CHAPTER THREE

Prehistoric and Protohistoric Overview of the White River Badlands

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White River Badlands as an Archeological Region

The South Dakota State Plan for Archaeological Resources identifies 24 archeological regions within the state, 10 of which occur on the west side of the Missouri River.[1] The White River Badlands archeological region includes all areas drained by the White River. As defined by Winham and Hannus, the eastern portion of the region also includes areas drained by the Bad and Little White rivers, and the northwest part of the region is drained by the South Fork Cheyenne River. The White River Badlands archeological region, which includes portions of Shannon, Pennington, Jackson, Bennett, Todd, and Mellette counties, is generally considered a sub-region of the Northern Plains. Although several cultural histories of the Northern Plains have been written, few have been prepared from the perspective of the Badlands. Rather, the White River Badlands are considered tangential to events occurring on the High Plains to the north, south, and west, or the Middle Missouri region to the east. By necessity, the prehistoric overview presented below represents a synthesis of previous studies within the White River Badlands archeological region, the Northern Plains region, and to a lesser extent the Middle Missouri region. The information presented in this chapter is primarily based on Hannus et al., but it also draws heavily from books and reports prepared by others.[2] The purpose of the overview is to present a synthesis of the cultural context, time periods, site types, and cultural groups that occupied the study area during the last 12,000 years.

As noted by Hannus et al., despite years of survey and excavation, archeologists have yet to define any "cultures," "phases," or "complexes" for the White River Badlands.[3] As such, habitation of the Badlands is considered to be transitory with groups from a number of geographic areas occupying the region on a seasonal basis. Hannus et al. suggest that groups from the Northwestern Plains, Black Hills, Central Plains, Sandhills, and Middle Missouri occupied the Badlands region at different times and places.[4]

The remainder of the chapter is divided into two major headings: the first presents a summary discussion of previous archeological investigations in the White River Badlands region, and the second presents the prehistoric cultural context of the White River Badlands. The later subsection is organized according to recognized time periods as outlined in Hannus et al.[5]

Previous Investigations in the White River Badlands

This section of the chapter focuses on previous archeological investigations in the White River Badlands region in general and within Badlands National Park in particular. For convenience, this section is divided between archeological studies conducted prior to 1978 (i.e., Badlands National Monument and before) and archeological studies conducted after 1978 when the monument was designated as a National Park. Regardless of when

the investigations occurred, the vast majority of studies have been conducted in order for federal or state agencies to be in compliance with federal regulations that require archeological resources be considered in the planning stages of a federal undertaking. Compliance-related archeological studies, often referred to as Cultural Resource Management (CRM), are generally restricted to the construction footprint of a particular undertaking, rather than the broader, long-term research, design-oriented approach that typifies many archeological endeavors by university professors or museums.

Summary of Archeological Investigations prior to 1978

This section of the report is derived from the following sources: (1) summaries of previous archeological investigations, and (2) extensive review of the files and reports at the South Dakota Archaeological Research Center (SARC) at the Office of the State Archeologist (OSA), in Rapid City.[6] During the second half of the nineteenth century and the first half of the twentieth century, interest in archeological discoveries in the White River Badlands area took a back seat to highly publicized paleontological and geological expeditions. For example, Euro-Americans knew that the Lakota and other Plains Indian tribes had occupied the region on a seasonal basis for a hundred or more years, but very few people considered the nature and duration of prehistoric occupation of the region. One of the first accounts of archeological remains in the Badlands region occurred in 1905 when Shelton reported fire hearths, ceramics, projectile points, lithic debris, burned and butchered bone, and charcoal in the White River Badlands**.**[7] The Smithsonian Institution conducted a preliminary survey of the proposed Rockyford Dam and Reservoir as part of the Missouri River Basin studies in 1949. The reconnaissance survey identified three prehistoric sites in the vicinity of the proposed Rockyford Reservoir.[8]

The presence of archeological sites within Badlands National Monument, particularly in the North Unit of the Park, was first brought to the attention of the National Park Service (NPS) by Morris Skinner in 1951.[9] While collecting paleontological remains, Skinner observed archeological materials at several localities as well as a possible bison jump site. In 1953, Paul Beaubien of the NPS conducted an archeological survey of the sites reported by Skinner and an assessment of archeological resources within the Monument**.**[10] Beaubien recorded 42 sites, including two important sites, the Johnny site (39JK4) and the Pinnacles site (39PN9). Beaubien reported no kill sites, but he did report one Paleo-Indian site, Big Foot's Camp, and three large multi-component sites. Although many of the sites reported by Beaubien consisted of one or two flake sites, he did report the presence of prehistoric ceramics at 11 sites.[11] Among the materials recorded by Beaubien were a variety of projectile points, ceramics, lithic tools, charcoal, and bone.

In 1958 prior to development activities, the NPS enlisted Dee Taylor to conduct limited excavation at the Johnny site (39JK4) and the Pinnacles site (39PN9). Taylor was able to define a tentative chronology that followed the established sequence for the Central and Northern Plains.[12] Although Taylor found little evidence that the Badlands were occupied during the Paleo-Indian and Archaic periods, he was able to document materials dating to the Late Plains Archaic (Pelican Lake points), the Plains Woodland tradition (Besant points and ceramics), and the Plains Village complex (Anderson wares and Stanley

Braced Rim wares).[13] No significant additional archeological studies were conducted within Badlands National Monument until 1970.

Between 1970 and 1977, several preconstruction surveys of very limited scope were conducted for the NPS within the North and South Units of the Park. Some of the more significant surveys completed in the North Unit during this time included the Cedar Pass Butte area,[14] survey in the Cedar Pass area by Kay and Mundell,[15] survey in the northeast and Pinnacles entrances by Kay and Mundell,[16] and survey of the Doors and Windows parking area.[17] Britt reported the Millard Ridge site (39JK2), which contained pottery and chipped stone artifacts.[18] The survey of the Cedar Pass area resulted in the identification of an exposed charcoal lens about 18 inches below ground surface near the Cedar Pass Lodge, but no cultural material was observed.[19] Survey of kiosk areas near the Northeast and Pinnacles entrances resulted in the identification of a small lithic scatter (39JK52).[20] During a survey of Buffalo Gap National Grassland, Kay recorded 17 archeological sites in Pennington County near the southern boundary of the North Unit.[21] In addition to the above studies, Anderson visited the park in 1973 in order to assess the condition of several archeological sites.[22] She assessed previously recorded sites (39JK2, 39JK3, 39JK4, 39PN9, 39PN23, and 39PN837), made limited collections, and photo-documented the sites.

The largest and most productive survey (in terms of sites recorded) was a 1,280 acre survey in 1976 of the proposed White River Visitor's Center in the South Unit of the Park. The survey, directed by Carl Falk of the NPS, recorded 27 archeological sites, including 23 prehistoric sites and 4 historic sites.[23] Small lithic scatters of unknown age characterize a majority of the sites recorded during the survey, but Falk et al. reported prehistoric ceramics from two sites. Much of the survey area was covered by heavy grasses resulting in low surface visibility which undoubtedly affected the survey results. Despite these obstacles, the data obtained from the survey corroborated the chronological findings presented by Taylor in 1961.[24] Table 1 presents a summary of selected archeological studies in or near Badlands National Park prior to 1977, and a discussion of the more important studies and findings is presented below.

Table 1. Summary of Pre-1978 Archeological Surveys In or Adjacent to Badlands National Monument

References	Location	Acreage	Sites	Comments
Shelton 1905		Unknown		
Wheeler 1949		Unknown		
Beaubien 1953	Rapid survey of entire Park as it existed in 1953	Unknown	42 sites	North Unit
Taylor 1961	Vicinity of 39JK4 and 39PN9	Not applicable	39JK4 and 39PN9	Site evaluations/ excavations; North Unit
Britt 1970	Millard Ridge/Cedar Pass	0.5 acre	39JK2	Site evaluation survey; North Unit

Anderson 1973	Trip Report	Not applicable	39JK2, 39JK3, 39JK4, 39PN9, 39PN23, and 39PN837	Site visits and survey in vicinity of sites only; North Unit
Calabrese 1974a, 1974b	North Unit: Wall & Cottonwood SW Quads; Northeast and Pinnacles Entrance	38 acres at Pinnacles; 28 acres at Northeast Entrance	39JK52 at Northeast Entrance area	Heavy grass cover, poor visibility. To be disturbed by construction; North Unit
Kay 1974		Unknown		
Nickel 1977	North Unit: Cottonwood SW Quad; Doors and Windows Parking	ca. 50 acres		Excellent visibility due to rain; North Unit
Total Surveys = 10				

Summary of Archeological Investigations after 1978

Over the last 27 years, hundreds of compliance-related CRM studies, both surveys and excavations, have been conducted by or for the NPS and other federal and state agencies for all federal undertakings within and adjacent to the White River Badlands. The first CRM survey within the newly named Badlands National Park was the Sage Creek Rim Road survey conducted in 1978.[25] The purpose of the survey was to inventory and evaluate archeological sites within the right-of-way of proposed roadway improvements. The survey resulted in the recordation of 15 new prehistoric sites (39PN321, 39PN322, and 39PN327-39PN339) and two isolated prehistoric finds. Two sites previously recorded by Beaubien were re-recorded. Ten of the 15 sites were recommended potentially eligible for the National Register, pending further evaluation. In 1979, Bruce Jones of the NPS-Midwest Archeological Center (MWAC) in Lincoln, Nebraska, conducted a re-examination and re-identification of several sites located along the Sage Creek Rim Road.[26]

Since the Lincoln survey in 1978, many of the archeological investigations in or near Badlands National Park have been conducted by the NPS-MWAC or the NPS Denver Service Center (DSC), South Dakota State University, Augustana College, and SARC of the OSA in Rapid City. However, privately-owned CRM companies have also performed numerous surveys on behalf of federal and state agencies. One of the earliest NPS surveys in the South Unit of the Park was conducted on the east end of Cuny Table for a proposed gravel pit operation.[27] Anderson reported two sites (39SH34 and 39SH35) consisting of a series of stone circles, or "tipi rings," on narrow ridges above the Fog Creek drainage. Anderson suggested the tipi rings may be associated with a Siouan occupation.[28] In 1981, Anderson surveyed a proposed bridge alignment for the White River Development Area in the vicinity of two prehistoric sites (39SH14 and 39SH27) that had been previously recorded by Falk in 1976.[29] Also in 1981, Anderson and Bob Alex recorded a burned rock feature (39SH36) eroding from a terrace in the Fog Creek area.[30]

Beginning in 1980 and continuing to the present, Dr. L. Adrien Hannus and his staff (first at South Dakota State University (SDSU) and currently with Augustana College, Sioux Falls) have conducted the most comprehensive and most productive surveys in the Park. In 1980, Hannus and his colleagues at SDSU began a multi-year study known as the White River Badlands Regional Research Project, which culminated in the production of a number of reports. Although most of the work associated with this long-term project occurred on lands adjacent to the South Unit, some work was conducted within Park boundaries along Fog Creek and its many unnamed tributaries. The project included surveys, limited subsurface testing at selected sites, and detailed excavations at the Lange/Ferguson site. The Lange/Ferguson site produced the remains of two butchered mammoths in association with Clovis points dating to 11,800 BP; thus providing evidence of the earliest occupation of the area.[31]

Another important aspect of the project was the discovery and documentation of the West Horse Creek Quarry, which consisted of a two square mile area containing at least 13

artifact concentrations ranging from primary quarry detritus to lithic scatters and workshop debris reflective of various stages of core and biface reduction.[32] The West Horse Creek survey also identified the source (outcrop) of a brown chalcedony flake, similar in appearance to Knife River Flint, found in association with a butchered mammoth from the Lange/Ferguson site as well as a purple chert also used in tool manufacture. The survey of the Fog Creek area was equally productive as it resulted in the identification of 17 previously unrecorded sites within the Park boundaries.[33] Other aspects of the survey project focused on selected portions of the White River Badlands region in Custer, Pennington, Shannon, Jackson, and Bennett counties. One site of particular importance (39SH80) located in the South Unit of the Park produced a late Paleo-Indian projectile point, a Plains Woodland Besant point, and Middle Missouri (?) collared ceramics.[34]

During the 1980s and 1990s, numerous small construction or development projects occurred in the North Unit. Mueller monitored trenching operations near Cedar Pass Lodge, surveyed areas around proposed stock ponds, and surveyed the proposed location of buffalo fence.[35] The later survey produced two sites (39PN538 and 39PN539). DeVore recorded three small prehistoric sites (39JK90-92) and four isolated finds during the survey of a 160-acre land exchange.[36] He also surveyed two sewage lagoons, two 20-acre landfills, and evaluated sites near Cedar Pass.[37] Johnson conducted a number of surveys for small construction or development projects in 1987.[38] Although no new archeological sites were recorded during these surveys, she did confirm the presence of a historic site (39SH130) on top of Sheep Mountain Table overlooking School of Mines Canyon.[39] Johnson also conducted limited evaluation and mitigation of sites 39JK4 (Cedar Pass), 39JK3, and 39JK2.[40] Johnson reports that the Cedar Pass site represents an Initial Middle Missouri camp, 39JK3 is a lithic scatter, and 39JK2 is a short-term camp that produced undiagnostic ceramics.[41] The work at the Johnny Site (39JK4) resulted in two additional reports by Anderson regarding the ceramic component, which she interpreted to be Initial Middle Missouri.[42]

One of the most significant studies in the North Unit occurred in 1991 and 1993 when personnel from NPS-MWAC surveyed the Badlands Loop Road between the Northeast Entrance and the Pinnacles Entrance. The survey corridor varied between 25 m to 400 m in width and was nearly 50 km, or 31 miles, in length. The survey identified 16 new sites (ten sites in Jackson County and six sites in Pennington County), and limited test excavations were conducted at three previously recorded sites (39JK4, 39PN9 and 39PN1135).[43] In 1993, Jones also surveyed an 80-acre block of land at the Pinnacles Ranger Station and a power-line corridor survey from the Northeast Entrance to the Park boundary.[44] NPS-MWAC archeologists have conducted a number of other small surveys primarily in the North Unit, including, but not limited to, surveys of proposed sewage lagoons and sewer lines, a fire cache, VIP Trailer Pad, a water tower site, and additional work in the Fog Creek drainage.[45] The 1999 survey of the proposed Fire Cache and VIP Trailer Pad resulted in the recordation of one historic site (39JK237), an early twentieth century restaurant and bar.[46]

One of the earliest large-scale surveys in the South Unit of Badlands National Park was a 160-acre survey in the Fog Creek area conducted in 1981 by Hannus, et al.[47] The survey resulted in the identification of 17 sites. The Fog Creek drainage was the focus of the several additional large-scale investigations in 1985, 1988, and 1990. In 1985, Chomko investigated two alternatives for the proposed visitor centers in the Fog Creek vicinity.[48] He reported seven sites in Alternative A and five sites in Alternative B. In 1988, two para-professional training sessions were held in the Fog Creek area. The training sessions focused on exposed sites that were eroding rapidly into Fog Creek. Four new sites were recorded and several previously recorded sites were monitored to evaluate integrity, significance, and rates of erosion.[49] The second training session also sought to resolve discrepancies in site numbers assigned during the earlier surveys. That is, rapid erosion in the Fog Creek drainage may have contributed to problems in relocating sites and the possible duplication of site numbers.[50] Johnson summarizes the results of these various studies as well as various artifact and data analyses and radiocarbon dates obtained from the Fog Creek sites.[51] In 1992 and 1993, the White River Visitor's Center was again the focus of archeological survey. The 1992 survey focused on proposed impact areas for the removal of four underground fuel tanks, installation of one aboveground fuel tank, and the relocation of one aboveground propane tank and associated fuel lines.[52] Two sites previously recorded by Falk et al. in 1978 were noted but lacked integrity and were recommended not eligible to the National Register. No sites were recorded for the expansion of the parking lot at the Visitor's Center.[53] Moreover, it was determined that one previously recorded site (39SH16) had been destroyed during the initial construction of the parking lot.[54]

In addition to the aforementioned construction and development projects within Badlands National Park, numerous highway and highway-related surveys were conducted in the vicinity of the Park between 1982 and the present. Excluding the Badlands Loop Road and Sage Creek Rim Road (both in the North Unit), four highways provide access to the Park. State Highway 44, which runs east-west between Interior and Scenic, more or less divides the North Unit from the South Unit. The Bureau of Indian Affairs (BIA) maintains three highways (BIA 27, 2, and 41) that provide access to the South Unit. BIA 27 runs north-south between Scenic and Sharps Corner; BIA 2, which connects BIA 27 and 41, runs east-west and crosses Cuny Table; and BIA 41 runs north-south along the western boundary of the South Unit. The first major highway survey in the area was conducted in 1982 along Highway 44 between Scenic and Interior.[55] The survey resulted in the identification of 44 prehistoric sites including a stratified, multi-component site containing an exposed fire hearth and an associated McKean projectile point. The survey also identified sites associated with Initial Middle Missouri and Extended Coalescent variants.[56] BIA Route 27 (and adjacent lands) had been the focus of several highway studies in the 1980s and 1990s.[57] Church surveyed proposed alignments from Scenic to Rockyford, and Buechler surveyed the proposed alignments between Rockyford and Sharps Corner.[58] Messerli and Fosha surveyed proposed gravel pit areas as well as the proposed South Unit Ranger Station and Visitor's Center.[59] Collectively these surveys resulted in the recordation of 29 prehistoric sites in Shannon County in the vicinity of Badlands National Park.

Other types of linear archeological surveys (e.g., water pipeline surveys and overhead transmission line surveys) have been common in or near the vicinity of the Park, especially during the 1980s and 1990s. Surveys associated with the Oglala Sioux Rural Water Supply System for the Pine Ridge Indian Reservation represent some of the more extensive surveys undertaken in the region.[60] Other CRM-related surveys in the region include, but are not limited to, overhead transmission line surveys,[61] land exchange surveys for Buffalo Gap National Grassland and/or Badlands National Park,[62] four surveys associated with Environmental Engineering/Cost Analysis (EE/CA) studies for removal of unexploded ordnance (UXO) at Badlands Bombing Range,[63] and a survey of 40 locations associated with the reintroduction of black-footed ferrets in the North Unit.[64] Although these surveys have reported a number of prehistoric and historic archeological sites, the majority of sites consist of small lithic scatters with few, if any, diagnostic points or formal tools. Historic archeological sites primarily consist of artifact scatters and/or former buildings associated with early farmsteads and ranching activities.

In 1997, Augustana College of Sioux Falls, South Dakota, entered into a cooperative agreement with the NPS-MWAC to conduct a multi-year archeological inventory of the Park. The agreement outlined various research topics and three seasons of fieldwork. The research topics and field investigations considered the results of geoarcheological investigations conducted by David Kuehn, potential development areas, and visitor disturbance.[65] Geoarcheological information provided by David Kuehn (NPS-MWAC consulting geoarcheologist) identified four major land surfaces within the Park: Upper Prairie Surface and Badlands Wall, Pleistocene Cheyenne River Terraces, early Pleistocene/late Tertiary Surfaces, and Lower Prairie Surface/Sage Creek Basin.[66] The latter geomorphic feature was subdivided in modern floodplains, Holocene terraces, and Holocene alluvial fans. Kuehn stressed that "badland settings are like no other when it comes to the dynamics, complexity, synchronicity, and overall impact of geomorphic processes on the archeological record."[67] The 1998 field season included the pedestrian survey of ca. 4,050 acres north of the Visitor's Center in the vicinity of Quinn Table, an area proposed for controlled burns. Although the prescribed burns did not occur, the survey proceeded with a modification in the field methods and the addition of a survey of a proposed road project and a sewage lagoon.[68] The survey resulted in the re-examination of two previously recorded sites and the recordation of 76 new sites

Fieldwork during the 1999 field season included review of existing collections maintained at the Park, a revisit of two sites (the Pinnacles site (39PN9) and the Johnny site (39JK4)), two compliance-related surveys (one at the Northeast Entrance Station and the other at Sheep Mountain Table), and a large survey in the vicinity of Sage Creek.[69] Collectively, the 1999 field season included the survey of approximately 2,450 acres, the recordation of 87 new sites, and the re-examination of seven previously recorded sites.[70]

The 2000 field season included examination of private collections in collaboration with Mike Fosha of OSA, while test excavations focused on threatened portions at two sites: the Pinnacles site (39PN9) and site 39PN1160.[71] The results of the 2000 test excavations at the two sites, along with a detailed cultural context and a synthesis of the archeological resources within the Park, are presented in Hannus et al.[72] The data presented in the 2003 report is the most comprehensive document to date on the archeology of the White River

Badlands region and Badlands National Park. Much of the prehistoric context presented below draws heavily from the data presented in the above report as well as the numerous reports prepared by Hannus and his colleagues. Recently, Jones reported the results of monitoring construction activities to stabilize a major erosional slump near the Johnny site (39JK4) on the Cedar Pass Road.[73]

To summarize, as of 2002, over 12,000 acres (about 5%) of Badlands National Park have been surveyed for archeological resources. The surveys have resulted in the identification of approximately 260 (as of 2005 SARC has recorded 355 sites) prehistoric and historic sites and 80 isolated finds or activity areas.[74] Of the roughly 260 known sites, 11% are considered historic, about 28% of the prehistoric sites can be assigned to a temporal period or cultural group, and the remaining 61% of the sites are classified as prehistoric or unknown. Of the 70 dateable prehistoric sites, only 13 have been dated to the Archaic period or earlier. These include four sites with Paleo-Indian projectile points, one Early Plains Archaic site, four Middle Plains Archaic (McKean point) sites, and eight Late Plains Archaic sites (Pelican Lake points or radiometric dates).[75] In addition, several Paleo-Indian and Archaic sites/points have been reported adjacent to the Park.[76] The remaining 57 sites date within the last 2,100 years and are assigned to the following cultural groups or periods: Plains Woodland tradition, Avonlea complex (n=5), Besant complex (n=2), Plains Village tradition, and undifferentiated Late Prehistoric or Protohistoric.[77] Kuehn and Hannus et al. also report 14 radiocarbon dates with mean ages of 2,300 to 250 BP (ca. 350 BC to AD 1750) from the Pinnacles site (39PN9) representing Late Plains Archaic, Plains Woodland, and Plains Village occupations.[78] These dates are comparable to the suite of dates obtained from hearths and other features in the Fog Creek area. Six dates from the Fog Creek sites date from ca. 1,600 BP to 750 (ca. AD 350-1200). The sigma value on these dates range from plus or minus 70 years for the earliest date to 250 years for the most recent date.[79] Hannus et al. report four dates from the Sage Creek drainage that range in age from 2,200 to 270 BP, and a suite of ten radiocarbon dates ranging from 1,435 to 12,010 BP.[80] The dates reported by Kuehn were obtained from the four major geomorphic features he analyzed during 1997.[81]

Table 2 presents a summary of selected archeological studies in the vicinity of the Park between 1978 and the present. Table 3 presents a summary of archeological data for sites that are listed or eligible for the National Register of Historic Places (NRHP) within the Park. A review of the archeological GIS database at the NPS-MWAC and the comparable GIS database at SDARC indicates that only two sites have been determined eligible. Because of the sensitive nature of archeological site location information, the Park has requested that NRHP listed and eligible archeological sites are not illustrated or graphically reproduced in the HRS report; thus, the need to include Table 3. It should be noted that the vast majority of sites recorded within the Park have been classified as "Unknown" or "Unevaluated." "Unknown" applies to sites that were recorded over 30 years ago and have not been revisited; thus, it is in not known if these sites still exist. "Unevaluated" applies to extant sites that were recorded by an archeologist, but these sites have not been evaluated for their NRHP status.

Table 2. Summary of Selected 1978 and Post-1978 Archeological Surveys in or Adjacent to Badlands National Park

References	Location	Acreage	Sites	Comments
Lincoln 1978	North Unit: Quinn Table & Quinn Table NE Quads; Sage Creek Rim Road	14 km-long road (est.) and a 100 m-wide corridor (approx. 345 acres)	15 sites: 39PN21-22 (Beaubien prev. discovered); 39PN327-339; and 2 isolated tools	Visibility ranging from 40% to 90%; North Unit
Falk et al.1978	South Unit: Stirk Table and Imlay SW Quads	1,280 acres	23 prehistoric sites; 4 historic sites	Survey of land between 2,600 and 2,650 ft. above MSL; heavy grass cover; South Unit
Jones 1979	Sage Creek Rim Road	Unknown	(see Lincoln 1978)	Resurvey of Lincoln 1978; North Unit
Anderson 1980	South Unit: Cuny Table East Quad	<5 acres	39SH34; 39SH35 Both tipi rings	Emergency evaluation of quarry area; 40% surface visibility; South Unit
Anderson 1981a	White River Development Area	<0.5 acre	39SH14, 39SH27	Bridge replacement survey; South Unit
Anderson 1981b	Upper Fog Creek	unknown	39SH36	Site Visit; South Unit
Mueller 1982	North Unit: Quinn Table & Quinn Table NE Quads; Buffalo Fence	5.75 mi. long (9,250 m) linear survey (200 m wide = 460 acres)	Two sites recorded: 39PN538 and 39PN539	North Unit
Hannus et al. 1984	White River Badlands	–	–	Research Design for Multi-Year Study
Kellar et al. 1984	Pass Creek	Unknown	39JK63 and 39JK68	Test Excavations; North Unit
Lueck and Butterbrodt 1984	Pass Creek, Cuny Table & other locations	Unknown	Multiple sites; 39SH80-Paleo, Besant & Middle Missouri ceramics	North & South Units

References	Location	Acreage	Sites	Comments
Nowak et al. 1984	West Horse Creek Quarry	1,200 acres	39JK37	Survey and test excavations
Nowak and Hannus 1985	White River Badlands	–	–	Overview of SD from Badlands Perspective
Hannus and Winham 1985	White River Badlands	Unknown	Unknown	Surveys near South Unit
Church 1985	BIA 27: Scenic to Rockyford	Unknown	Unknown	South Unit
Chomko 1985	Two Proposed Visitor Centers	Unknown	12 sites	South Unit
Hannus et al. 1986	White River Badlands	Unknown	Unknown	None
DeVore 1986a, 1986b	North Unit: Cottonwood SW Quad; 160-acre land exchange; two 20 acre landfills	160 acres (1/4 of a section) plus some smaller tracts in other locations	Three sites recorded: 39JK90-92; and 4 isolated flakes	Other areas surveyed: two sewage lagoon sites (3-4 acres); two landfill sites (3-4 acres); 39JK4 plus 1 acre SW; parking lots and pull-offs; North Unit
A. Johnson 1987a	North Unit: Wall SW Quad; Thistle Dam Borrow Area	ca. 12 acres	None	Surface examination was adequate (given thick grasses). No cultural materials; North Unit
A. Johnson 1987b, 1987c	North Unit: Interior Quad; Concession Cabin Area & Residence Area	7 acres and 24 acres, respectively	Concession Cabins (b) = 0 sites Residence Area (c) = 0 sites	Visibility poor (in lots with houses) to good (in cabin areas). No cultural materials; North Unit
Johnson 1987d	South Unit: Sheep Mountain Table Quad	approx. 10-25 acres	None	Adequate to good visibility, 2-track road; top of table homesteaded and hay raised for many years; South Unit

References	Location	Acreage	Sites	Comments
Johnson 1987e	Along Castle Trail	Unknown	None	10K Volksmarch; North Unit
Johnson 1987f	Near Cedar Pass	approx. 11 acres	Tested sites 39JK2-39JK4	Noted possible utilization of Medicine Root gravels; North Unit
Johnson 1988	Fog Creek Drainage	Unknown	Monitored Existing Sites	South Unit
Hannus et al. 1989	South Unit: Fog Creek - Stirk Table Quad	approx. 160 acres	23 prehistoric sites	See Johnson 1996 for summary of surveys in Park by Hannus (1981), Chomko (1985), and Johnson (1987 and 1988, monitoring); South Unit
Jones 1990	Fog Creek Drainage	Unknown	Monitored Existing Sites	South Unit
Chevance 1991	Palmer Creek	approx. 3-4 acres	None	Project primarily outside the Park; Palmer Cr. Unit
Buechler 1992	BIA Highway 27	Unknown	None	Project primarily outside the Park; South Unit
Livermont 1992, 1993	South Unit: Imlay SW Quad	Monitoring survey of removal of a fuel tank and of a parking lot expansion	2 previously recorded sites located	South Unit
Jones 1993	North Unit: Wall SE, Cottonwood SW & Interior Quads; Loop Road Survey, 1991 Segment	Approx. 900 acres (JMA estimate); length: 4.54 mi. or 7.3 km, with a corridor ranging from 175-650 m in width	Recorded five known sites: 39JK2-4, JK8, JK107; and four new sites: 39JK187-189 and 39PN1135	Road segment 10-2 and 10-3. Limited subsurface testing on new sites. Visibility generally poor except for eroded areas, rodent burrows; North Unit

References	Location	Acreage	Sites	Comments
Lewis 1994	North Unit: Quinn Table SE Quad; Tyree Basin, Sage Creek Wilderness Area; Black-Footed Ferret Reintroduction Survey	Three prairie dog towns: lower town=359 acres; middle=136 acres; and upper= 528 acres	Four new sites located: 39PN1326-1329; Beaubien's site, 39PN15, in very close proximity	Visibility not specified, but visibility is usually higher on prairie dog colonies; 40 release sites surveyed for cultural resources; North Unit
Buechler 1994	Pinnacles Ranger Station Entrance vicinity	approx. 6 acres	None	Project primarily outside the Park
Banks 1995	South Unit	Unknown	Unknown	Water Pipeline Survey from Sharps Corner to Rockyford; South Unit
Kangas 1995	South Unit	Unknown	Unknown	Water Pipeline Survey Rockyford to Cuny Table; South Unit
Johnson 1996	South Unit: Fog Creek. Stirk Table Quad	Same area as previous studies		South Unit
Jones 1996	North Unit: Wall, Wall SW, Wall SE & Cottonwood SW Quads; Loop Road Survey, 1993 Segments	1,163 acres (per Jones); linear distance: 24 mi. or 38.4 km; corridor 120 m wide	4 previously re-corded sites: 39JK4, 39PN4, 39PN9, and 39PN1135; and 13 new sites: 39JK191-196, 39JK198, 39PN1159-1162 and 39PN1174-1175	Road segments 10-1, 10-3, 10-4, and 10-5; varying visibility. Limited testing of new sites; 39PN9, 39PN1135, and 39PN1160 also; 39JK4 mapped and two vertical profiles excavated.
Buechler 1996	White River Badlands	Unknown	Unknown	Water Pipeline Survey from Rocky Ford to Manderson

References	Location	Acreage	Sites	Comments
Buechler 1997	White River Badlands	Unknown	Unknown	Water Pipeline Survey Cuny & Red Shirt Tables
Jones 1998	2 sewage lagoons	25 acres	None	North Unit
Hannus and Winham 1998	Yr. 2 of multi-year archeological survey	4,050 acres	77 new sites	Various locations North Unit
Jones 1999	Fire Cache, VIP Trailer Pad, & Water Tower	Unknown	39JK237 (historic site)	North Unit
Hannus and Winham 1999	Yr. 3 of multi-year archeological survey	2,472 acres	87 new sites & 6 sites revisited	Various locations North Unit
Hannus et al. 1999	Northeast Entrance Road, 300 ft corridor x .75 mile	27 acres	39JK238 (new) 39JK196 & 39JK138 revisited	North Unit
Stevens and Lorenzini 2001	Sect. 1-3 Badlands Bombing Range; Cuny Table and South Unit	approx.400 acres	14 prehistoric & 2 historic sites 39SH209-39SH219, 39SH226, 39SH234, 39SH239-241	Sectors 1-3 Badlands Bombing Range; South Unit
Stevens and Lorenzini 2003	North of Cuny Table; & between Cuny Table & Sheep Mt. Table	approx. 327 acres	29 prehistoric sites 39SH271-39SH299	Sectors 10-11 Badlands Bombing Range; South Unit

Table 3. Summary of NRHP Eligible Sites in Badlands National Park

Site Number	Site Name	Condition	Site Type	Time Period	NRHP Status
39JK4	Johnny Site	Disturbed & Eroded	Occupation	AD 900-1700	Eligible
39PN10	Rosko Site	Extant	Occupation	AD 1700-1861	Eligible

Prehistoric Cultural Context

The prehistoric cultural context for southwestern South Dakota, which includes the White River Badlands, the Black Hills, and the Pine Ridge, is generally regarded as a subregion of the Northern or Northwestern Plains. The prehistoric context presented below draws heavily on the comprehensive work of Hannus et al., Zimmerman, Johnson and Wood.[82] However, the context section also includes relevant information from books and articles that present a more regional perspective as well as site specific reports and journal articles. The context presented below is intended to be a synthesis of the more important archeological information for the White River Badlands and is not presented as an exhaustive nor comprehensive summary or interpretation of the prehistoric record in this part of the state. Numerous resource materials were reviewed and contributed to this prehistoric context. Chapter 10 *Selected Bibliography* contains a list of all cited references. The majority of these sources are on file at OSA in Rapid City and at the Badlands National Park Headquarters near Interior. The prehistoric context presented below is based on the data and interpretations provided by the various report authors, and it is not intended to adhere to one particular paradigm (e.g., direct historical perspective, cultural ecology, systems theory, optimal foraging theory, processual, or post-processual theories). Rather the context will focus on observable changes in site types, site locations, technological and subsistence changes as well as presenting evidence for socio-cultural, demographic, and socio-political changes. Appendix A presents a table of archeological site information for the sites recorded in, or immediately adjacent to, the Park. These data were obtained from the SARC GIS site files database.

Paleo-Indian Period (10,000-6,000 BC)

The earliest unequivocal evidence for occupation of the Northwestern Plains took place about 10,000 BC during the Paleo-Indian period. Hannus reports that the landscape of the White River Badlands at this time was not dissimilar to the high plains west of the Missouri River and east of the Black Hills.[83] The Paleo-Indian period corresponds to the Late Glacial, Pre-Boreal, and Boreal climatic episodes defined by Bryson et al. (1970).[84] During the Late Glacial and Pre-Boreal episodes, Hannus reports that the Badlands region consisted of an undulating, steppe, tundra-like landscape that supported various grasses and contained numerous watering holes surrounded by marshy wetlands.[85] During this period, Paleo-Indian groups were organized into small, highly mobile, egalitarian bands. The Paleo-Indian period is sub-divided into various cultural complexes, based primarily on typological changes in projectile point morphology. For purposes of this discussion, the cultural complexes include Llano (10,000-9,000 BC); Goshen-Plainview and Folsom (ca. 9,000-8,000 BC); and Plano (8,000-6,000 BC). The latter includes Agate Basin, Hell Gap, Scottsbluff, Dalton-Meserve, and Angostura among others.

The Llano complex is characterized by the distinctive Clovis projectile point. Clovis points are finely crafted points that are lanceolate in shape, very thin in cross-section, have a concave base, exhibit collateral flaking, and have a distinctive basal groove or "flute" (usually on both sides of the blade). Clovis tools, like most other Paleo-Indian artifacts, were manufactured from exotic high-quality lithic materials (mainly chert,

chalcedony, and fine-grained quartzite). The fact that Clovis points and other Paleo-Indian tools often occur hundreds of miles from the raw-material source suggests these people participated in long distance trade networks or interaction spheres. Hayden hypothesized that these trade networks, which may also have included exchange of women, actually served to maintain subsistence spheres in a harsh and unpredictable environment where group survivorship often depended on the ability to infringe on another group's territory in order to obtain various food resources over a short period of time.[86] The exchange of exotic raw materials and other items is thought to have maintained group alliances during times of resource stress.[87]

Although isolated Clovis finds and other Paleo-Indian points are known to occur throughout North America (including portions of Mesoamerica), Clovis and other Paleo-Indian sites are rare. Within southwestern South Dakota, the Lange/Ferguson site and the West Horse Creek Quarry site appear to be the only documented Clovis sites in the area. The Lange Ferguson site, located about 11 miles south of the Park in the White River Badlands, produced a clear association of Clovis points *in situ* with butchered mammoth remains. The West Horse Creek Quarry, located about 10 miles south of Cuny Table, produced debitage and basal fragments from several Clovis points. Archeologists believe the quarry was exploited from the Clovis period into the protohistoric period.[88]

The Clovis complex, which represents a relatively short-lived lifestyle (ca. 10,000-9,000 BC), is associated with the exploitation of extinct Pleistocene fauna, such as mammoths and mastodons. Although their subsistence strategies focused on hunting large migratory Pleistocene fauna, various wild plant resources were gathered. However, patterns of plant use for Paleo-Indian groups are poorly documented. Structural remains during this period were temporary in nature and for the most part are poorly preserved in the archeological record.

By 8,000 BC, changes in climatic patterns triggered environmental changes. Palynological and microfaunal data provide evidence of the dramatic and significant climatic changes (warmer and drier). During the Boreal climatic episode (ca. 7,700 to 6,500 BC), relatively cooler and somewhat drier conditions prevailed. Some researchers have suggested that the climatic/environmental changes during this period triggered a reduction in C3 grasses (the bison's preferred diet) and an increase in C4 grasses. This climatic shift led to a decline in the size and magnitude of bison populations by altering their migration patterns and reducing the bison carrying capacity as C3 grasses continued to decline relative to C4 grasses. Therefore, bison became a less stable and dependable food source for Paleo-Indian populations.[89]

The Clovis complex was followed by the Goshen-Plainview (9,000-8,000 BC) and the Folsom complexes (8,750-8,150 BC). Based on data from the Jim Pitts site in the Black Hills, the Hell Gap site in Wyoming, and the Mill Iron site in Montana, Frison has suggested that the Goshen complex is transitional between the Clovis and Folsom complexes.[90] Artifacts from the stratified Jim Pitts site indicated four complexes (Goshen, Folsom, Agate Basin, and Cody) with the Goshen materials representing the oldest and most extensive occupation. Although the chronological placement of the

Goshen complex remains somewhat problematic, there is little doubt that the complex is a valid Plains Paleo-Indian manifestation. Hannus reports that Goshen-like points are present in collections from the White River Badlands, but no sites per se have been recorded from the area.[91]

The Folsom complex is well documented from the southern Canadian Plains to northern Mexico and from the Great Basin to the Midwest. This widespread complex is defined by the distinctive Folsom point, a medium to small leaf-shaped point, with a concave base, deep channel flutes, and collateral flaking. Folsom points are generally smaller than Clovis points and exhibit a longer and broader flute. Folsom points are associated with the hunting of extinct bison known as *Bison bison antiquus* and *Bison bison occidentalis*. Wilson argues that both bison populations were contemporaneous and represent geoclinal populations, with *B. bison occidentalis* representing the northern Plains variant and *B. bison antiquus* representing the southern Plains variant. Wilson asserts that both chronosubspecies were present in Wyoming (and presumably South Dakota) and both subspecies contributed genes to the modern bison population.[92] Although Folsom people are generally associated with hunting extinct forms of bison, evidence from the Lindenmeier site in extreme northern Colorado produced a variety of plant processing tools.

Folsom points are relatively rare in South Dakota, but some Folsom components have been recorded in the vicinity of the White River Badlands. In addition to the Folsom component at the Jim Pitts site (Black Hills), other Folsom sites (components) in the region include the Brewster site (Agate Basin locality-near southern Black Hills in Wyoming), the Folsom component at the Hell Gap site (east-central Wyoming), the Ray Long site (39FA65-southern Black Hills in South Dakota), and the Folsom Spring site (39SH101) in the White River Badlands. The latter is a partially deflated campsite associated with a fossil spring. The site produced three incomplete Folsom points along with bifaces and a debitage of chert, chalcedony, and quartzite.[93]

The Plano complex, which represents the end of the Paleo-Indian period, dates from roughly 8,500-6,000 BC), and is represented by a wide variety of finely crafted lanceolate-shaped, unfluted projectile points as well as points with parallel-oblique flaking. A list of projectile points attributed to the Plano complex include, but are not limited to, Agate Basin (8,500-8,000 BC), Hell Gap (8,000-7,000 BC), Alberta (Alberta 7,500-6,600 BC), Cody (7,200-6,800 BC), Scottsbluff (7,000-6,000 BC), James Allen (6,000 BC), Angostura (7,050-6,000 BC), Lusk, and Frederick.[94] The diversity of Plano-type points and the widespread occurrence of these points suggest that territorial ranges were both more defined and somewhat more restricted compared to the preceding Llano and Folsom complexes. Although exotic raw materials are still used in the manufacture of Plano points, the fact that more local raw material sources are common supports the notion of smaller and more defined territorial boundaries. The increased number of Plano points from collections in the area and the increased number of sites that date to this time period suggest that populations increased during this period. In any event, these people were well adapted to the Plains environment and although faunal remains indicate a heavy reliance on bison, the hunting of other game such as deer, elk, and antelope is also

common. Plano complex sites are relatively poorly known in the Badlands and Black Hills, but several sites in western Nebraska and eastern Wyoming have been excavated over the years, beginning in the 1930s and 1940s. Within the Park, four sites contain Paleo-Indian artifacts. These include Site 39JK195 (near Loop Road north of Cedar Pass), sites 39SH15 and 39SH80 (near Cuny Table), and site 39SH207 located on Sheep Mountain Table.[95] According to Mike Fosha (personnel communication, 2004), Clovis, Goshen, Folsom, and Dalton points have been reported in private collections from the Sheep Mountain Table–Scenic region and the state archeological site files indicate eight Paleo-Indian sites in the White River Badlands region.

Early and Middle Plains Archaic Period (6,000 – 1,000 BC)

For purposes of this discussion the Plains Archaic period will be subdivided into three subperiods: an Early period (6,000-3,000 BC), a Middle period (3,000-1,000 BC), and a Late period (1,000 BC-AD 200). The Early Plains Archaic period coincides with the onset of the Atlantic (Altithermal) climatic episode (ca. 6,500-2,730 BC), and the Middle Plains Archaic period more or less coincides with the Sub-Boreal climatic episode (2,730–950 BC).[96] The Atlantic episode, which was characterized by significantly warmer and drier conditions, led to dramatic changes in grassland communities, the establishment of the short-grass prairie, and a decrease of foliage. In addition to environmental changes, Pleistocene megafauna became extinct while modern bison and other present-day faunal communities became established. The Sub-Boreal episode saw a southward shift in the mean position of the Arctic frontal zone which brought cooler temperatures and increased moisture back to the Plains, resulting in a climate similar to the present.[97]

Culturally speaking, the transition to the Early Plains Archaic period is rather abrupt and characterized by the presence of large, side-notched points and some corner-notched points. Projectile point types associated with the Early Plains Archaic period are poorly known (or recognized), but include Hawken and Logan Creek side-notched points and bifurcated Oxbow points. Common projectile points during the Middle Plains Archaic period include points of the McKean complex, named after the McKean site on the northwestern edge of the Black Hills. Points associated with the McKean complex include McKean, Duncan, Hanna, Yonkee, and Mallory.[98] The McKean complex dates between 3,000-1,000 BC and coincides with the end of the Sub-Boreal episode and a return to conditions more similar to today's climate, if not cooler and wetter. McKean points and McKean variants are ubiquitous across the Northwestern Plains, suggesting a population increase and/or improved conditions for site preservation.

During the initial stages of the Early Plains Archaic period, these people lived in a similar fashion to preceding Plano populations. However, by the Middle Plains Archaic period, groups exploited a more diverse range of plants and animals. The increased exploitation of wild plants is evidenced by the increase in *manos y metates* (grinding stones and grinding slabs).[99] People formed nomadic and semi-nomadic groups with base camps supporting a number of centralized activities and various smaller camps were used for resource procurement or other specialized activities. Base camps and group size shifted according to the seasonal exploitation of available resources. For example, people tended

to gather in communal hunting groups during the fall when bison herds coalesced. Sites dating to the Middle Plains Archaic period include large numbers of stone circles (perhaps bases for circular lodges or tipis), bison kill sites (i.e., jumps and corrals) and seasonal camps.[100]

The Early Plains Archaic period, between 6,000-3,000 BC, is characterized by the dramatic decrease in archeological sites. The decrease in sites, combined with the extremely warm and dry climatic conditions of the Atlantic episode, led many archeologists to suggest that the High Plains were abandoned during this period. More recently, data from deeply buried sites in alluvial settings and playa lakes suggest that site formation processes (namely extensive down-cutting and erosion in the uplands and deposition in lowlands) contributed to the paucity of sites during the Early Archaic period. That is, sites in upland settings have been eroded or destroyed while sites in lowland settings have been deeply buried by alluvial fill sediments. The fluorescence of the McKean complex during the Middle Plains Archaic seems to be correlated with the return to more favorable climatic conditions that allowed short-grass prairies and gallery forests to become re-established and have resurgence in the bison population.

Although Early Plains Archaic sites are poorly documented for the White River Badlands region, a number of Middle Plains Archaic sites or find spots have been recorded within this portion of the state. Of particular note is Site 39SH561, an exposed hearth with a McKean point, located 3.5 miles south of the Park.[101] Several McKean sites have been recorded within the Park including 39SH36 in the Fog Creek area, 39SH207 on Sheep Mountain Table, 39SH220 northwest of Cedar Pass, and 39PN1544 on Quinn Table. Hannus also notes 15 other sites attributable to the McKean complex that have been recorded within the White River Badlands region.[102]

Late Plains Archaic Period (1,000 BC-AD 200)

The Late Plains Archaic period is characterized by a wide variety of corner-notched projectile points that contrast sharply with the preceding McKean complex points. The most widespread and only named, corner-notched point dated to this period is the Pelican Lake point. Pelican Lake points represent a true corner-notched point with barbed shoulders and diagonal notching. Reeves argues that the Pelican Lake point developed from Hanna points by at least 1,000 BC. For the most part, these points are well made and occur from southern Canada to the Arkansas River in Colorado and from the Rocky Mountains to the Mississippi River.[103] The widespread distribution of the Pelican Lake complex suggests the complex actually represents a large number of regional groups with relatively broad territorial ranges. For example, Reeves has defined nine Pelican Lake subphases.[104] The White River Badlands are included in the Glendo subphase, which also includes eastern Wyoming, northeastern Colorado, western Nebraska, and southwestern South Dakota. Pelican Lake points and other Late Archaic artifacts are well represented at two sites in western Nebraska, namely the upper deposits from the Signal Butte site (Stratum II) and the lowest deposits from Ash Hollow Cave, which is located near the Platte River valley in Garden County.

The trend for cool, moist summers established during the Sub-Boreal episode continued during the Sub-Atlantic episode (ca. 950 BC-AD 280). The cool moist summers during this period allowed for the growth of lush grasslands and increased the grazing potential and carrying capacity for herbivores (bison, elk, antelope, and deer). Both tool assemblages and subsistence data demonstrate continuity with the preceding McKean complex. Bison hunting continued to be the primary subsistence focus with the use of arroyo traps and kills as a common practice. The harvesting of wild plant resources such as seeds and nuts also continued to play an important role as evidenced by the increase in ground stone tools from sites of this time period.

One site (39JK82), located in the White River Badlands, produced radiocarbon dates of 2,050 and 1,970 BP (i.e., between ca. 100 BC and AD 20).[105] Pelican Lake points are frequently reported in surface collections in the Black Hills, and also occur as surface finds in eroded deposits in the Pass Creek and Fog Creek drainages. Several sites with Pelican Lake points occur within the Park. These include Sites 39PN9 and 39PN1160 near the Pinnacles, site 39PN27 in the Sage Creek Wilderness Area, site 39PN1174 east of the Wounded Knee Overlook, site 39JK192 near the Loop Road north of Cedar Pass, and three sites in the Fog Creek area: 39SH57, 39SH58, 39SH68.[106] The state site files document 17 sites in the area with Pelican Lake or Late Archaic components.

Plains Woodland Period (AD 200-1200)

The Plains Woodland period is often subdivided into the Middle Plains Woodland (AD 200-800) and the Late Plains Woodland period, also referred to as the Plains Village tradition (AD 800-1200) and the Middle Missouri tradition (AD 1000-1600). In the Northwestern Plains this time period is commonly known as the Late Prehistoric (AD 200-1700) period. Although the Late Prehistoric period covers the same temporal span, the use of this term tends to focus attention on cultural patterns from the Northwestern Plains, to the exclusion of cultures and people to the east (i.e., Woodland, Plains Village, etc.) that strongly influenced cultural expressions in this part of the Plains. For these reasons, the discussion presented herein will attempt to distinguish the different cultural groups that influenced and occupied southwestern South Dakota during this 1,000 to 1,500 year period. Thus, the discussion begins with what is referred to as the Middle Plains Woodland period (AD 200-800).

The term Plains Woodland refers to various cultural complexes that most scholars believe derived from a Woodland cultural tradition to the east. For the most part, the Plains Woodland tradition is expressed along the Missouri River and its tributaries in the eastern portion of South Dakota. However, examples of Woodland influences (or cultures) to the east have been found in western South Dakota. Manifestations of the Woodland culture include semi-sedentism, cord-marked pottery, trade goods, and burial mounds. Although burial mounds and Woodland villages have not been identified in the Badlands, Plains Woodland ceramics are fairly common in the area. Expansion of Plains Woodland may be related to the expansion of Besant cultures throughout the High Plains. Pollen and macro floral remains of pumpkin and squash were documented in eastern Wyoming from sites that produced Besant-period dates, and Besant points were found at several nearby

sites.[107] Plains Woodland sites also occur west of the White River Badlands in the southern Black Hills.

The two earliest and most prominent cultural complexes are Besant (ca. AD 50 – AD 750) and Avonlea (AD 100 – AD 950). Some authors, such as Johnson, Reeves, and Tibesar, consider the terms Middle Plains Woodland and Besant to be synonymous. However, depending on the end dates for the Late Plains Archaic period, some archeologists (e.g., Frison) include the Besant complex in discussions on the terminal Late Plains Archaic.[108] Data from several sites in the area indicate that Besant and Avonlea sites were contemporaneous. Not only were these complexes contemporaneous, but Avonlea points are intermixed with Besant components and vice versa. The following discussion on the Besant complex is included in the discussion of Woodland cultures because of the apparent development of the Besant complex from a Northern Plains Woodland tradition. Like elsewhere in the eastern United States and southern Canada, the term Woodland is generally associated with the introduction of ceramics, the bow and arrow, increased sedentism, and agriculture. In western South Dakota, these changes occur at different times and places.

The Besant complex is characterized by large, side-notched dart points with straight or slightly concave bases. According to Johnson the Besant complex represents a migratory bison-hunting tradition that existed on the Northern Plains (i.e., southern Alberta, Saskatchewan, and Manitoba; North and South Dakota; Montana; and Wyoming) between AD 100 to 700.[109] The earliest Besant sites, which appear in the southern Canadian Plains are aceramic, and pre-date the appearance of Plains Woodland ceramics. Reeves reported dates of 50 BC, AD 100, and AD 300 for Besant components at the Head-Smashed-In Buffalo Jump in Alberta.[110] Keyser reported comparable dates of A.D 50 and AD 250 from the Donovan and Fresno sites, respectively, along the Milk River in north-central Montana.[111] In Wyoming, Besant occupations are known from three communal kill sites, including the Ruby site. Radiocarbon dates from two of the three sites range between AD 150 and 280. The aforementioned sites are aceramic. However, ceramics of the Northern Woodland Plains tradition have been found in association with Besant artifacts at sites in Montana and North Dakota that date to AD 400 and AD 350, respectively.[112] Johnson argues that the pottery from these sites is identical to ceramics of the Northern Woodland Plains tradition (AD 150 to 900) and easily fits within this temporal range. Moreover, she asserts that ceramics of the Northern Plains Woodland tradition commonly occur at Besant campsites. Despite the co-occurrence of Besant points and pottery at some sites, Reeves states that Besant pottery is rare.[113]

Because the origins and the initial timing of the Besant complex are not well known, archeologists have developed several hypotheses to explain the cultural origins of these people. Based on the association between Besant points and Northern Plains Woodland ceramics, Johnson considers the Besant people to be of a Plains Woodland origin.[114] Kehoe agrees that Besant derives from a Woodland origin, but he believes the Besant complex originated from Algonquian people in Saskatchewan during the Middle Woodland period.[115] Perry provides yet another explanation for the origins of the Besant complex. Perry concludes that southward migrating Athabascans were responsible for

the development of the Besant complex.[116] Perry maintains that the Besant complex represents a remnant population of caribou-hunting Athabascans that adopted their game drive techniques, originally developed for caribou, to the Plains environment and bison as a result of climatic amelioration during the warm, dry Scandic episode (AD 280–870).[117] Although Perry's arguments are rather compelling, the climatic change, or Scandic episode, that supposedly separated the northern and southern Athabascans, and led the southern Athabascans to shift to bison hunting, occurred some 200-300 years after the initial appearance of the Besant complex. The Athabascan population derived from an aceramic tradition, whereas as many sites in Canada and the United States have demonstrated the co-occurrence of Besant points and pottery of the Northern Woodland Plains tradition.[118]

Regardless of its origins, the Besant complex is widely regarded as having the most sophisticated pre-horse, bison-hunting techniques ever documented on the Plains. During the preceding McKean and Pelican Lake complexes, bison kills were restricted to arroyo traps and jump sites. Besant populations incorporated topographic elements into their hunting techniques, but they also introduced the use of artificial corral-and-wing structures. At the Ruby site in east central Wyoming, Frison documented various artificial structures (e.g., drive lanes, wing structures, bison corral, and a religious structure) that were used to herd the bison, and drive them into a compound where they were killed.[119] Evidence from the Ruby site indicates these structures were rejuvenated as needed. Frison concludes, "that the ability to incorporate sophisticated structures into certain features of the natural topography resulted in a highly successful hunting strategy, and as a result, these hunters…could set up operations in a wider variety of bison habitat areas."[120]

Hannus et al. report that Besant sites in the White River Badlands are difficult to determine because of the variability in projectile point forms at this time and because points from the Plains Woodland period onward have not been systematically studied in this part of the state.[121] Besant points are relatively common in surface collections from the Black Hills (c.f. Tratebas) and the Pass Creek area (c.f. Lueck and Butterbrodt) in the White River Badlands.[122] Two Besant sites have been recorded within the Park. Site 39SH80 is north of Cuny Table and south of Cottonwood Creek, and site 39PN1174 is located 1.5 miles east of Big Foot Pass and about 5 miles north of Interior.[123] At least 14 other Besant sites (or components) have been recorded within the region.

To some archeologists, the beginnings of the Plains Woodland period began with the introduction of the bow and arrow and ceramics.[124] Typologically, the shift from dart points to arrow points is recognized by a change in the size and shape of the points. Small, side-notched, triangular and corner-notched points are common. Other technological innovations that occur in the Plains tool kit at this time include the grooved maul, arrow shaft smoothers, straight and expanded base drills, and shell beads of *Olivella* or *Dentalium*.[125] People continued to rely on wild game and wild plants for subsistence. Communal bison kills (i.e., jumps and traps) during the late summer/early fall were more common. The earliest of the small, side-notched arrow points to appear in the Northern Plains is the Avonlea point. Avonlea points first appear around AD 100-

300 at the Head-Smashed-In Buffalo Jump in Alberta; terminal Avonlea levels at the site are dated from AD 900 to AD 950.[126] Kehoe reported Avonlea dates of AD 210-660 at the Gull Lake site in southwestern Saskatchewan, and the Avonlea type site (also in southwestern Saskatchewan) produced a date of AD 450.[127]

Although initial Avonlea sites are contemporaneous with Besant dates (ca. AD 100-450), the Avonlea sites are aceramic. However, these sites do provide evidence of the first communal bison hunts using the bow and arrow. The introduction of the bow and arrow onto the Plains marks a significant change in social relations among primarily hunting groups. Arrow points were smaller in size than dart and spear points and therefore easier to make and replace.[128] Moreover, because the bow and arrow provided increased range and accuracy in hunting, it was easier to carry than a spear and atlatl, and several arrows could be shot by a person in a short amount of time. These features allowed hunters to act more independently at certain times of the year, while still providing for successful communal hunting during the fall months. The simultaneous occurrence of dart points and arrow points at Middle Woodland sites throughout the Plains is not surprising especially given that technological innovations often take many generations to become fully integrated into the material culture. By the onset of the Late Woodland period, the bow and arrow had become the weapon of choice. It is also interesting to note that the use of "expedient tools" (i.e., tools that were made at the site and then discarded) becomes common during the Woodland period; especially compared to earlier Paleo-Indian and Early Archaic periods when hunters carried tools long distances and continually rejuvenated their tools until the use-life was exhausted.

Whether the introduction of Avonlea points reflects a migration of people from the north or an indigenous development from the Pelican Lake complex is not clear. Reeves recognized a transition from Pelican Lake to Avonlea in southern Canada between AD 150 and AD 250 and between AD 400-500 in the Belle Fourche-Powder River region north and west of the Black Hills.[129] A northern origin for this complex is suggested by the range of dates that appear to be as much as 200 years earlier in the northern area of distribution for this point. Reeves suggested a terminal date for the complex of AD 700 in the Saskatchewan Basin (some 200-250 years earlier than data would suggest from Alberta) and AD 900-1000 in the Upper Missouri drainage.

Avonlea points, or more accurately Avonlea-like points, are relatively poorly documented in western South Dakota and eastern Wyoming. In fact both Frison and Greiser et al. report that the cultural relationship between Avonlea points and similarly shaped points on the Northwestern Plains is unclear.[130] Radiocarbon dates from levels producing Avonlea-like points from the Wardell site, near Big Piney in southwestern Wyoming, range from AD 350–950. Also unclear is the relationship between Avonlea and other well-documented, side-notched arrow points such as Prairie Side-Notched and Plains Side-Notched. Equally unclear is the association between Avonlea points and early ceramic wares on the Plains. Avonlea-like points have a broad distribution across the Plains from west of the Middle Missouri River to the Bighorn Basin and the Platte drainage into southern Canada.

In South Dakota, Avonlea points were recorded by Over in 1936 from Ludlow Cave in the northwest corner of South Dakota, and Tratebas suggested that site 39FA35 at the Angostura Reservoir produced a single Avonlea point. Haug reported two Avonlea-like points from the southern foothills of the Black Hills. Research in the White River Badlands produced Avonlea-like points in the Pass Creek and Fog Creek drainages, with radiocarbon dates clustering from AD 450-500. Five sites within the Park have been assigned to the Avonlea complex: 39PN1175 (east of Big Foot Pass) and sites 39SH59, 39SH62, 39SH66, and 39SH72 in the Fog Creek drainage. The classification of site 39SH62 as Avonlea has been questioned by Johnson.[131] The debate between Hannus and Johnson as to what constitutes the Avonlea complex versus Plains Woodland traditions typifies the problems confronted by archeologists in trying to assign cultural affiliation to material remains that are hundreds or even thousands of years old. Below is a brief summary of the fieldwork and results of archeological investigations that have occurred in the Fog Creek drainage of the South Unit over the last 30 years.

Fog Creek Sites

The Fog Creek drainage has been the scene of numerous investigations over the last 25-30 years. Fog Creek, a tributary of White River, is a relatively small spring-fed drainage on the east side of Cuny Table. Johnson and others have reported that alluvial sediments filled the White River valley and its tributaries as a result of glacial outwash during the Pleistocene.[132] Beginning in the early Holocene these alluvial sediments were flushed from the valley, leading to extensive erosion throughout the White River Badlands. Thus, site preservation, site erosion, and site exposure are intimately tied to geomorphological events on a regional as well as a local scale.

The first systematic work in the Fog Creek drainage was in 1978 by Adrienne Anderson (NPS) and Robert Alex (State Archeologist). They recorded a large site (39SH36) in the upper portion of the drainage that contained buried cultural horizons with roasting pits and heat-treated plate chalcedony.[133] Between 1980 and 1983, Augustana College conducted a survey of the White River Badlands, including some investigations in the Fog Creek drainage. This fieldwork resulted in the identification of 17 sites (39SH49, 39SH57-39SH72) and the recordation of the following site types: habitation, quarry/lithic reduction, game trapping or food preparation, burials, and overlook/chipping stations. As reported in 1981 at the time of the survey, the condition of these sites ranged from "integrity destroyed" or "largely destroyed," to "imminent danger" or "integrity threatened by erosion or slumping." A draft report of the studies was prepared in 1989.[134]

Additional investigations were sponsored and conducted by the NPS in the Fog Creek drainage in 1985.[135] As part of an archeological assessment for a proposed visitor's center in the South Unit, the NPS conducted preliminary field investigations of the various alternatives; one alternative included the Fog Creek area. A number of sites were briefly recorded and assigned temporary numbers during the reconnaissance survey.[136] Chomko also instituted a photographic monitoring program to assess the extent, magnitude, and rate of erosion within the drainage. In 1987, the NPS held a one-day training course for park employees. In addition, Robert Alex, Adrienne Anderson, and Ann Johnson visited

the Fog Creek area and collected the following artifacts: two bifaces from Site 39SH62, two bones from Feature A at Site 39SH57, and some pottery and a projectile point tip from Site 39SH133.[137]

In 1988, 1989, and 1991 the NPS conducted additional survey and limited excavation of sites in the Fog Creek drainage. Surveys recorded several new sites and/or features, and three roasting pits were excavated at site 39SH68. Although site forms were completed for newly discovered sites (e.g., 39SH136-39SH138), the rapid rate of erosion within a 10 year period complicated the ability to correlate previous studies with the 1988 work. For example, Anderson and Alex in 1978 assigned a single site number (39SH36) to a geographical area that contained several isolated exposures of cultural material. Conversely, Hannus assigned site numbers to individual features, many of which were destroyed or removed by erosion by the time the NPS inventoried the area in 1988.[138] Johnson reported two significant changes in site boundaries from Hannus' work: "(1) the boundaries for Site 39SH57 were enlarged to encompass the sod table in the central area (i.e., former sites 39SH49, 39SH61, and 39SH64) and (2) the boundaries of Site 39SH68 were enlarged to include 39SH67 (removed by erosion), Sites 39SH69-39SH71, and an unnamed and unnumbered location known as AA-1, Area 2, Feature 1."[139] According to Johnson's report, 17 sites were extant within the Fog Creek drainage as of the 1989 field investigations. These sites are as follows: 39SH36, 39SH57-60, 39SH62, 39SH63, 39SH65, 39SH66, 39SH68 (incorporating former sites 39SH67 and 39SH69-39SH71), 39SH72, 39SH133, 39SH136-39SH138, and 39SH140-39SH141.[140] Excavations at these sites yielded a number of radiocarbon dates, but very few diagnostic artifacts. Johnson reports that the work by Hannus, Chomko, and the NPS produced a suite of 19 radiocarbon dates from nine sites.[141] Diagnostic artifacts and radiometric dates from the nine dated sites (39SH36, 39SH57, 39SK58, 39SH60, 39SH62, 39SH63, 39SH68—including various "Areas" and former sites, 39SH72, and 39SH133) revealed occupation of the area from the Late Archaic (Pelican Lake complex), Besant/Middle Plains Woodland, Late Plains Woodland, Central Plains tradition, Initial Middle Missouri, and Post Contact Coalescent (Arikara) periods.[142] The overwhelming percentage of radiocarbon assays (17 of 19) and diagnostic artifacts date to the Besant/Middle Plains Woodland, with all other periods nearly equally represented except Avonlea and the Central Plains tradition, the latter of which overlaps in time with the end of the Late Plains Woodland period and the beginning of the Initial Middle Missouri period .

Late Archaic occupations are evinced by the presence of three Pelican Lake points at two sites (39SH57 and 39SH58). In addition to the 17 radiocarbon assays, diagnostic projectile points and ceramics demonstrate repeated use of the Fog Creek area by people of the Besant complex and/or the Middle Plains Woodland culture between AD 400 and AD 800. According to Johnson, there are no Avonlea sites or components within the Fog Creek drainage and perhaps the entire White River Badlands. Based on radiocarbon dates and diagnostic projectile points recovered from the 1981 investigations, Hannus et al. maintain that two sites in the Fog Creek area (39SH59 and 39SH62) contain evidence of Avonlea occupation.[143] Johnson, who also conducted investigations at the site, has openly questioned the affiliation of Avonlea sites in the Badlands in general and at site 39SH62 in particular.[144] She believes the points should be classified as Middle or Late

Woodland/Late Prehistoric and states that the ceramics from the site belong to the Middle Plains Woodland tradition. Johnson's interpretation of the cultural affiliation at site 39SH62 is in part predicated on a second radiocarbon date of approximately AD 800, which would place the occupation near the end of the Middle Plains Woodland period.[145] Hannus et al. counter that the points from the site are "indisputable evidence" of a classic Avonlea component, and that one point was removed from hearth fill, that was dated to AD 540 ± 120.[146] Hannus and Nowak believe the Avonlea complex represents a specialized hunting adaptation (primarily via entrapment and impoundment techniques) that was easily facilitated by badlands topography.[147] They conclude that Site 39SH62 may be multi-component based on the radiocarbon dates obtained by the NPS (AD 800) and the ceramics, which they agree should be classified as Middle Plains Woodland.

Late Plains Woodland (ca. AD 800-1200) occupation in the Fog Creek drainage is based on the evidence from site 39SH133. This site produced Late Plains Woodland artifacts (ceramics and projectile points) and a radiocarbon date of AD 1200 ± 250 that may fall between AD 800 and AD 1200 at the two sigma range. In discussing the projectile points from the site, Johnson suggests that the small corner-notched points from the site are distinct from typical Plains Village points that are "longer, more slender, and side-notched."[148] She speculates that with additional research and data it may be possible to define a Late Plains Woodland occupation in western South Dakota based solely on the presence of small corner-notched points. According to Johnson, the Late Plains Woodland ceramics from western South Dakota are "plain with little decoration and the vessels differ from the Middle Plains Woodland by having a more globular form with a slight neck."[149]

In addition to the various Woodland sites in the Fog Creek drainage, several other Woodland period sites are located elsewhere within or near the Park. Two of the more important sites are the Pinnacles site (39PN9) in the North Unit and the Long John site (39JK68), located outside the Park in Jackson County. The Pinnacles site has been excavated at various times over the past 45 years, beginning with Taylor's work in 1958.[150] The site, which appears to be a campsite and a bison jump/kill site, produced ceramics which Taylor suggested share affinities with the "La Roche tradition, Thomas Riggs, and Woodland."[151] A charcoal sample from Occupation Level B produced a date of AD 900 ± 50.[152] Outside the Park, site 39JK68, the Long John site, produced ceramics from two vessels that were collapsed within a hearth that produced a date of AD 750 ± 130.[153] The vessel fragments were reconstructed and one is conical in form with smoothed surface treatment and the other is cord-roughened with a globular form. Other sites assigned to the Woodland period within the Park include: 39PN1135, and the Johnny site (39JK4) at Cedar Pass. Several sites with grit-tempered and cord-roughened ceramics have been recorded in the vicinity of the Park in Pennington, Jackson, and Shannon counties.

Plains Village Tradition (AD 900-1600)

The Plains Village tradition, which begins after AD 900, is characterized by permanent or semi-permanent, horticultural settlements that often contain fortifications. The factors for the transition from Woodland cultures to the Plains Village tradition, and the timing

of this transition, are poorly known in this part of the state. In the eastern part of the state, studies on this transition have focused on the southern portion of the Middle Missouri and areas to the east such as the Great Oasis complex in southwestern Minnesota, northwestern Iowa, and portions of adjoining states. Whatever the causes and timing of the transition, it is clear that Plains Village cultures interacted with, and were influenced by, Mississippian cultures further to the east and south and possibly even Anasazi groups to the southwest. One significant difference with preceding Woodland groups is the importance of corn and other plant domesticates in the diet. These subsistence changes also necessitated changes in settlement patterns (i.e., increased sedentism, proximity to fertile alluvial soils), changes in ceramic technology (e.g., manufacturing ceramics capable of withstanding direct heat during food preparation), and other aspects of the material culture. Burial practices are poorly known for this period, but appear to be decidedly different than the preceding Woodland practice of burial mounds. The aforementioned changes in settlement and subsistence practices, material culture, social relations, inter-group relations, and burial practices associated with the Plains Village tradition had a profound effect on groups living in North and South Dakota, Nebraska, Kansas, and eastern Colorado and Wyoming. Archeological evidence suggests the success of the Plains Village system resulted in a greater American Indian population across the Plains than at any time before or after.[154]

In the western part of the state where rainfall is more problematic, the economic differences between people of the Plains Village tradition and the preceding Woodland period groups may be overstated. That is, evidence from this period in the western part of the state suggests that the economic activities of the Plains Village tradition were not dramatically different from the preceding Woodland groups or the nomadic hunters of the Late Prehistoric period prior to the introduction of the horse. Hunting of large game (bison, elk, deer, bear) mixed with some fishing and collecting wild plants and nuts continued to play an important role in subsistence and settlement practices and the seasonal round. Although no village sites or evidence of agriculture have been found in the Badlands area, several Badlands sites contain pottery believed to date to this period.

Changes in ceramic technology, vessel form, surface treatment, and decoration are the primary tool archeologists use to distinguish between these various cultures. The Plains Village tradition is composed of many cultural complexes that are distinguished, in part, on the basis of different ceramics. These differences are discussed below. It should be noted that projectile points are less time-sensitive during this 700± year period compared to preceding cultural periods, and therefore projectile points are less sensitive indicators of cultural affiliation or chronology during the Plains Village or subsequent periods. Nonetheless, it is during this period that arrow points completely replace dart and spear points, and by approximately AD 1400 the “Plains Side-Notched” point and the “Prairie Side-Notched” point become widespread across the Plains from Montana and Wyoming to Minnesota and Iowa. While most archeologists believe the Plains Side-Notched point diffused from east to west across the Plains, another possible source of the side-notched arrow point is the proto-Shoshone groups that moved eastward out of the Great Basin. The Shoshone manufactured the Desert Side-Notched point, which shares several morphological and technological attributes with the Plains Side-Notched point, and they

are known to have entered southwestern Wyoming by AD 1400. Intermountain ware ceramics, which are a distinctive flat-bottomed, poorly manufactured pottery style associated with the Shoshone, have been found with side-notched points in northeastern Wyoming and southeastern Montana from sites believed to date from AD 1500 to 1750.[155] Whether the Plains Side-Notched point diffused from the east or the west (or both), it was readily adopted into the existing material culture, and the point type became rather ubiquitous across the Plains during the period of AD 1300 to 1600.

The Plains Village pattern is believed to have spread to the Badlands and Plains of western South Dakota via the Middle Missouri River and its tributaries (Bad, Cheyenne, and White). The Missouri River trench has been the focus of extensive archeological studies for the last 60-70 years. As such a chronology has been established for the different cultures that occupied the area.[156] Hannus et al. provide the following dates for the Middle Missouri cultures: Initial Middle Missouri (ca. AD 1000-1300); Extended Middle Missouri (ca. AD 1100-1500); Initial Coalescent (ca. AD 1300-1600); Extended Coalescent (ca. AD 1400/1450-1650); and post-Contact Coalescent (AD 1650-1800).[157] It is important to note that these cultures overlapped both temporally and spatially. Thus, the movement of people as well as the exchange of ideas and material culture among these various groups resulted in both similarities and differences among the cultural groups that occupied the Missouri River trench and the adjacent Plains.

The initial village traditions in South Dakota apparently represent an *in situ* development or transition of pre-existing Woodland groups beginning somewhere between AD 800 and AD 1000. The first of these cultural groups is labeled Initial Middle Missouri and consists of the Great Oasis culture of southwestern Minnesota, northwestern Iowa, northeastern Nebraska, and southeastern South Dakota. Empirical evidence indicates this cultural group developed from a Woodland base with heavy influences from Mississippian cultures to the south and east. Initial Middle Missouri villages commonly occupy a prominent point on the landscape and are often surrounded by ditches or palisades. Houses associated with this phase were rectangular structures and excavated into a pit. The houses contained vertical posts with wattle and daub construction and thatched roofs. Initial Middle Missouri houses usually had a ramped entryway that extended beyond the house. Evidence from Great Oasis sites in Iowa and Minnesota indicate a broad-spectrum hunting and gathering subsistence base along with cultigens such as corn, sunflower, and squash. The material culture associated with these people is more complex than earlier Woodland groups. For example, Great Oasis groups relied on small triangular arrow points, a variety of lithic knives, scrapers, and drills, along with ground stone tools such as shaft abraders, axes, celts, mauls, grinding stones, and nutting stones. Bone tools and fishhooks were also part of the tool kit. Great Oasis pottery is distinctive from preceding Woodland pottery in that the vessels are more globular in shape and exhibit a more finely crushed grit temper and thinner vessel walls. The Great Oasis villagers overlap in both time and space with later Initial Middle Missouri groups. In an effort to explain the coexistence of these different groups, some archeologists have suggested that Great Oasis people were not corn growers, but only corn consumers and that they remained culturally conservative as other cultural changes occurred around them.

A second Initial Middle Missouri cultural group of eastern South Dakota is the Mill Creek culture (formerly called the Over Focus). The spread of Initial Middle Missouri cultures across the state may have been triggered by two factors. First, the spread of these cultures into the Plains region coincides with the Neo-Atlantic climatic episode, a cooler, more moist period that was conducive to the spread of agriculture onto the Plains. Second, Oneota cultures to the east and south were spreading westward and may have exerted pressure on existing groups to move west and north. Along these lines it is interesting to note that more Initial Middle Missouri villages are fortified and/or occupy a defensible position on the landscape. Houses were similar in shape to those of the Great Oasis phase, but are usually deeper and slightly larger with a ramped entrance at the south end. Large storage and refuse pits are a common feature within and outside houses and a large fire hearth is located near the center of the structure. Ceramics attributable to the later phases of the Initial Middle Missouri complex consist of bowls with handles in effigy form and flared and wedge-lipped rims. Surface treatment is typically smoothed over and cord roughened or plain and shoulders in some wares exhibit incised lines. The material culture of these groups is even more complex than the Great Oasis groups with a wider variety of chipped stone, ground stone, and bone tools. The expansion or spread of these cultures into the Plains environment imposed a number of pressures and constraints on these groups in addition to population pressures and perhaps some conflict with ever-expanding Mississippian groups to the east.

Another Plains Village tradition that influenced peoples in western South Dakota, and is contemporaneous with the Initial Middle Missouri and Extended Middle Missouri traditions, is the Central Plains tradition. The Central Plains tradition is composed of four different cultural complexes: Smoky Hill phase of southeastern Nebraska and northeastern Kansas, Upper Republican phase of south-central and southwestern Nebraska and north-central Kansas, the Nebraska phase of eastern Nebraska and western Iowa, and the Lower Loup Itskari phase of central Nebraska.[158] The groups that had the most profound effect on contemporaneous cultures in western South Dakota are the Upper Republican and the Lower Loup Itskari. Hannus et al. date these cultural complexes from AD 1000 to 1350 (Upper Republican) and AD 1100 to 1350 (Lower Loup Itskari).[159] Johnson asserts that Central Plains occupation within the vicinity of the Park is evidenced by a ceramic vessel recovered from 39SH68, 39SH72, and a site from the Angostura Reservoir.[160]

Zimmerman notes that the cultural origins of the Central Plains tradition may be derived from Mississippian cultures along the Arkansas River.[161] Conversely, archeologists have argued for decades that the presence of Middle Missouri occupations in the Badlands region was related to the periodic or seasonal use of the Plains by more sedentary groups from the east. Steinacher and Carlson present three hypotheses that provide plausible explanations for the appearance of Middle Missouri complexes and Central Plains traditions in the Badlands. They are as follows:

1. Camps were occupied on a seasonal basis by earthlodge-dwelling groups to the east that traveled into the area to exploit faunal, floral, lithic or other resources.

2. Camps were occupied by more easterly groups that abandoned their more sedentary lifeways in favor of residence on the High Plains as hunter-gatherers.

3. Camps were occupied by indigenous High Plains groups that adopted material culture elements from groups further to the east as a result of contact.[162]

As noted above, traditionally archeologists argued that the presence of Middle Missouri occupations in the Badlands region was related to the periodic or seasonal use of the Plains by more sedentary groups from the east. This model was easy to accept since numerous nineteenth century historical accounts document the Mandan, Hidatsa, and Arikara moving onto the Plains in the fall of the year to initiate communal buffalo kills prior to the onset of winter. However, more recent data from the Sand Hills area of nearby Nebraska suggest *in situ* groups may have borrowed material culture and other elements from trading partners to the east. Research is continuing in many areas to try to resolve these questions.

Around AD 1200 ± 50, a number of significant events occurred that had profound effects on the cultures within South Dakota and elsewhere on the High Plains. Between AD 1150 and AD 1300 the interior of the United States was influenced by significantly warmer and drier air masses (the Pacific climatic episode) that caused a deterioration of agricultural conditions in marginal environments, such as the Plains. This period of instability was followed by the Neo-Boreal episode. The Neo-Boreal period, often referred to as the "Little Ice Age," represents a period of global cooling and increased precipitation that contributed to a number of environmental, social, and demographic stresses that triggered inter-group hostilities as well as population movement among a number of groups across North America. The deterioration of environmental conditions also coincided with the collapse of Cahokia in the American Bottoms and the outward migration of people, ideas, and material culture to areas to the north and west. Together these events placed additional stresses on the extant populations of South Dakota and the adjacent High Plains.

Although data from a number of sites indicate the Central Plains tradition persisted into the late 1200s, beginning in the early 1300s the survivors of the Central Plains tradition become confined to the Missouri River in northeastern Nebraska and adjacent portions of southeastern South Dakota. Lehmer and Wood refer to the aforementioned events along the Missouri River trench in South Dakota as the "Coalescent tradition."[163] They argue that Coalescent tradition represents an amalgamation or blending of different cultural traits between the Central Plains tradition and the Initial Middle Missouri tradition. The Coalescent tradition, which dates from AD 1300-1650, is divided into an Initial phase from AD 1300-1600 and an Extended phase from AD 1400-1650. The Initial Coalescence refers to the movement of people of the Central Plains tradition (probably Upper Republican groups) out of Nebraska and into the Missouri River trench area of central and southern South Dakota. The material culture of these people suggests they began to move into South Dakota during the middle of the thirteenth century and were well established in the area by AD 1300 and AD 1400. Excavations at a number of Initial

Coalescent sites, primarily in the Big Bend region of the river between Chamberlain and Pierre, demonstrate the borrowing of a number of traits (direct stamping of ceramics, village location and fortification techniques, and elements of house construction) from Initial Middle Missouri populations.

However, by the middle of the fifteenth century (if not earlier), these cultures disappear from the archeological record. An example of population movement and inter-group hostility is the Crow Creek site in southeastern South Dakota. Evidence from the Crow Creek site indicates that at some time during the early fifteenth century, several hundred Central Plains villagers were massacred, presumably by warriors of the Extended Middle Missouri tradition. It is important to note that unlike the Central Plains villages in Nebraska, related villages in South Dakota during the late fourteenth and early fifteenth centuries were fortified with bastions and surrounded by ditches, clearly indicative of inter-group hostility.[164] The continued deterioration of environmental conditions during the "Little Ice Age," increased pressures for arable land, population pressures, and the constant movement and interaction of people with different cultural backgrounds led to a period of relatively rapid cultural change, often marked by inter-group hostilities.

While Initial Coalescent groups were becoming established in southeastern South Dakota, Extended Middle Missouri groups developed in north-central South Dakota and south-central North Dakota. It is originally proposed that Extended Middle Missouri groups represent Initial Middle Missouri groups that were displaced by Initial Coalescent groups and moved northward.[165] Zimmerman notes similarities with Initial Middle Missouri groups in terms of house patterns and village locations, but he also notes differences, especially in terms of ceramic style and decoration.[166] As seen at some Initial Coalescent sites, evidence of inter-group warfare or hostilities has been noted at several Extended Middle Missouri sites.[167] Debate continues over the origins of the Extended Middle Missouri culture. Some archeologists believe these people have the same parent stock as the Initial Middle Missouri groups (i.e., southwest Minnesota, northwestern Iowa, and eastern South Dakota). They argue that these people followed a chain of glacial lakes northward into present-day North Dakota and then subsequently moved southward into northern and central South Dakota during the late 1300s and early 1400s.[168] Others suggest that the Extended Middle Missouri cultural pattern developed directly out of the Initial Middle Missouri cultural pattern and represent displaced Initial Middle Missouri groups.[169]

Just as the Extended Middle Missouri may be an outgrowth of the Initial Middle Missouri, it appears quite likely that the Extended Coalescent is an outgrowth of the Initial Coalescent. Extended Coalescent groups appear to have occupied the central portion of the Middle Missouri trench as well as the White, Cheyenne, and Bad rivers to the west. The material culture between Initial and Extended Coalescent groups is similar, and differences between the two can be attributed to development trends that can be traced back to their roots in the Initial Coalescent period. However, unlike the large more nucleated villages of the Initial Coalescent period, the villages of Extended Coalescent groups are smaller but more numerous and more widespread across the landscape.[170] Although circular earthlodges were the common or ideal house pattern, the Extended

Coalescent period is also marked by a number of other house patterns that are unlike the highly structured circular earthlodges associated with the Initial Coalescent period. Surprisingly, village fortifications are relatively rare, compared to earlier periods, but fortified villages have been noted along the northern and southern frontier of the Extended Coalescent range. The presence of fortification ditches at some Extended Coalescent villages suggests hostilities with Oneota groups (or perhaps proto-Pawnee groups) to the south and Extended Middle Missouri groups to the north.[171] The ceramic tradition of Extended Coalescent groups is easily distinguished from Initial and Extended Middle Missouri ceramics. For example, Extended Coalescent ceramics typically have less temper, exhibit thinner vessel walls, with plain or simple stamped exteriors and straight to curved rims. Deeply curved and flared rims do occur, but are less numerous and of a different shape and configuration to comparable flared rims of the Initial and Extended Middle Missouri traditions.

As noted previously, Initial Middle Missouri ceramics are present in and around the Badlands. Some archeologists have suggested there was a hiatus in the occupation of the Badlands area from AD 1250-1500, i.e., during the Pacific climatic episode when warmer and drier conditions prevailed, followed by the onset of significantly cooler and more moist conditions during the Neo-Boreal (Little Ice Age) episode.[172] Hannus et al. have suggested that the "hiatus model" may need to be reconsidered in light of recent findings by White that environmental conditions during this period of time were not as severe as originally proposed.[173]

Archeological evidence suggests that lithic resources of the Badlands area were exploited during expansion of Extended Coalescence groups onto the Plains, and Johnson maintains that Extended Coalescent sites are the most numerous site type in the region during the Late Prehistoric period.[174] Johnson reports that Extended Coalescent sites or components have been identified at 39PN50 near Fog Creek, south of Fog Creek at the West Horse Creek Quarry site, Angostura Reservoir, and the Pine Ridge area of northwestern Nebraska.[175] Beaubien and Hannus et al. also report Extended Coalescent sites or components have been identified at 39PN10, 39PN11, 39PN32, and 39JK2, within the Park as well as sites 39PN54 and 39PN590 just outside the Park boundaries along Highway 44 in the vicinity of the Badlands Wall and the White River.[176]

Site types represented by the material remains from these sites suggest multiple uses ranging from seasonal hunting camps to semi-permanent occupations where corn agriculture was practiced.[177] Finally, Johnson and Hannus et al. caution that ceramic assemblages that only contain body sherds can not be considered diagnostic and attempts to determine cultural affiliation should be avoided unless rim sherds are present.[178] For example, cord-marked and cord-roughened body surfaces are present during the Middle and Late Woodland, the Initial Middle Missouri, and Central Plains traditions. Likewise, simple stamping is a common body treatment of vessels among Initial and Extended Coalescent, Extended and Terminal Middle Missouri, and Dismal River groups.[179] Johnson and Hannus et al., among others, have suggested several avenues of research that could provide insight into the ceramics and the ceramic bearing occupations in the vicinity of the Badlands. Hannus et al. present a table of post-Woodland ceramic sites

within the Park.[180] The table identifies 29 sites, 15 of which have an "unknown" or at least an uncertain cultural affiliation. Of the 14 remaining sites, 25 distinct components have been identified in the table. These include Initial Middle Missouri (7), Central Plains (2), Extended Middle Missouri (1), Terminal Middle Missouri (1), Extended Coalescent (3), Extended Coalescent/Post-Contact Coalescent (3), Post-Contact Coalescent (4), LaRoche (1), and Dismal River (2).

Post-Contact Coalescent or Protohistoric (AD 1600-1775)

The extensive population movement that typified the Plains region from AD 1300-1600 continued during the protohistoric period. The earliest accounts of European explorers into the Southern Plains was the (in)famous exploration by Francisco Vasquez Coronado in 1541 and his search for the lost cities of gold (*El Dorado*). Coronado and his troops traveled as far as the Arkansas River in central Kansas where they encountered the "Quivira" people, presumably a Caddoan-speaking group, most likely related to the Wichita, or possibly the Pawnee. The year 1541 also saw Hernando DeSoto cross the Mississippi River into Arkansas where he spent the better part of the next two years wandering around Kansas, Oklahoma, and Texas. DeSoto, like Coronado, was interested in finding wealth and fame, and like Coronado and other conquistadors before them, their journeys proved to be failures. Although both explorations lost many men along the way, the whereabouts of many individuals were never accounted for by the historical records. It is likely that many individuals elected to stay with native tribes they had encountered along their journeys. It is from these early encounters that American Indian tribes in the Plains were first confronted by Europeans and European culture.

By the mid to late 1600s, the diffusion of European trade goods (iron axes, hoes, and knives; copper and brass cooking pots and pans; glass trade beads; whetstones; and other common trade items), horses, and ideas spread across the Plains from both the east and the south. By the end of the seventeenth century, European fur traders (primarily French but also English and Scottish) began to make inroads into the Plains at the same time Indian groups east of the Mississippi (especially in the Great Lakes region) were being displaced further and further to the west in an effort to avoid European diseases, warfare (both with other Indian groups and Europeans), and increasing population pressures. Along the Missouri River, contact between agricultural Indian village groups and Europeans resulted in a hybrid culture that is referred in the archeological record as the Post-Contact Coalescent period. This period, which is generally dated from AD 1600 to 1775, is often called the Protohistoric period. The Protohistoric period refers to a time prior to direct contact with Europeans when American Indians had possession of European goods and horses, but historical accounts of these people never existed.

The large village complexes of the Extended Coalescent tradition in South Dakota and the Terminal (Extended) Middle Missouri villages in North Dakota ultimately developed into the historic tribes known as the Arikara in South Dakota and the Mandan and Hidatsa in North Dakota. These groups were the first observed by early European explorers when they entered South Dakota. In South Dakota the diffusion of ideas and material goods occurred prior to the 1700s, but the first documented European contact with the Arikara came in the early 1700s with fur trapping expeditions like La

Verendrye's. By this time, many Siouan and Algonquian groups in the east had been forced or voluntarily relocated to the Upper Midwest, and some of these groups made their presence known to Plains tribes within the next few decades. For example. Siouan-speaking Oneota groups were moving westward and northward from Iowa, Nebraska, and Minnesota at this time, it is possible that Post-Contact Coalescent villages along the Missouri River were fortified against incursions of one or more Siouan groups.

American Indian groups believed to have occupied and/or frequented western South Dakota during the 1600s and early 1700s include the Plains (or Dismal River) Apache, Comanche, Kiowa, Crow, and Shoshone. The appearance of the horse, which both migrated and was traded northward from the Southwest, marks the beginning of the Protohistoric period in western South Dakota. Although horses were introduced into the Plains around 1650, they did not reach the Badlands until approximately 1730.[181] It is at this time that fur trapping and fur trading expeditions also began to push westward into the Badlands area.

Crow (AD 1500-1700)

Archeologists and ethnologists believe that the Siouan-speaking Crow Indians evolved from Hidatsa groups that occupied Extended Middle Missouri villages in North Dakota. Early Crow pottery is widely attributed to the Mandan/Hidatsa ceramic tradition based on its globular shape, distinctive shoulders, flaring rims, and similarities in incised decorative motifs. Based on the presence of ceramics in the Mandan/Hidatsa tradition, early Crow sites (AD 1400s and 1500s) have been reported from northwestern South Dakota, southeastern Montana, and northeastern Wyoming.[182] The early Crow sites in Wyoming have been dated to AD 1420 and 1500 at the Big Goose Creek site, AD 1580 and 1610 at the Piney Creek site, and AD 1720 at the Medicine Lodge Creek site.[183] These dates are consistent with the proposed linguistic separation between Crow and Hidatsa.[184] However, Johnson argues that historic Crows did not make pottery and that the ceramics attributed to the Crow is within the range of Middle Missouri styles.[185] Although the above may be true, it is also possible that the Crow stopped making pottery once they gave up their agricultural roots and adopted a fully nomadic, equestrian lifestyle predicated on the hunting of bison.

If the early separation of the Crows and Hidatsa is accepted, then the movement of Crow groups onto the Plains from the Middle Missouri region coincides with the Neo-Boreal climatic episode and may indicate that the environmental, social, and population stresses forced these groups westward where they adopted a more mobile hunting and gathering lifestyle. The cooler and moister conditions of the Neo-Boreal episode had a deleterious effect on agriculturally-based societies, especially those in marginal environments (like the Mandan and Hidatsa) that lived on the periphery of the maize growing season. Conversely, these same climatic conditions proved beneficial on the Plains where increased precipitation promoted the growth of lush grasses and increased the carrying capacity of buffalo. The increase in bison herds at this time coupled with the arrival of the horse and the various environmental and social stresses occurring to the east permitted many agricultural groups to move onto the Plains and adopt a highly mobile lifestyle focused on the exploitation of bison. By the time of European contact with the

Crow in the early 1800s, the Crow were equestrian bison hunters living along the Yellowstone River and the Bighorn Mountains.

Dismal River (Plains) Apache (AD 1625-1725)

The Dismal River (or Plains) Apache represent a group of Athabascan speakers of the NaDene linguistic group that archeological evidence suggests occupied western Nebraska and adjacent portions of South Dakota, Wyoming, and Colorado for roughly 100 years between AD 1625 and 1725. Based on his work at sites in western Nebraska and northeastern Colorado and Champe's work at Ash Hollow Cave,[186] Gunnerson (1960) maintains the Dismal River phase represents the last manifestations of the Plains Apache tradition in the region.[187] Gunnerson recorded Plains Apache ceramics in association with Plains side-notched and tri-notched points at sites, but no village sites have been recorded for these people. Subsistence data from these sites suggest these people primarily subsisted on bison hunting, practiced limited agriculture, and lived in semi-permanent dwellings along the North Platte River and its principal tributaries. Dismal River components have been recorded from tipi ring sites, rockshelters, and open campsites both on top of buttes and at the base of buttes, in addition to smaller hamlets along river drainages. Archeological and ethnohistorical data suggest the Dismal River Apache developed into the Kiowa-Apache, who are known to have lived in the land between the two Platte rivers in the early 1700s.[188]

Although the Kiowa-Apache were not politically connected to the various Apache groups known from the Southern Plains and the Southwest, linguistic data suggests a separation from Jicarillas and Lipans (Southern Plains) Apaches by 1750 or perhaps somewhat earlier. Brant has speculated that the Dismal River Apache (later to become Kiowa-Apahce) became separated from the southern Apache groups by the incursion of Comanche groups into the area along the Arkansas River of Colorado and Kansas in the early 1700s. After their separation from other Apache groups, the Kiowa-Apache joined the Kiowa at some time during the 1700s, at which time the two groups became linked culturally, economically, and politically.

Comanche (AD 1700-1750)

The Comanche are Shoshonean speakers (one of two Uto-Aztecan linguistic groups on the Plains) whose language is very similar to the Wind River Shoshone (Plains Shoshone) in northwestern Wyoming. The Comanche were first recorded in the Santa Fe-Taos region of New Mexico in 1706 where they were accompanied by Utes.[189] The fact that the Comanche and the Wind River (or Plains) Shoshone speak a mutually intelligible language suggests that these groups diverged during the late protohistoric period, perhaps in the headwaters region of the North and South Platte rivers of southeastern Wyoming and northeastern Colorado.[190] During the early eighteenth century, the Comanche bands were entrenched along the Arkansas River valley in Colorado and Kansas, and by the mid-eighteenth century they had expanded their range to include portions of western Oklahoma, south-central, the Texas panhandle, and eastern New Mexico.

The Comanche, like other protohistoric Plains tribes, were adapted to an equestrian lifestyle based on the exploitation of bison. Little is known about the material culture of

the protohistoric Comanche from an archeological perspective, and what little is known of their material culture is derived primarily from historic burials. During the historic period the material culture of the Comanche, like other tribes on the Southern Plains, appears to be heavily influenced by trade goods from Spain and Mexico. Historically, the material culture of the Comanche was very similar to that of the Kiowa and Kiowa-Apache, but archeologically speaking it is difficult, if not impossible, to distinguish one group from another. As noted, the prehistory of the Comanche is poorly known, but we do know that their territorial range overlapped with many other tribes including the Arapaho, Cheyenne, Kiowa, and Apache. Late Prehistoric sites in the projected ancestral lands of the Comanche (i.e., western Nebraska, northeastern Colorado, and southeastern Wyoming) are most often attributed to the Dismal River (Plains) Apache. In light of the extensive overlap of the aforementioned groups, the broad territorial ranges covered by these nomadic equestrian tribes, and the similarities in material culture, it is possible that many sites previously identified as "Dismal River Apache" may actually belong to other groups such as Kiowa, Comanche, Shoshone, Arapaho, Cheyenne, and Ute.[191]

Kiowa and Kiowa-Apache (AD 1670-1800)

The Kiowa and the Kiowa-Apache represent two distinct linguistic groups that for all intents and purposes joined culturally, politically, and economically. The Kiowa are remotely tied to Tanoan-speaking Pueblo groups of the Southwest, while the Kiowa-Apache, as noted above, were Athabascan speakers. The origin myths of the Kiowa place them along the Yellowstone River in Montana in the late 1600s.[192] At some later time, perhaps as early as the 1690s, the Kiowa migrated south and east before settling in the Black Hills area in the 1730s. Later they migrated into the Arkansas River valley in Colorado and Kansas. From there they subsequently moved further south to western Oklahoma and Texas. At some point in their southern migrations, perhaps in the area between the Platte rivers, the Kiowa joined forces with the Kiowa-Apache.

Historical records tend to support some of the Kiowa migration myth, as they are noted as living in the Black Hills area in the 1730s and in 1742 by the LaVerendrye brothers. Cheyenne traditions place the Kiowa in the northwestern Wyoming (Tongue, Powder, and Little Yellowstone rivers) during the early to mid-eighteenth century.[193] By the late 1700s, the Kiowa (and Kiowa-Apache) were living in the area between the North Platte and Arkansas rivers, but by the 1820s and 1830s, they had moved onto lands south of the Arkansas River in western Oklahoma and Texas, perhaps in response to Lakota Sioux moving into and controlling much of the area between the Arkansas River and the Black Hills. From an archeological perspective, little is known of the Kiowa as a prehistoric manifestation, and like the Comanche, their material culture is primarily known from historic burials and not from occupation sites. Few known Kiowa sites have been excavated, but without historical documentation, it would be difficult to distinguish historic (or protohistoric) Kiowa, Kiowa-Apache, or Comanche sites.[194]

Omaha and Ponca (AD 1600-1800)

Omaha and Ponca tribes represent Siouan-speakers that probably migrated into eastern Nebraska during the late 1600s. These groups were agricultural villagers, probably derived from an Oneota stock that, according to their oral history, migrated to

northeastern Nebraska by AD 1700.[195] For many years archeologists believed that Redbird phase sites in southeastern South Dakota and northeastern Nebraska represented the protohistoric Ponca, given that Redbird sites were located in the heart of the Ponca territory. However, based on more recent data, this interpretation may be in error, and it is now hypothesized that the Redbird sites are related to either Arikara or Pawnee incursions into this part of the state during the 1600s.

Lower Loup/Pawnee and Arikara (AD 1400-1800)

Archeologists believe the Pawnee migrated onto the Plains from the southwest sometime between AD 1200 and 1300. By the middle of the sixteenth century, the Pawnee territory extended from the Niobrara River in Nebraska to the Arkansas River in Kansas. Ceramics attributed to proto-Pawnee occupations have been recovered from northwestern Nebraska and adjacent portions of South Dakota. The Pawnee and the Arikara (also known as the Ree), are Caddoan speakers; the former are linked archeologically to the Upper Republican and Lower Loup phases of central Nebraska and Kansas. Using the direct historical approach, Wedel and other archeologists traced the ancestry of the Pawnee Indians and demonstrated that they developed from the Lower Loup phase, which is dated to the 1600s.[196] The archeological record suggests the Pawnee and Arikara were primarily agriculturalists that migrated up the Missouri River prior to AD 1600, and shortly thereafter the Skidi Pawnee and the Arikara separated. The Arikara were able to produce a large surplus of maize and other domestic crops which they traded to the Kiowa, Kiowa-Apache, Comanche, Arapaho, and Cheyenne for hides, fur, dried meat, horses and guns. Their surplus production and their location along the Missouri allowed the Arikara to gain control of a large trading network during the seventeenth century.[197] During the eighteenth century, as many as 10,000 Arikara may have lived along the Missouri River between Chamberlain and Mobridge. French traders established trade relations with the Arikara by the middle of the 1700s.

The material remains from a known early 1800s Pawnee earthlodge were compared to the material remains of a Lower Loup phase site in Nance and Colfax counties. The similarity in ceramics and other artifacts demonstrated a direct relationship between the two groups. However, Ludwickson notes, "…a break in the direct historic chain of evidence occurs between 1400 and 1600."[198] One interpretation of Pawnee oral history relates that they arrived into Nebraska from the south (possibly Kansas) around 1600 and quickly adopted a Plains oriented material culture from the Mandans and Hidatsas.

Historical accounts of Coronado's expedition into Kansas in 1541 suggest that he met with a delegation of Pawnee either from or living near the village of Quivara. This account would corroborate the Pawnee oral history.[199] Le Seuer's 1701 map of the Missouri and Upper Mississippi valleys depicts several Pawnee villages in the vicinity of the Lower Loup and Platte rivers in central Nebraska. During this period, the Pawnee of eastern and central Nebraska lived in earthlodge villages and practiced an agricultural lifestyle that was routinely supplemented with bison. Pawnee hunting camps (and perhaps trading camps) have been recorded in western Nebraska and the Nebraska Sandhills.

Plains Shoshone (AD 1500-1750)

As noted previously, Shoshonean speakers (Uto-Aztecan family) are known to have migrated into southwestern Wyoming by the 1400s, and the recovery of Intermountain ware ceramics from sites in northeastern Wyoming and southeastern Montana that date to the 1700s (or earlier) attest to the fact that they continued to migrate eastward.[200] Hultkranz and Smith report that the Plains (Prairie) Shoshone ranged as far east as the Black Hills.[201] These Shoshone groups share several traits typical of other Plains tribes including tribal buffalo hunts in the fall, tribal organization with a chief, and the Sun Dance ceremony.[202] The appearance of the shield-bearing warrior motif, certain sun motifs, and other rock art motifs in Wyoming, South Dakota, and other parts of the Plains has been attributed to the eastward movement of the Plains Shoshone as well.

Cheyenne and Arapaho (AD 1750-1800)

Both the Cheyenne and Arapaho are Central Algonquian-speaking groups. According to migration myths and oral traditions, these groups lived in the region north of the Great Lakes and the lakes region of northern Minnesota, respectively, during the late 1600s and early 1700s.[203] Historical maps and accounts demonstrate the westward movement of these groups during the 1700s. By 1794 the French fur trapper Jean-Baptiste Truteau (also Trudeau) reported the Cheyenne were fully developed equestrian bison hunters that lived west of the Missouri River. He also reported the Arapaho were equestrian bison hunters that lived along the headwaters of the South Fork of the Cheyenne River in eastern Wyoming and southwestern South Dakota. The following year, Truteau reported that the Cheyenne (also equestrian bison hunters) lived west of the Arikara villages (i.e., west of the Missouri River) along the Cheyenne River in present-day South Dakota. Other accounts suggest the Cheyenne were still agriculturalists and lived in villages along the Missouri River at this time. Somewhat later in 1805, the Lewis and Clark expedition noted the Cheyenne were a nomadic group living near the Black Hills. Cheyenne oral history suggests that prior to becoming equestrian bison hunters in the Black Hills region, the Cheyenne were horticulturalists living in Minnesota and North Dakota,[204] and Grinnell reports that the Cheyenne began their westward migration during the protohistoric period.[205] Grinnell further reports that the Cheyenne established several sedentary villages along the Missouri River between the Mandans and Arikara before abandoning their agricultural lifestyle for a nomadic existence on the Plains hunting bison.

Archeological evidence for sedentary, horticultural Cheyenne villages along the Missouri River has not been verified, but Hanson suggests that the Biesterfeldt site, a fortified earthlodge village in eastern North Dakota may represent a late eighteenth century Cheyenne occupation.[206] Historically, the horticultural Cheyenne appear to have been driven from their homelands by the Ojibway during the late eighteenth century. If the above are true, then it presents the problem of how nomadic, bison-hunting Cheyenne were living in the Black Hills in 1794. Hanson has suggested that the Cheyenne must have migrated en masse from their homeland in the late 1700s and adopted an equestrian, bison-hunting lifestyle within less than 20 years.[207]

The historical and archeological record of the Arapaho is even sparser than that of the Cheyenne. The Arapaho and the closely related Gros Ventres became geographically, if not culturally, split by the early to mid 1700s, with the Arapaho living near or south of the Missouri River in Montana and the Gros Ventres living north of the Missouri River in the vicinity of the Saskatchewan River. Some scholars believe that these linguistically related groups were semi-sedentary horticulturalists that lived in the Red River region of North Dakota and Minnesota. At this time the origins and population movements of these groups remains obscure, and archeologically, these groups are invisible.[208] That is, the prehistoric origins of the Arapaho and Gros Ventres remain as unknown today as they were 100 years ago when Kroeber noted that "…nothing is known of the origin, history, or migrations of the Arapaho."[209]

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