Park in Lake County contains archaeological deposits dating from the Middle Woodland through Historic periods (Busch 2016; Donohue 2016; Reece *et al.* 2016). Several previously assigned site numbers were then subsumed under the single number 39LK100. This site was placed on the South Dakota Register of Historic Places in 2016 (Archaeological Research Center site records).

## Historic Contexts

**Paleoindian.** The earliest known site in the Upper Big Sioux region is 39BK100. An excavation project sponsored by the South Dakota State Historical Society, South Dakota Archaeological Society, and Siouxland Heritage Museum revealed a paleosol containing a lanceolate projectile point preform, flakes, and bone, as well as a feature containing mammoth bone, all exposed in the bank of the Big Sioux River. Other mammoth bone was found in the riverbank and stream. Charcoal from the cultural zones yielded a date of 10,910 BP (Archaeological Research Center site records). Also on record is a Clovis point found near Lake Herman (Archaeological Research Center site records). The point is made of a gray chert found in eastern Nebraska. A Scottsbluff projectile point from a private collection is recorded as the Trasta-Moberg-Hall Site, 39BK19. Local informants reported this as a bison kill site; however, this report has not been verified as of this writing. This site is near a natural slough (Archaeological Research Center site records).

The multiple component site 39DE5 contained lone projectile points dating to the Folsom, Late Paleoindian, and Middle Archaic periods, but their relationship to the main site deposit is unknown (Haug 1982). The main site was a village dating to the Woodland or Plains Village period. The Ries Site (39DE7) contained Paleoindian Alberta projectile points, as well as Archaic and

Woodland artifacts exposed after plowing a field (Haug and Sterner 1978). This site has been surveyed but not excavated.

**Early and Middle Archaic.** No Early Archaic sites are known from this region. The Lake Madison or Hilde Site, 39LK7, is a Middle Archaic burial ground on the shores of Lake Madison. Gravel quarrying and erosion of a steep slope exposed several human burials. The site contained a hearth, excavated by the land owner, and a human bone that yielded dates of 3800 and 4040 BP, placing it in the Middle Archaic period. This site apparently comprised both primary flexed and secondary burials placed in pits dug into a clay layer capping glacial till. As the site continued to erode, at least 18 partial skeletons were exposed. All but one had been buried with large ovate preforms and other items such as a grooved piece of catlinite. The bone was heavily deteriorated, making an exact count difficult. Both sexes and all ages were represented. A young child had been buried with a preform in his or her hands and other stone artifacts in close proximity. Most of the artifacts were of nonlocal tool-stone, including Knife River flint, Tongue River silicified sediment, and rose quartz. Some of the human bones retained traces of red ocher. A few bison bones were found in or near one of the secondary burials.

Another Middle Archaic site, 39CD23, lay near the surface near the shore of a natural lake. A wide variety of artifacts found on the surface and in five excavation units suggest the presence of a camp site. The site had Middle Archaic Duncan and Oxbow projectile points, knives, scrapers, hammerstones, a graver, flaking debris, fire-cracked rock, and a small amount of burned animal bone. No features were found. The presence of a pottery sherd indicates that the site was used into the Woodland period. The site has been heavily damaged (Rothaus 2011).

**Woodland.** Woodland sites are common in the Upper Big Sioux Region (Hannus 1981; Hannus *et al.* 1982; Haug 1979c, 1982b; Lass 1980a; Ruple 1982; Sigstad 1973a, 1973b). Major excavations at site 39BK7 in the Oakwood Lakes State Park vicinity revealed a lower, Woodland, component showing use of the site for bison hunting and processing and an upper, early Plains Village, component with an emphasis on lake resources like fish and waterfowl and cultivated maize (Hannus 1981). A similar resource base was evident in test excavations at the late Woodland Summit Lake site (39GT19). This warm-season camp site contained bone from a wide range of animals, including bison, canid, rabbit, beaver, bird, fish, turtle, and rodents, as well as clam and mussel shell. The site had a variety of chipped-stone tools, as would be expected of a base camp or seasonal village. Ceramics from the two test pits were clearly related to Lake Benton types from the Upper Midwest (Houser 1996).

The region contains numerous Woodland burial mounds (Bruce *et al.* 2010a, 2010b). Spawn Mound in Lake County (39LK1/39LK201) was partially excavated in the 1960s and found to contain a primary burial lying in a burial pit under a concentration of bison bone and rock and secondary burials of several individuals. Woodland projectile points and scrapers, a cord-impressed pottery sherd, fragments of pipestone, metal arrowpoints, a fragment of a ring, and glass beads were also found in the mound (Howard 1968; Rothaus 2011). One of two mounds on a narrow isthmus between Lake Madison and Long Lake recorded as 39LK2 contained five burial pits with a minimum of 11 individuals. Four of the burials appear to have been secondary bundle burials. The fifth individual was in a sitting position with knees drawn up to the chin. Shell or bone beads and fragments of clam shell were found with the skeletons (Sigstad and Sigstad 1973).

**Great Oasis.** Great Oasis materials are fairly common in the Upper Big Sioux Region. Test excavations conducted at the Volunteer site, 39BK8 (Alex 1980b; Buechler 1982b; Cheever 1980) suggest the site is a single occupation of Great Oasis peoples. Alex (1980b) proposes the subsistence economy was based on a generalized strategy of small mammal exploitation; some charred corn is present in soil samples. Haug (1982b) also reports a Great Oasis component at the Winter site (39DE5). Additionally, there are unconfirmed reports of Great Oasis materials from the Lake Poinsett vicinity.

**Unspecified Plains Village.** Lewis (n.d.c) has recorded earthworks suggesting the presence of a fortification ditch in Brookings County.

**Mill Creek Variant.** Haug (1979c, 1982b) reports broad-trailed ceramic materials that resemble Cambria-like materials. It is not known if Cambria populations utilized the region or if the materials are a local trait.

**Oneota.** Shell-tempered ceramics from the late component at 39BK7 are similar to Oneota materials from sites outside South Dakota. It is not known if the component represents extensive Oneota utilization of the prairie lakes region. This type of exploitation appears to conform to Oneota subsistence economies in other areas of the Plains; however, more data is needed to define this cultural component. The multiple-component site 39LK50/39LK100 contained Oneota ceramics, as well as Woodland (Fox Lake and Lake Benton) and Plains Village ceramics.

## Sites by Period

*Paleoindian:* 39BK19, 39CD8, 39CD9?, 39DE7

*Early Archaic:* None

*Middle Archaic:* 39CD9, 39CK23, 9DE5, 39DE7, 39LK7

*Late Archaic:* 39BK35 (Besant), 39BK39, 39BK61, 39CD9 (Pelican Lake, Besant)

39CD12, 39CD43, 39LK37 (Besant), 39LK39 (Besant)

*Unknown Archaic:* 39BK2, 39CD9, 39DE7

*Late Archaic or Woodland:* 39BK12, 39BK137, 39DE18, 39MO26

Woodland: 39BK3, 39BK5, 39BK7, 39BK9, 39BK17, 39BK36, 39BK78, 39BK101, 39BK102, 39BK103, 39BK143, 39BK237, 39CD2, 39CD12, 39CD23, 39DE7, 39DE23, 39DE60, 39GT19, 39HL12?, 39LK1/39LK201, 39LK7, 39LK12, 39LK15, 39LK50/39LK100, 39LK66, 39MO1, 39MO2, 39MO3

*Oneota:* 39BK7, 39LK50/39LK100

*Great Oasis:* 39BK8, 39HL6

*Plains Village:* 39BK6, 39BK13, 39BK20, 39BK27, 39CD9, 39CD58, 39GT19, 39LK50/39LK100

*Plains Village or Late Prehistoric:* 39BK14, 39BK38, 39CD71

*Late Prehistoric:* 39BK109, 39CD36, 39DE18, 39LK37 (Avonlea), 39LK40

*Protohistoric:* 39CD1 (alignment), 39DE18 (camp), 39DE19 (inscription)

*Historic:* (Artifact scatters unless otherwise noted.) 39BK2, 39BK21 (town), 39BK42, 39BK43, 39BK46, 39BK65, 39BK70 (school), 39BK80 (school), 39BK81 (foundation), 39BK83, 39BK94 (depression), 39BK104 (whistle stop), 39BK108, 39BK132, 39BK157, 39BK159, 39BK163 (dump), 39BK2003 (railroad), 39BK2073 (railroad), 39CD1 (foundation), 39CD31 (dump, dugout), 39CD37 (foundation), 39CD42 (road), 39CD53, 39CD54 (dump), 39CD55 (depression), 39CD59 (dump), 39CD62 (foundation), 39CD64, 39CD2000 (railroad), 39CD2016 (railroad), 39CD2052 (railroad), 39DE4, 39DE15 (depression), 39DE20 (depression), 39DE23, 39DE61 (foundation), 39DE67, 39DE69, 39DE72 (depression), 39DE78 (depression, foundation), 39DE81, 39DE83, 39DE2067 (road), 39GT23 (dump), 39GT27 (dump), 39GT31, 39HL2003 (railroad), 39HL2073 (railroad), 39HL2171 (ditch), 39LK14 (horse burial), 39LK15 (railroad feature), 39LK35, 39LK43 (school), 39LK52, 39LK65, 39LK67, 39LK2007 (railroad), 39MH185 (well), 39ML2073 (railroad), 39MO6, 39MO8, 39MO9 (foundation), 39MO11 (town), 39MO12, 39MO14 (depression), 39MO17 (cabin), 39MO18 (burial), 39MO22 (dump), 39MO23, 39MO2007 (railroad), 39RO90 (depression), 39RO114 (gas station)

*Farmsteads:* 39BK16, 39BK22, 39BK23, 39BK36, 39BK41, 39BK72, 39BK76, 39BK82, 39BK89, 39BK134, 39BK158, 39BK235, 39CD33, 39CD38, 39CD40, 39CD41, 39CD48, 39CD56, 39CD72, 39DE14, 39DE42, 39DE71, 39DE73, 39GT25, 39GT30, 39HL16, 39HL22, 39HL29, 39LK26, 39MH86, 39MO7, 39MO18, 39MO19, 39RO91

## **Prehistoric and Historic Themes**

***Woodland to Plains Village Transition.*** The Woodland period is represented primarily by burial mounds in this region; however, four likely occupation sites have been recorded. Site 39DE12 is a Woodland camp or village at the edge of a plowed field next to a lake shore. A few chipped-stone artifacts, some animal bone fragments, and a few pieces of shell were observed on the site surface, but a local collection from the site contains 20 projectile points, several end-scrapers, a large knife fragment, and several grit-tempered sherds (Lass 1980c). This site has not been test excavated. Site 39DE23 is another lakeside occupation site with Middle Archaic and Woodland components. Much of the site has been lost to erosion and development and use of the area as a public park; however, intact buried deposits may still be present (Rothaus 2011). Sites such as these can potentially provide information about Woodland settlement patterns necessary for an understanding of the Woodland to Plains Village transition.

The Lake Herman site, 39LK100, is a complex, multiple-component buried site that has suffered damage from installation of facilities for a state park. Surveys and limited subsurface testing at this location have encountered ceramics, animal bone, chipped-stone and ground-stone artifacts, hearths and roasting pits, and one human burial, all on the bluff above the lake. Artifacts

include Woodland Fox Lake, Woodland Lake Benton, Oneota, and unspecified Plains Village ceramics (Busch 2015, 2016; Donohue 2003b; Fosha 2000b; Hanenberger 2000b; Hanenberger and Gilbert 2003). It would be hard to overstate the importance of this site to an understanding of major developments in the history of the region.

Other Woodland, Great Oasis, and Initial Middle Missouri occupation sites, such as 39BK7, 39BK8, and 39GT19 can help tell the story of the shift from a mobile, bison-hunting economy to more settled villages with subsistence based on maize and squash farming, fishing, and hunting waterfowl. These sites will also be important in sorting out the relationships between various Late Woodland and early Plains Village complexes, such as Fox Lake, Lake Benton, Great Oasis, and Oneota.

*Burial Mounds:* 39BK3, 39BK5, 39BK7, 39BK9, 39BK36, 39BK78, 39BK101, 39BK102, 39BK103, 39BK237, 39CD2, 39CD6, 39CD9, 39DE1, 39DE68, 39HL4, 39LK2, 39LK12, 39LK15, 39LK16, 39LK36, 39LK51, 39LK71, 39LK72, 39LK100, 39LK1/39LK201, 39MO1, 39MO2, 39MO3, 39MO10, 39MO30

***Sacred Sites, Traditional-Use Sites, and Burials.*** As noted above, the Prairie Coteau is a noted sacred place in Dakota tradition, particularly that portion southeast of the archaeological region near Pipestone, Minnesota. Its name in Dakota simply translates to rocky ridge (Bray and Bray 1976:61). The portion of the Prairie Coteau near Big Stone Lake is strongly associated with the powers of the sky, sometimes conceived as thunder-birds (Catlin 1844, Vol. II:163–166, 169, 206; Lewis 1886; Mooney 1896:968, 1022; Alexander 1967:53). A party of Dakotas confronted Catlin at the Traverse des Sioux and told him not to visit this sacred ground lest he desecrate it (Catlin 1844, Vol II:165–66). In the words of a biographer of the Lakota Hunkapa leader Sitting Bull, “The Holy Land of the Indians is the Coteau du Prairie, the Mountain of the Prairie, the Red Pipe Stone Country” (W. Johnson 1891:213). According to Catlin, the Pipestone Country and the Prairie Coteau were preserved for the use of all Indian nations for purposes of ritual and acquiring the sacred red pipestone (Catlin 1941, Vol. I:31, Vol II:234, 165–166). Ponca, Mandan, Iowa, Yankton, and Lakota people have long held sacred traditions about the Prairie Coteau region (Catlin 1844, Vol II: 234, 170). One Dakota sacred story tells of a great flood when all the people drowned except one young woman that an eagle carried to safety on the Coteau; she gave birth to the eagle’s twins, and from these sprang the Dakota nation (SD Writers Project 1941:45).

The Dakota and Yankton called the Big Sioux River above the falls (Sioux Falls) *Wakpa ipha kshan*, meaning river with a crooked point, and the stretch below the falls *Hahe Wakpa*, noisy river (Bray and Bray 1976:71; Howard 1976:301). The Santee Dakota also called it *Cankusduta*, Splitting Log River (Howard 1976:301; Tarbell 1949:280). The Omaha called it *Xe*, meaning buried (Fletcher and La Flesche 1911:91). Stray Horse Creek was called *Tchan shasha yankedan*, Redwood Creek (Bray and Bray 1976:94).

Lake Madison is recorded as a traditional camping spot for Yankton groups (Howard 1976:300; Parks and Wedel 1985:169). They called it *Ohomni ki iyankapi*, Where They Ran Races, or *Bde Wakan Tain*, Sacred Lake Appearing, because of phosphorescent lights appearing along the margins of the lake (Howard 1976:300). Nearby Herman Lake was called Skunk Lake. This lake was a camping place for groups traveling to and from the pipestone quarries (Howard 1976:301; Hunt 1974:69).

A boulder effigy (39CD1) near Punished Woman's Lake memorialized an event involving a woman, her lover, and a jealous husband (Bray and Bray 1976:102; Hunt 1974:29; Lewis 1889:159–160; Robinson 1904:38; Tarbell 1949:298–300). A Yankton winter count indicates a date of 1770–1790 for the event memorialized by stone effigies at Punished Woman's Butte (Sundstrom 2007b). The effigy has been destroyed by vandals. Round Lake, lying immediately east of Punished Woman's Lake, is in a group of lakes called *Chanoupa*, Two Woods Lake, in Dakota. One of these lakes was said to be poisonous (Riggs 1841:334). Another lake in the Two Woods group was called *Tisaptona*, Five Lodges Lake (Tarbell 1949:285, 292). Lake Poinsett was called *Onkshe Ota*, Many Cactus (Bray and Bray 1976:93).

The Dakota and Yankton groups occupying this region clearly enjoyed an intimate knowledge of their landscape, which is reflected in these place names and traditions.

## **Archaeological Potential**

The Upper Big Sioux region will be important to understanding the Paleoindian and Archaic periods in eastern South Dakota. The region contains a site of apparent pre-Clovis age (39BK100), as well as sites and find spots assigned to later Paleoindian complexes. As more such sites are discovered and explored, patterns may emerge that show how people moved into the area in the centuries following the retreat of the Wisconsin glacier. Early Archaic sites have not yet been identified in the region, but the presence of Paleoindian sites suggests that some Early Archaic sites are likely to have been preserved near natural lakes in this region.

If 39LK7 is correctly identified as a Middle Archaic burial ground, communities must have had long-term or seasonally reused habitation sites in the region. Unfortunately, 39LK7 is now destroyed, as is the Middle Archaic occupation site recorded as 39CD23.

Sites in this region may illuminate the relationship between Woodland, Great Oasis, and Initial Middle Missouri cultural developments. In particular, Woodland occupation sites can be compared with the later Plains Village pattern to indicate how local cultures adopted agriculture and settlement in large villages and the extent to which outside influences played a role in these developments. Sites in the Upper Big Sioux are also expected to contain information that will allow better definition of local complexes, including Cambria, Oneota, and Fox Lake.

## **Management Considerations**

While several Woodland mounds in the region have been formally excavated or dug by amateurs, very little is known of Woodland life-ways apart from mound construction and use. Priority should be given to preserving and investigating Woodland occupation and special activity sites.

## **Sites Listed in the National Register of Historic Places**

None

## Region 24: Northeast Lowlands

### Setting

The Northeast Lowlands Region is situated in the extreme northeastern corner of South Dakota. The region encompasses portions of Marshall, Roberts, Grant, Deuel, Codington, and Brookings counties, along with much of the Sisseton-Wahpeton tribe's Lake Traverse Reservation. Topographically, the area consists of a broad, flat plain formed as the bed of glacial Lake Agassiz and glacial Warren River. With few exceptions, the surface relief of the plain is less than 20 feet (Flint 1955). A narrow, low band of land between Lake Traverse and Big Stone Lake forms a north-south continental divide. Lake Traverse and the northern portion of the region drain northward into the Red River and Hudson Bay, while the southern portion drains southeastward to the Minnesota River and the Mississippi. Glacial till blankets the area. The natural vegetation of the region is tallgrass prairie dominated by big bluestem, switchgrass, indiagrass, and prairie junegrass, with flood plain forest dominated by cottonwood, willow, and elm along the river banks.



*Figure 192. Typical Northeast Lowlands region landscape (ARC photo).*

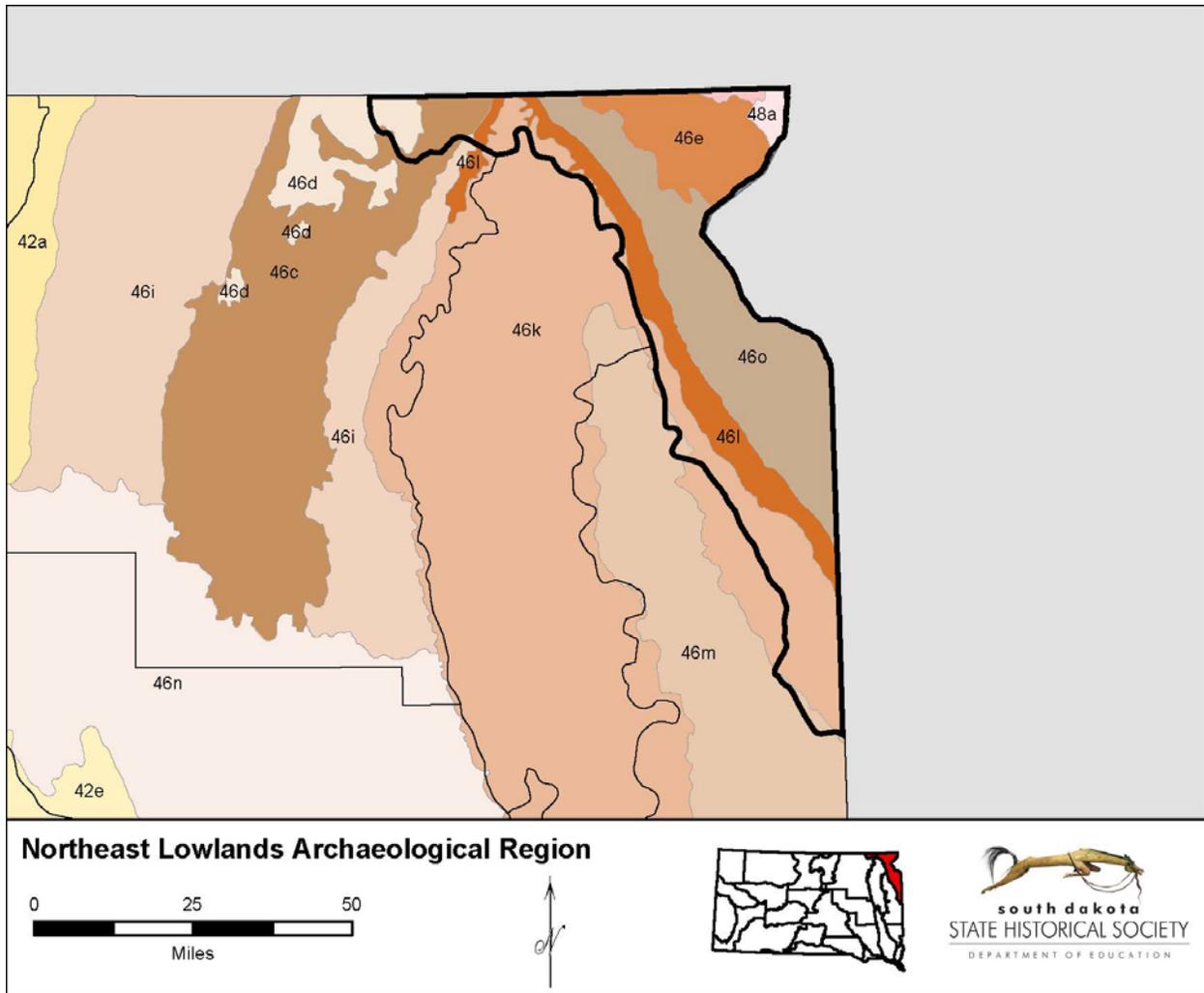


Figure 193. Ecoregions of the Northeast Lowlands archaeological region

46: Northern Glaciated Plains

46c: Glacial Lake Basins, glaciated, very level glacial lake floors; low wetland density.

46d: Glacial Lake Deltas, glaciated; flat sheets of sand and gravel or rolling sand dunes; paucity of stream channels.

46e: Tewaukon Dead Ice Moraine, glaciated lower elevation extension of Prairie Coteau; closely spaced hummocks, high wetland density

46k: Prairie Coteau, glaciated platform of hummocky, rolling terrain raised above surrounding drift plains; stream network lacking; high concentration of large lakes and wetlands.

46l: Prairie Coteau Escarpment, glaciated, dissected topography along face of 300-600 ft. escarpment, incised by high gradient perennial streams.

46o: Minnesota River Prairie, glaciated level to gently rolling plain; moderate wetland density.

48: Lake Agassiz Plain

48a: Glacial Lake Agassiz Basin, extremely flat glacial lake plain; streams and rivers sluggish, meandering, and highly turbid with large sediment loads; ditching and channelization common.

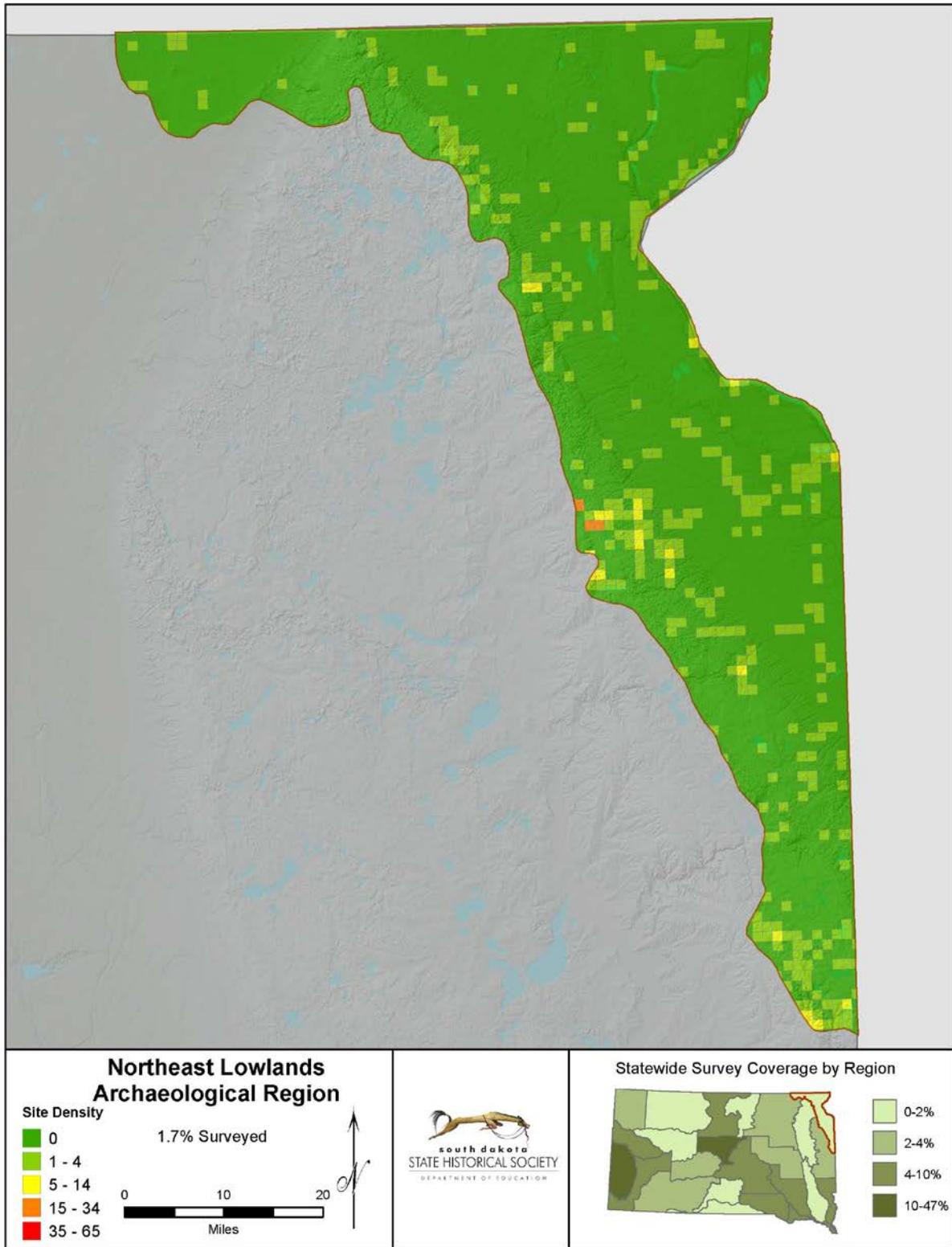


Figure 194. Density of known archaeological sites, Northeast Lowlands archaeological region.

## Previous Archaeological Investigations

T.H. Lewis and W.H. Over (Sigstad and Sigstad 1973) conducted the bulk of the early research in the area, leaving notes of value to later investigations. Mounds and stone alignments in particular caught their attention. Over recorded and excavated several burial mounds in the region. Lyle Nelson recorded some of the more prominent sites as part of a student project (Nelson 1973). In the 1970s, Barbara Lass surveyed portions of the region, recording 18 sites (Lass 1980a, 1980b). These included a village with Plains Village and Woodland components (39DE2), two Woodland occupation sites (39DE11, 39DE12), two Woodland mounds (39DE13, 39DE24), two stone circle sites (39DE21, 39DE26), and several Euroamerican sites (Lass 1980b). Around the same time, John S. Sigstad, in cooperation with the Sisseton tribe, investigated a mound and a rock art site in Roberts County (39RO26 and 39RO31) (Sigstad and Sigstad 1973).

A 1977 survey for a solid waste disposal facility near Big Stone City did not locate any archaeological sites (Hanenberger 1977). Four large-scale survey projects in the 1980s covered parts of the region. A survey for a rural water system located five sites, including two Woodland or Plains Village village sites (39RO13, 39GT5), a Woodland-era occupation (39RO39), and an early village distinct from the better-known Initial Middle Missouri sites (Haug 1981). James K. Haug also revisited many of the sites Over recorded (Haug 1982). He followed test-excavations at the Hartford Beach Village, 39RO5, in 1980–1981 with a multi-year excavation project involving local volunteers (Haug 2004; Haug and Fosha 2008). In 1983, the University of South Dakota surveyed the Lake Traverse-Bois des Sioux area in Roberts County, recording an Oneota village (39RO45) and a historic farmstead (39RO44) (Biggs *et al.* 1984). The next year, University of South Dakota crews surveyed portions of the Upper Minnesota River at the Minnesota-South Dakota border but found no sites within the Northeast Lowlands (Beissel *et al.* 1984). The Archaeological Research Center of the South Dakota State Historical Society surveyed portions of the Prairie Coteau in Roberts and Marshall Counties, recording another 33 archaeological sites in the Northeast Lowlands (Rood and Rood 1984).

Since then, most archaeological work in the region has involved small projects connected with improvements at state parks, bridge and highway repair, planting shelterbelts, small water lines and waste facilities for farms, gravel quarries for road construction, and powerlines. A survey of 12 square miles for a power plant in 2005–2006 located only one new site, an isolated flake (39GT53) (Doperalski 2007). The main research project in the area has been the multi-year excavation of the Hartford Beach Village, 39RO5 (Haug 2004; Haug and Fosha 2008). An earlier volunteer-aided project explored 39DE5, the Winter Site, a large multi-component site on a high hill overlooking Coteau Lake. Excavations by archaeologists James K. Haug and Barbara Lass and teacher Betty Sterner in 1976–1981 showed the site to be an occupation or village dating primarily to the Woodland and Plains Village periods, with some Paleoindian and Archaic material also present (Haug 1982). The site contains material similar to Great Oasis, but like other early Plains Village sites in the region, its ceramics are distinct from those found along the Missouri River in the early village period. Similar ceramics were found at 39DE11, the Megard Site (Lass 1980b). Observed on the surface of the site were animal bone, flakes, fragments of projectile points, shell fragments and a few pottery sherds. Excavation of three test units revealed a deposit of animal bone, fire-cracked rock, and flakes (Lass 1980a).

Several smaller excavation projects have been done to evaluate the potential for sites to contain historically significant material. The Singsass-Bowman Site, 39DE13, is a Late Archaic and Woodland occupation site associated with a mound. In 1984, a group of avocational excavators dug two shallow test units. They found charcoal, bone, chipping debris, stone tools, and pottery near the surface but had to discontinue the project due to bad weather. Archaeologist Barbara Lass surveyed the site area and observed stone tools, pottery, shell, animal bone, flakes, and charcoal. She noted that the mound had been largely destroyed by a road, uncovering some human bone that had been buried within the mound (Lass 1980a).

Excavations at 39RO44, the Karsbreck Site revealed a farmstead marked by artifacts such as glass, metal fragments, ceramic dish fragments, wire, nails, and foundation stones. A rectangular depression and a small mound were found to be part of the historic structures at the farmstead (Biggs *et al.* 1984). At another site, a Woodland or Plains Village burial was accidentally exposed in the sides of a small drainage as fill dirt was being taken from the stream terrace. An emergency excavation recovered a human jaw bone, a flake, several broad trailed grit-tempered sherds, a flake and some mussel shell. The material was repatriated to the Flandreau Sioux Tribe for reburial.

South Dakota Historic Preservation Office personnel, aided by volunteers, conducted excavations at Brown's Trading Post (39RO38) in 1988. The site was an 1840s American Fur Company exchange focused on bison hides and muskrat pelts brought in by Santee and Yankton hunters and trappers. Operated first by Joseph Brown and later by Henry Sibley, the post was an important early contact-era site. The excavations uncovered charred timbers, hand-forged nails, ironstone dish fragments, clay daub, beads and buttons, fragments of glass and iron, and animal bone (Kapler 1988).

## **Historic Contexts**

The Northeast Lowlands Region is part of the Northeastern Periphery cultural subarea of the Great Plains, with patterns of early history distinct from the Middle Missouri cultural subarea of the central Dakotas and the Northwestern Plains pattern seen west of the Missouri (Wedel 1964). These differences are most pronounced for the Woodland and post-Woodland periods. For the last 3000 years of its history, sites in the region relate more closely to archaeological cultures of Minnesota and Iowa than to those of the Middle Missouri.

To date, archaeologists have found little evidence for material dating to the Paleoindian, Early Archaic, and Middle Archaic periods in the Northeast Lowlands. Although limited in scope, discovery of a Paleoindian Alberta projectile point fragment at a nearby site in Minnesota (Lass 1980a, 1980b) and a fluted projectile point recorded as 39DE115 (Williams 2013) suggest the presence of very early sites in the region.

Sites dating to the Late Archaic or Woodland period are much more common in the region. Two sites are listed as Late Archaic and 23 as Woodland. These include mounds, artifact scatters, villages, and other occupation sites. The occupation site listed as Late Archaic yielded radiocarbon dates of 2605 and 3095 BP, suggesting prolonged or repeated use of the locality. Mounds are very common in this region, gradually tapering off in their distribution as one moves west toward the Missouri River. Mounds tend to occur on high points overlooking streams and lakes and only rarely on stream terraces. Woodland mounds that were test-excavated or accidentally disturbed

were usually found to contain human burials. Most of these were contemporaneous with the mounds, but a few contained intrusive burials of Native Americans or Euroamericans from the Protohistoric and Historic periods. While several Woodland mounds were excavated in the early days of Northeast Lowlands archaeology, no village or other occupation sites have been excavated. Thus, as in other parts of the state, archaeologists know how Woodland groups disposed of their dead but not how they conducted their day-to-day lives.

A mound excavated in 1972 in advance of highway construction in Roberts County (39RO26) lay at the eastern edge of the Prairie Coteau (Sigstad and Sigstad 1973). It was 15 meters north to south and 12.6 meters east-west, but less than one meter in height. It contained eight secondary (bundle) burials, all representing adults, associated with a layer of cobbles 20–40 cm below surface. Some charcoal and wood fragments were found near the burials, with one charcoal sample dated to 1120 CE, late in the Woodland period. The few artifacts found in and near the burials included part of a stone knife, two projectile points, and five cord-wrapped paddle impressed pottery sherds. The mound had been used later to inter a horse, a dog, and some metal items such as tin cans. This mound was typical in containing few grave goods and multiple burials.

W.H. Over excavated several mound sites in the Northeast Lowlands. The Dougherty Mounds (39RO1) were eight conical mounds, of which Over excavated five. In Mound Two, he found 12 burials, including some from the historic period. Most of the older burials were primary (time-of-death) burials. These were laid out in an extended position with the heads to the south. Chipped stone artifacts, shell beads, and red ocher occurred with them. Two secondary (bundle) burials, one adult and one child, included native copper beads. The other four mounds that Over excavated contained one or two burials each (Sigstad and Sigstad 1973). The single excavated mound in the Grinder mound group (39RO2) contained two burials. One was a cremation. The Buchanan Mounds (39RO3) contained five mounds. The excavated mound had nine secondary (bundle) burials, a stone sphere, and some fragments of shell. A single mound in the Hartford Beach mound group (39RO4) contained 14 bundle burials, with associated shell fragments, part of a clay tobacco pipe, red ocher, copper ornaments, a potsherd, a scapula hoe, and chipped stone artifacts. The mound also contained the much more recent remains of a shod horse. A mound at Hiawatha Beach (39RO6) had a single primary burial in flexed position accompanied by sherds and stone tools. This mound had been used historically for several casket burials. Hunters Mound (39RO7) had three bundle burials with only some fragments of wood and charcoal in association. The Medbury Mounds (39RO11) consisted of four mounds, of which George Schotter excavated one. It contained a single burial with numerous shell beads. The Kallstrom Mound (39RO301) contained eight primary burials in flexed position and two secondary burials. These represented adults and children of both sexes. With them were a fragment of birchbark, pieces of bison bone, shell beads, a pottery sherd and a projectile point (Sigstad and Sigstad 1973).

The Northeast Lowlands Region is especially rich in sites dating to the period of transition between the Late Woodland and initial Plains Village periods. Sites with Woodland and Plains Village components include 39DE2 and 39DE12. Oneota ceramics occurred alongside Woodland ceramics at 39DE2 and 39GT22; however, these sites have not been excavated. A possible Oneota village was recorded as 39RO45; this, too, awaits further study. Sites representing the intermediate Great Oasis cultural pattern include 39RO42. It contained ceramics similar, but not identical to, Great Oasis material from the Missouri River. Other early Plains Village sites are 39GT5 and Hartford Beach Village (39RO5).

Hartford Beach Village (39RO5) is a small, fortified village dating between 1100 and 1300 CE (Haug 1982, 1983c, 2004; Haug and Fosha 2008). Located on a bluff above Big Stone Lake, it is the only fortified village in the region. The village is surrounded on three sides by a ditch with post-holes indicating a single-bastioned palisade set inside the ditch; the steep bluff slope forms the east side of this fortification system. The site contained pottery of the Plains Village Cambria type with broad-trailed scroll decoration, as well as some Late Woodland Lake Benton type. Projectile points, too, included Late Woodland and Plains Village types. No definite house remains were found, but a set of four braced post-molds may be from house supports. Features such as hearths and cache pits are typical of Plains Village settlements. The site had both bell-shaped and bag-shaped pits. Stone tools were made of local cherts and Knife River flint. Fill in cache pits included bison and other animal bone, clam shells, and corn kernels. Besides chipped stone tools and debris, artifacts included black stone and clay tobacco pipe fragments, a bison scapula hoe, two bone awls, and a bone fleshing tool. In its age, layout, and tool assemblage, the Hartford Beach site is typical of other Late Woodland sites in the Northeastern Plains; however, its ceramic assemblage and fortification seem to be localized developments.

Several very large occupation or village sites in the region date to the Late Woodland or Plains Village period, based on projectile points found on the surface; however, these have not been test excavated to more accurately define their ages and dimensions. These include 39GT4, 39GT5, 39RO13 and 39RO39, (Haug 1981).

Interestingly, the Northeast Lowlands Region contains few Plains Village sites that fit into the standard classification developed for the Missouri River sites. Although early studies treated the village cultures of the Northeast Lowlands as part of the Middle Missouri tradition, referring to the region as part of the “Northeastern Periphery” of the tradition (cf. Wedel 1961), more recent research indicates that this area is part of a Northeastern Plains Village Tradition developing in place with influences from the Eastern Woodlands (Lass 1980a, 1908b; Schneider 2002; Toom 2004; Michlovic and Toom 2008), and hypothesized to represent the ancestors of the historic Hidatsa (Toom 2004). It is likely that most of the 12 stone circle sites recorded in the region correspond to the Plains Village period in age, but villages dating to the latter portion of this period have not been identified so far in the region. In contrast to some Middle Missouri villages, Northeastern Plains Village settlements were small villages. They may have been less reliant on maize farming and more reliant on hunting and foraging than settlements on the Missouri; however, this is not clear from the current data (Schneider 2002). Village sites in the Northeastern Plains contain clear evidence for maize, beans, squash, and sunflower production from 1200 CE up to the time of European contact (Schneider 2002). Sites contain distinctive pottery for domestic use and as grave goods, as well as varying amounts of catlinite artifacts (Toom 2004).

The accidental exposure of a burial in a terrace cutbank hints at interment of the dead with small amounts of shell and pottery during the Plains Village period and suggests the use of the higher terraces for burial sites (Haug 1994).

During the Protohistoric period and fur trade era, the area between Big Stone Lake and Lake Traverse, referred to as Traverse Gap, was an important trading center. Fur trade posts sprang up along this old trail. Hudson Bay Company trader Robert Dickson established a post among the Yanktons and Santee Dakotas at Lake Traverse sometime around 1800. This was followed by several other fur posts, most of which were little more than small cabins. Recorded archaeological

sites from this period include trading posts (39RO14, 39RO21, 39RO24, 39RO34, 39RO38), burials (39RO27, 39RO37), and Native American habitation sites with imported trade goods (39DE2, 39ML42). Several exploratory expeditions entered the area during this period: the Steven Long party in 1823, geologist George W. Featherstonhaugh in 1835, and the Joseph N. Nicolet party in 1838–39.

Under the 1851 Treaty of Traverse des Sioux, the Sisseton and Wahpeton communities were assigned a reservation in northeastern South Dakota, with reservations for the various other Santee Dakota communities established in Minnesota. This treaty opened most of western Minnesota and portions of eastern South Dakota to non-Indian settlement. The agency and reserved lands assigned to the Sisseton and Wahpeton groups lay primarily within the Prairie Coteau and Northeast Lowlands Archaeological Region. During the six-week Dakota Conflict of 1862, hostilities broke out between Santee Dakotas and white settlers in the Minnesota Valley. The eastern Santee bands were frustrated by unfair trade practices, broken treaties, and near starvation. Although the Santees on the Dakota Territory side of the border, including the Sisseton and Wahpeton, did not join in attacks on white settlers, fear of attack and retribution panicked whites and Indians alike. Dakota and Euroamerican refugees streamed into the area. Fort Wadsworth (later called Fort Sisseton) was hastily erected to prevent further outbreaks. (The fort lies to the west of the Northeast Lowlands archaeological region in the Prairie Coteau region.) White settlement soon resumed, and the area today remains predominantly farm land. Settlement-era sites include remains of the Fort Sisseton trail, a stage stop, a roadway, dugouts and sod houses, farmsteads, Dakota Indian cabins, a silver mine, a flour mill, a post office, a church and mission school, railroad tracks and stations, and small cemeteries and individual graves.

## **Sites by Period**

*Paleoindian:* None

*Early Archaic:* None

*Middle Archaic:* None

*Late Archaic:* 39DE13, 39DE56, 39GT52

*Late Prehistoric:* 39GT46

*Woodland:* 39DE2, 39DE11, 39DE12, 39DE13, 39DE24, 39GT1, 39GT22, 39GT35, 39GT48, 39ML1, 39ML41, 39ML46, 39ML48, 39RO1, 39RO2, 39RO3, 39RO4, 39RO6, 39RO26, 39RO39, 39RO70, 39RO73, 39RO76, 39RO79, 39RO80, 39RO81

*Woodland or Plains Village:* 39GT5

*Oneota:* 39GT22, 39RO45

*Late Prehistoric or Plains Village:* 39GT5, 39GT36, 39GT37, 39RO6, 39RO10, 39RO13, 39RO39

*Plains Village:* 39DE2, 39DE12, 39GT6, 39RO5, 39RO42 (Great Oasis), 39RO86

*Protohistoric:* 39DE2?, 39DE21, 39ML42, 39RO1, 39RO4, 39RO6, 39RO10, 39RO26, 39RO38, 39RO73, 39RO74

*Historic:* 39DE16 (foundation, depression), 39DE22 (foundation), 39DE25 (post office), 39DE48 (artifact scatter), 39DE55 (historic), 39DE82 (artifact scatter), 39GT4 (artifact scatter), 39GT7 (cabin), 39GT8 (mine), 39GT9 (depression), 39GT13 (depression), 39GT15 (foundation), 39GT16 (flour mill), 39GT24 (artifact scatter), 39GT48 (burial), 39GT2007 (railroad), 39GT2042 (railroad), 39ML43 (stage stop), 39ML47 (cabin), 39ML49 (mission church and cemetery), 39ML52 (depression), 39RO14 (trading post), 39RO24 (trading post), 39RO27 (burial), 39RO34 (trading post), 39RO37 (burial), 39RO47 (foundation), 39RO56 (foundation), 39RO63 (trail), 39RO94 (foundation), 39RO95 (foundation), 39RO116 (depression), 39RO118 (alignment), 39RO119 (foundation), 39RO2007 (railroad), 39RO2154 (railroad)

*Historic Farmsteads:* 39GT14, 39GT17, 39GT18, 39GT32, 39GT34, 39GT49, 39GT52, 39ML51, 39ML79, 39RO28, 39RO44, 39RO46, 39RO50, 39RO53, 39RO59, 39RO62, 39RO72, 39RO87, 39RO88, 39RO103, 39RO104, 39RO107, 39RO117

## **Prehistoric and Historic Themes**

*Sacred Sites, Traditional-Use Sites, and Burials.* Although the Northeast Lowlands is the current and historic home of Yankton and Santee Dakota groups, Cheyenne oral tradition recalls life in a fortified village in this area (Hyde 1968:8). This would be considered a spiritually significant place as the home of Cheyenne ancestors. The name for Big Stone Lake is a translation of the Dakota/Nakota term *inyantankawan wakpa*; it was remembered as the site of a battle between Yankton Dakota and Ojibwa (Howard 1972:301). Another battle site was northeast of Red Iron Lake. A group of Dakota women picking berries were attacked by Ojibwa warriors, and only one of the women escaped (Ehrensperger 1941:47). Lake Traverse was known as Otter Tail Lake, a locale that figures in a Dakota sacred story, along with Big Coulee, Hoop Ravine, and Turkey Buzzard Knoll (Oneroad and Skinner 2003:155–156). The country west of Big Stone Lake was called *tatanka okadakiciye*, the buffalo republic, because bison were plentiful there (Tarbell 1949:283), a phenomenon also fondly recalled by the Cheyenne (Hyde 1968:8). Dakota and Nakota communities held the continental divide between Big Stone Lake and Lake Traverse in special esteem. An altar of two buffalo skulls marked a spot on the Traverse Gap trail at which one should stop and pray (Gilman *et al.* 1979:46). This area was also strongly associated with the great sky powers represented by the thunderbirds; several rock art boulders in the area were thought to contain impressions of the supernatural bird's talons made during a great flood in mythological time (Lewis 1886; Mooney 1896:968, 1022). The area is the setting of two other Dakota origin stories (Alanson 24–28; Oneroad and Skinner 2003:175–176). Several rock shrines, glacial boulders painted red, were found near Yellow Bank River, known to the Dakota as *Hra Wakan*, sacred peak river (Gilman *et al.* 1979).

*Mound sites:* 39DE13, 39DE24, 39GT1, 39GT35, 39GT48, 39ML1, 39ML41, 39ML46, 39ML48, 39RO1, 39RO2, 39RO3, 39RO4 (39RO13, 39RO29), 39RO6, 39RO7, 39RO8, 39RO9, 39RO10, 39RO11, 39RO12, 39RO26, 39RO52, 39RO54, 39RO70, 39RO73, 39RO76, 39RO79, 39RO80, 39RO81, 39RO301.

**Woodland-Plains Village Transition and Northeastern Plains Village Tradition.** As the only portion of South Dakota lying within the Northeastern Plains region, as currently defined (cf. Toom 2004), the Northeast Lowlands is key to understanding the influence of Cambria and other Late Woodland cultures on areas to the northwest in eastern North Dakota and extending westward to the Knife River region. The Northeastern Plains Village tradition is hypothesized to occupy both a region and a time span intermediate between the Woodland Cambria culture in the east and the historic Hidatsa villages of the Knife River region in the west. Many sites in the Northeast Lowlands appear to be villages with either dual Woodland and Plains Village components or with single components exhibiting characteristics of a transition between the two periods. The presence of burned earth and large pieces of charcoal at 39DE13 suggest the possibility of house structures there; however, the site has not been excavated (Lass 1980b). Related sites: 39DE2, 39DE12, 39GT4, 39GT5, 39GT22, 39RO5, 39RO13, 39RO39, 39RO42, 39RO45

*Woodland or Plains Village:* 39GT5

*Oneota:* 39DE2?, 39GT22, 39RO45

*Late Prehistoric or Plains Village:* 39GT5, 39GT36, 39GT37, 39RO6, 39RO10, 39RO13, 39RO39

*Plains Village:* 39DE2, 39GT6, 39RO5, 39RO42 (Great Oasis), 39RO86

**Fur Trade.** Archaeological remains in this region are important to understanding the history of the fur trade and early relations between native populations and non-Indians entering the area from Canada, France, the British Isles, or the United States. Posts were established in the region before and after the War of 1812, thus spanning the years of intense competition between British, French, and American interests. Early fur traders, such as Robert Dickson, married into local native communities, beginning the long history of mixed European-Dakota families. The fur posts in this area also witnessed the shift in principal trade from beaver pelts to bison hides. The rise of the hide trade resulted in shifts in social and economic organization of native communities. Related sites: 39RO14, 39RO21, 39RO24, 39RO27, 39RO34, 39RO37, 39RO38.

**Mounds.** The Northeast Lowlands Region contains a large number of human-made mounds. These sites date to the Woodland period and often contain one or more human burials. Many mound sites contain two or more mounds. Excavated or tested mound sites include: 39DE13, 39GT35, 39RO2, 39RO3, 39RO4, 39RO6, 39RO7, 39RO10, and 39RO11. Some other sites have been destroyed or damaged by agricultural activities; however, many intact mounds remain in the region.

## **Archaeological Potential**

The Northeast Lowlands may contain sites spanning the Paleoindian period through recent times. So far, evidence for sites pre-dating the Woodland period is very limited; however, this may be a consequence of the lack of geomorphological studies that can identify areas with deeply buried ancient soils and surfaces. The smaller lake shores and stream courses, in particular, may contain well preserved older sediments. The region has several sites dating to the Woodland-Plains Village transition. This time—when foraging and casual horticulture gave way to more intense farming—

is poorly understood at present. Archaeologists also have yet to define the relationship between the village sites in the Northeast Lowlands and those on the Missouri River and between pre-contact and historically known groups. Village sites in the region certainly can provide much information of relevance to these areas of northern Great Plains history. Other topics for which the region holds great potential are the impact of the fur trade on local populations, the migration of Siouan-speaking groups and the Cheyenne onto the western Great Plains, and the replacement of local cultigens with maize during the Plains Village period. Transition to reservation life is represented at several thus far unexplored sites in the region. While many burial mounds have been damaged or destroyed as fields were plowed, other sites in the area are well preserved.

## **Management Considerations**

A lack of data is the main problem facing cultural resource managers in northeastern South Dakota. Apart from mounds, few sites have been excavated and relatively little of the region has been surveyed. Until archaeologists have the opportunity to conduct research on landscape history and site distribution, it will be difficult to identify places with high potential for archaeological sites. Because this region includes the Sisseton-Wahpeton Reservation, as well as many Yankton and Dakota sacred sites, Yankton and Santee Dakota people should be involved as much as possible in studies of this area and their views considered in any management actions or policies affecting this homeland. The early Plains Village sites in the region may represent the ancestors of today's Hidatsa and Crow people; thus, they should be invited to consultations on this area, as well. Looting has damaged several sites in the area. Although no recent instances have been reported, cultural resource managers should be alert to this potential problem and forceful in discouraging it. A bigger problem has been the ongoing loss of sites to cultivation and other agricultural activities.

## **Sites Listed in the National Register of Historic Places**

39RO21 (Robar Trading Post), 39RO71 (rock art).

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