Contents

The Sheyenne River Study Unit

Fern E. Swenson and Amy C. Bleier
2016

The Sheyenne River Study Unit (SRSU) is located in eastern North Dakota. The SRSU is adjacent to the Northern Red River Study Unit (SU) to the east and north; the Southern Red River SU to the south and southeast; and to the James River, Souris River, and Southern Missouri River SU to the west.

Description of the Sheyenne River Study Unit

The SRSU covers 10,996 mi² including the Devils Lake basin. Figures 12.1 and 12.1A illustrate the SU and several principal tributaries within it. The river lies entirely within North Dakota. All or parts of McHenry, Ransom, Richland, Cass, Barnes, Stutsman, Steele, Griggs, Foster, Eddy, Nelson, Walsh, Ramsey, Cavalier, Towner, Rolette, Benson, Pierce, Sheridan, and Wells counties are in the SRSU. Table 12.1 is a complete list of the townships in the SU.

Physiography

The SU is primarily in the Drift Prairie physiographic zone of the Central Lowlands physiographic province (Bluemle 1979:4). The Drift Prairie is a glaciated plain with features resulting from Late Wisconsinian glacial action. The land is characterized by gently rolling hills, low ridges, swales, and prairie pothole lakes and wetlands (Kresel 1961:106; Simpson 1929:8). Devils Lake, Stump Lake, and Lake Jessie occupy proglacial valleys or channels cut by meltwater runoff (Klausing 1968:7; Simpson 1929:9).

The southeastern part of the SU is in the Red River valley physiographic zone (Bluemle 1979:4). The Red River valley is a relatively featureless plain resulting from the sedimentation of glacial Lake Agassiz. Terrain is essentially flat with elevation varying only a few meters over the expansive lake bed except where Holocene drainages have downcut.

The Sheyenne trench can be divided into three portions of different ages. The western-most portion is the oldest segment. This area originated as a meltwater channel with runoff from the Souris ice lobe into a proglacial lake located in the vicinity of Nelson, Eddy, and Griggs counties (Brophy and Bluemle 1983:176). A broad, shallow braided channel characterizes this section. This drainage pattern persisted until about 12,000 BP, at which time the ice had retreated and the channel was extended to the south, draining into glacial Lake Dakota (Haury and Schneider 1986:16-17).

Figure 12.1: Map of the Sheyenne River Study Unit.

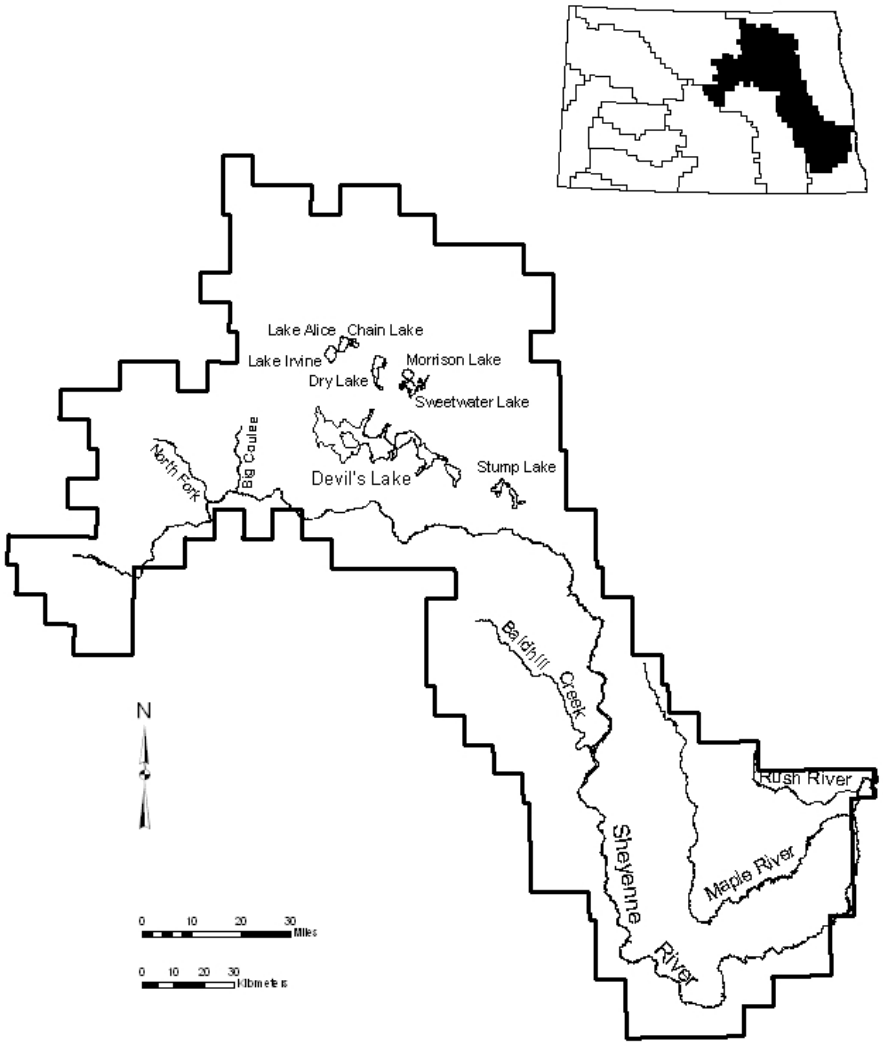

Figure 12.1A: Shaded Relief Map of the Sheyenne River Study Unit.

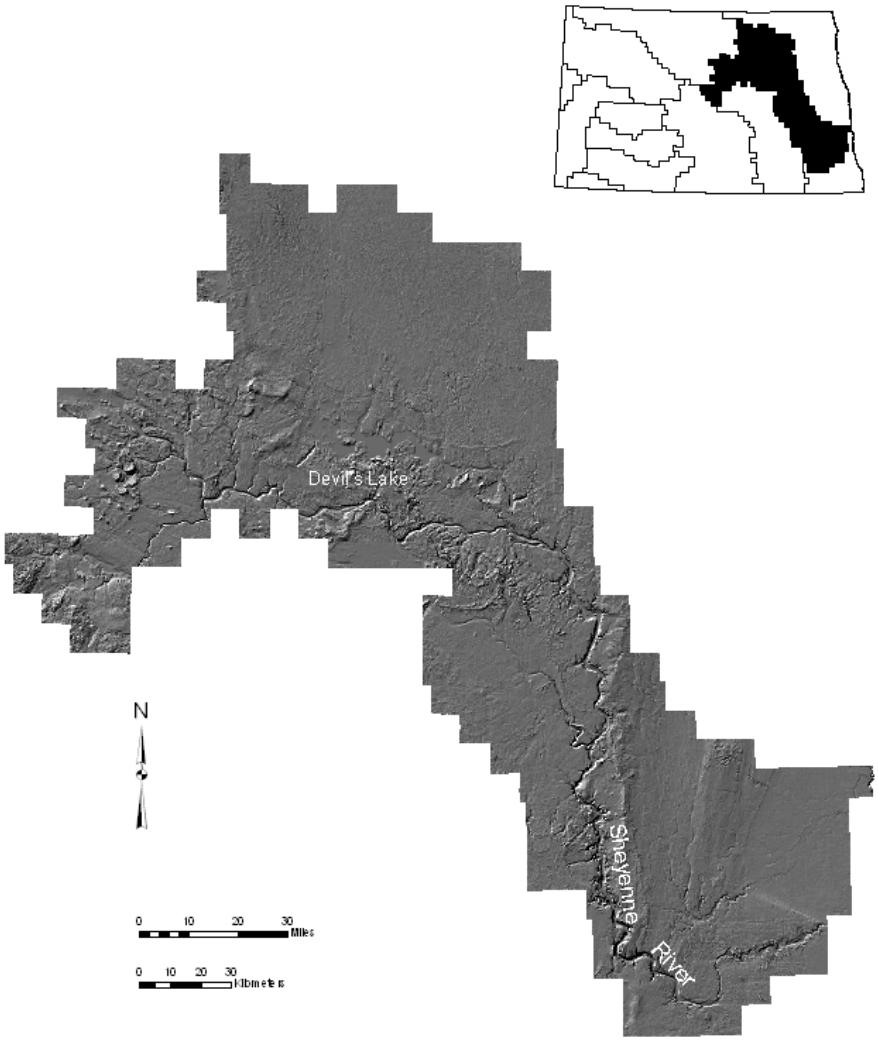

Table 12.1: Townships in the Sheyenne River Study Unit.

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Continued ice retreat resulted in the formation of glacial Lake Agassiz by 11,500 BP. At that time the river flowed eastward onto the lower land surface, draining into the lake. Concurrently, glacial lakes Souris and Minnewaukan began to drain into the Sheyenne. The influx of water capacity and sediment changed the channel by increasing its carrying capacity and causing deep trenching. The sediments it carried were deposited as it entered Lake Agassiz, creating the Sheyenne delta (Brophy and Bluemle 1983:179; Haury and Schneider 1986:17).

A number of shifts in the position and rate of flow of the Sheyenne River were caused by periodic advances and retreats of glacial ice. The level of Lake Agassiz dropped for the last time ca. 9500-9200 BP. At that time the Sheyenne River extended its course northeastward, eventually crossing the delta and reaching the old lake floor. As it flowed across the lower lake floor it trenched the delta (Brophy and Bluemle 1983:185). The modern Sheyenne River follows this course across the lake plain flowing northeast to the Red River (Haury and Schneider 1986:17).

Drainage

The headwater of the Sheyenne River is in Sheridan County. The river drains into the Red River. The Sheyenne River is set in a deep and wide entrenched valley. The valley was formed by water flowing along the front of the ice sheets during the Late Wisconsinan period. Many of the morphological features of the modern channel were created by the large volumes of water and sediment which was dumped into the river from Lakes Souris and Minnewaukan or by changes in gradient as its course was extended (Haury and Schneider 1986:17). The width varies from 0.8 kilometers to 2.5 kilometers with an average of 1.2 kilometers.

Drainage within the Devils Lake basin is closed and nonintegrated when lake levels are normal. At 1,445 feet the waters of Devils Lake overflows into the Stump Lake system. Then at 1,457 feet the combined waters of Devils Lake and Stump Lake overflow into the Sheyenne River (Gregg 1993).

Climate

Climatic changes since ca. 10,000 BP have been discussed in the paleo-environmental studies by Clayton et al. (1976) and Bluemle (1979:77-78) for the Drift Prairie region. Also, a sedimentary history of Devils Lake is presented by Callender (1968:246-258) indicating the fluctuation of the level of Devils Lake during the Holocene. Periods of high human population can be correlated with periods of high water (Gregg 1993:2.3). Along the north shore of Devils Lake, Bluemle (1991:10) identified buried soils overlain by beach deposits. Gregg (1993) summarizes this aspect of the study by stating:

> These are interpreted to represent periods of stable lake level punctuated by increased lake level and overflow to Stump Lake and the Sheyenne River during stages of high water in the basin. He reports four episodes of

soil development dated between 2000 and 1500 BP. These correlate temporally with the Late Plains Archaic-Middle Plains Woodland peak of cultural developments depicted in Figure 2.2. A fifth soil date indicates correlation of mesic climatic conditions with the Early Plains Village period represented by the spike in the graph at about AD 1200.

All of North Dakota is defined as having a subhumid continental climate characterized by wind and extreme temperatures. Winters are long and cold, while summers are short with warm to hot temperatures and subhumid conditions (Omodt et al. 1966:4-5). Prior to Euro-American intervention, spring flooding, especially in the Red River valley, could be extensive.

In Ramsey County the average winter temperature is 8 degrees Fahrenheit. In the summer the average temperature is 67°F. Total annual precipitation is 16.58 in, of this 75% usually falls in the months April through September. The average seasonal snowfall is ca. 37 in (Bigler and Liudahl 1986:3-4).

Landforms and Soils

The primary landforms in the SRSU include floodplains, terraces, beach ridges, valley walls, alluvial/colluvial fans, and upland plains (Bluemle 2000, 2016). Soils found on these landforms formed under a variety of pedogenic factors.

Natural Resources Conservation Service (NRCS) official soil survey resources are available online (NRCS 2016a, b, c). The Web Soil Survey in particular may be useful, as it has replaced the traditional county soil survey books.

- Electronic Field Office Technical Guide: https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/technical/fotg/
- Soil Data Mart: http://sdmdataaccess.nrcs.usda.gov/
- Web Soil Survey: https://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/survey/

Flora and Fauna

The Drift Prairie is dominated by tall grasses with some wooded areas along portions of the older terraces, valley slopes, and floodplain along the Sheyenne. In the vicinity of the small lakes and ponds in the uplands, marsh wetlands are present (Simpson 1929:9, 20; Thompson and Joos 1975:34). The dominant native plant species of the prairie are needlegrass and slender wheatgrass. Sage and wolfberry are also common in the uplands (Johnson et al. 1974:20-28). Fruit-bearing shrubs such as chokecherry, plum rose, and currant are present. Trees include primarily American elm, green ash, burr oak, and basswood (Simpson 1929:20; Johnson et al. 1974:29).

Bison, elk, pronghorn antelope, foxes, coyotes, wolves, jack rabbits, and ground squirrels historically were represented in the grasslands. Moose and caribou also may be present at times. The forests supported white-tailed deer, bear, raccoons, wolf, wildcat, martin, mink, skunk, and cottontail rabbits. Riparian areas are the habitat for beaver,

muskrat, shore birds and migratory waterfowl (Johnson et al. 1974:31-38; Simpson 1929:9; Thompson and Joos 1975:86-90). Raptorial and song birds are common. Game birds include wild turkey, grouse, prairie chickens, and mourning doves. Northern pike, perch, and freshwater mussels occupy the river (S. Fox 1984:14).

Other Natural Resource Potential

The biotic diversity provided a wide array of resources for food, fuel, shelter, and water. Glacial erratics are abundant. The large amount of rocks in the glacial till had broad utility for stone technologies. Large cobbles and small boulders were often used as weights to hold down tipi covers. Granitic raw materials were used to make ground and pecked stone artifacts. Rocks were also frequently used in stone boiling and sweat bathing. Knappable stones are found in the stream gravels including Swan River chert (SRC), Tongue River silicified sediment (TRSS), and cherts.

Overview of Previous Archeological Work

Archeological work in this SU has primarily been funded due to federal cultural resources legislation and regulations.

Inventory Projects

As of 5 August 2015, there were 841 archeological sites and 696 archeological site leads and isolated finds in the state computerized site data file for the SRSU. With its 10,996 mi² area, there is one site recorded for each 13.1 mi². Only 4% of the SU has been surveyed. The low density of sites in the SRSU as well as the others in eastern North Dakota is a reflection primarily of less survey in comparison with western North Dakota.

Table 12.2 summarizes data coded on the site forms for property types by landforms. Totals vary due to incompletely coded data or uncoded data for some variables, and because multiple variables are recorded (e.g., a site might have multiple components or be situated on more than one landform).

Cultural material scatters, mounds and graves are well represented. A high priority is to identify the cultural/temporal affiliations of more of these property types in this SU (Table 12.3). Several mound sites have been attributed to Middle Woodland, Sonota/Besant, Devils Lake-Sourisford, and Late Prehistoric.

One Paleo-Indian (Paleo) site has been recorded for this SU (Table 12.3). Additionally, a number of Paleo spearpoints including Folsom, Agate Basin, Hell Gap, and Browns Valley have been reported in private collections (Haury and Schneider 1986:39; Johnson 1962:161; Schneider 1982). In addition, Early Archaic to historic period sites are represented. It is clear however, that cultural/temporal affiliation has not been recorded in the site file data base in as much detail as there might be.

Table 12.2: Feature Type by Landform for Recorded Archeological Sites within the Sheyenne River Study Unit, 5 August 2015.

	Cairn	Conical	CMS	Eagle	Village	Earth	Fort	Grave	Hearth	Jump	Mound	ORF	Pit	Quarry	Art	Circle	Trail	Misc	TOTAL
Alluvial fan			3			1										3			7
Beach/River bank			17						1										18
Beachline (glacial)			8					2			4		1						15
Butte								2			2					2			6
Draw	2		12			1		2		3	1	1				2		2	26
Floodplain			87			2	1	1			4					2		1	98
Hill/Knoll/ Bluff	27		104	3	1	4	2	72	3	1	95	11	10		1	31	2	3	370
Island								3			1							2	6
Lacustrian plain			7																7
Other	4		8					1	1		5	2				4			25
Ridge	10		26	1		1		11			16	4	3		1	24			97
Saddle	3		3					1			1	1				2			11
Sand bar			1																1
Sand dune			8																8
Spur	12		6								2	4				19			43
Swale			7													1			8
Terrace	4	1	147		3	6	2	19	9	1	22	7	3	1		17	1	2	245
Upland Plain	1		56				1	10			29	1	2			6		2	108
Valley wall foot slope	2		32		2	3		16	1		14	1	1			2			74
TOTAL	65	1	532	4	6	18	6	140	15	5	196	32	20	1	2	115	3	12	1173

Conical=Timber Conical Lodge; CMS=Cultural Material Scatter; Eagle=Eagle Trapping Feature; Village=Earthlodge Village; Earth=Earthwork; Fort=Fortification; ORF=Other Rock Feature; Art=Rock Art; Circle=Stone Circle; Misc=Miscellaneous

Table 12.3: Cultural/Temporal Affiliation for Recorded Archeological Resources within the Sheyenne River Study Unit, 5 August 2015.

Paleo-Indian	
Unspecified	1
Total	**1**
Archaic	
Early Large Side-Notched	1
Oxbow	5
McKean/Duncan/Hanna	10
Pelican Lake	7
Unspecified	31
Total	**54**
Woodland	
Sonota/Besant	25
Avonlea	5
Arvilla	1
Blackduck	2
Sandy Lake	2
Middle Woodland	22
Late Woodland	21
Unspecified	6
Total	**84**
Plains Village	
Total	**22**
Plains Nomadic	
Total	**2**
Late Prehistoric	
Devils Lake/Sourisford	1
Unspecified	172
Total	**173**
Historic	
Chippewa	5
Unspecified	10
Total	**15**
Unknown	**1,228**

Upland landform site settings (upland plains, hills, knolls, bluffs, ridges) predominate in the sample, as in most SU. In the SRSU just over 30% of the sites are partially or entirely on terraces or floodplains.

Numerous inventory projects have occurred in the SRSU. Below is a brief description of some of those inventory projects that the State Historical Society of North Dakota (SHSND)/North Dakota State Historic Preservation Office (ND SHPO) has reviewed prior to 5 August 2015.

The earliest archeological work undertaken in the area was probably that by T. H. Lewis (Lewis 1886, 1891, 1893), known as the Northwestern Archaeological Survey. Lewis recorded thousands of burial mounds and earthworks sites in 11 states in the north central United States and parts of Manitoba (Haury 1990:2; Lewis 1898:8). In North Dakota, over 200 earthworks, petroglyphs, and boulder formations were recorded in 12 counties (Haury 1990:2). Within the SRSU, 71 earthwork sites were recorded by Lewis. Lewis recorded four mound sites in Benson County, five mounds along the Sheyenne River in the vicinity of Valley City in Barnes County, and 62 earthwork sites in Ransom County (Haury 1990).

Cooper (1947) and Bauxar (n.d.) briefly surveyed the proposed Sheyenne reservoir in Benson, Eddy, and Wells counties. This reservoir was never constructed. Seven occupational areas and four mound sites were recorded (Cooper 1947:4-7). Most of the occupation sites were on terraces in the river valley and the mounds were on the uplands (Cooper 1947:5-7). A site (32BE3) with a fortification ditch was recorded. The site has been suggested to be either a military encampment or an aboriginal earthwork. Effigy mounds were reported as being possibly present at 32ED3 and 32ED4.

During a survey of the Baldhill reservoir area, 10 archeological sites were located. Six occupational or campsites, three mound sites, and one site of unknown type were located. Most of the occupational areas were on low terraces along abandoned stream channels while the mounds were on uplands overlooking the river valley (Kivett 1949:7-8).

In the summer of 1959 and 1960, some relict Lake Agassiz beaches were surveyed by the University of Minnesota. Several sites were located, including one yielding Folsom projectile points (Johnson 1962:160-161). Surveys on the Lake Agassiz floodplain (Michlovic 1978, 1981) have identified numerous prehistoric sites ranging from Paleo (Agate Basin) and Early Archaic (Oxbow) to Late Woodland (Blackduck and Sandy Lake) remains.

In 1965, Mallory (1966) surveyed areas in the upper Sheyenne basin. Mounds, open camps, stone circles, cairns, rock alignments, and bison kill sites were recorded.

Nelson (1973:8-23, 51-58, 63) reported petroglyphs, mounds, and rock alignments near Fort Ransom and excavated 32SH2.

In the 1970s the University of North Dakota (UND) undertook a series of surveys on the upper Sheyenne in the vicinity of the proposed Lonetree Reservoir. In 1973, 23 new sites were located. Of these sites, nine contained stone circles, 12 contained cairns, five were open camps, one contained a rock alignment, and one was a depression (Schneider 1974). The sites could not be assigned to cultural periods due to the lack of diagnostic artifacts. In 1974, 60 new sites were located (Schneider 1976:6). Thirty-six sites contained stone circles, 31 had cairns, three were open camps, and one was an eagle trap. Also surveyed in 1974 was the area to be impacted by the New Rockford canal (Schneider 1976).

In 1975, UND conducted a cultural resource inventory of the central portion of the Garrison Diversion project in the vicinity of Devils and Stump Lakes (Schneider et al. 1976). Four mound sites were located along the Sheyenne River in Nelson County. In the Sheyenne basin area of Eddy and Benson counties, two mound sites and a stone circle and mound site were recorded (Schneider et al. 1976).

The proposed Kindred Dam project resulted in a comprehensive literature review for the Sheyenne basin (Vehik and Vehik 1977). In addition, a survey was conducted of lands to be affected by the proposed inundation (Vehik 1979). Vehik recorded 56 prehistoric sites including 22 open campsites, 11 mounds, one stone circle, and two possible earthlodge villages or fortifications (Vehik 1979:53).

Beckes and Keyser (1983) report several surveys conducted within the Sheyenne National Grassland in Ransom County. A section of land was surveyed by the SHSND with negative results (Peterson 1982). The lack of sites is suggested to be the result of poor field conditions (Beckes and Keyser 1983:129). This indicates more intense survey methods should be employed in heavily vegetated areas. Michlovic (1993) convincingly argues for the routine use of shovel testing during archeological survey of obscured land surfaces. The US Forest Service has conducted several in-house surveys in the Sheyenne National Grasslands. Several range improvement projects in the Choppy Sand Hills resulted in surveys producing negative results. In 1982, approximately 2,000 acres were surveyed. Beckes and Keyser (1983) state that the "survey provided excellent data on the relationship between archeological site distribution or visibility and postglacial depositional mechanics on the Sheyenne District." Several sites were recorded including two multi-component camp or village sites along the Sheyenne River (Alien and Beckes n.d.) as well as several Late Woodland occupations (Beckes and Keyser 1983). Floodman (2012) provides a recent summary of tracts within the SRSU.

In 1985, UND conducted a Class II Reconnaissance Inventory of 709.8 km² (273 square miles) in the Sheyenne River basin (Haury and Schneider 1986:10). A total of 102 prehistoric and/or historic sites were recorded. Of the 61 sites with prehistoric components, Middle and Late Archaic, Middle and Late Woodland, and Plains Village periods were documented. Site types include mounds and mound groups, cultural material scatters, and stone features. Six Middle and Late Archaic sites were documented and results from the survey indicate buried Archaic sites are "likely to be found in the alluvial soils of the first terrace of the Sheyenne River" (Haury and Schneider 1986:253).

In 1989, a Historic Preservation Fund grant (*Documentation of Northwestern Archaeological Survey Sites Project*) was awarded to UND (Haury 1990). The primary purpose of the project was to relocate, verify, and record on current North Dakota Cultural Resource Survey (NDCRS) site forms sites Lewis identified a hundred years earlier. All of the sites in Benson County previously recorded by Lewis were relocated during the 1989 project. In Barnes County two mound sites were relocated, one was determined to be destroyed, and the remaining two were not relocated. In Ransom County, 35 of the 62 earthwork sites recorded by Lewis have been relocated. During the 1989 survey, an effort was made to determine the reason (i.e., probably destroyed, possible legal location problems, or inconclusive) for not relocating the earthwork sites. This information is presented in tabular form by site lead number in the report. In addition to site descriptions and maps, the report by Haury (1990) provides a summary of Lewis' work in North Dakota, a discussion concerning the utility of the Northwestern Archaeological Survey (i.e., accuracy of the records and limitations of the records), and a summary of site types and design of prehistoric mound sites as indicated by the Northwestern Archaeological Survey records.

In 1992, Minnesota State University Moorhead (MSUM) intensively surveyed 1,215 ha (3,000 acres) of the Maple River Valley in southwest Cass County. Twenty-three prehistoric sites, seven historic sites, and 25 site leads/isolated finds were recorded. A number of these were discovered only through the use of shovel testing. Based on this survey, a site density of about 7.3 sites per square kilometer is indicated for the Maple River area (Michlovic 1992:56). Examination of the bank revealed Holocene alluvium is at least 2 m deep along the Maple River.

Fort Ransom

In 1993, UND conducted an intensive cultural resource inventory of Fort Ransom State Park (Kordecki 1994). A canoe survey of the Sheyenne River and auger probes supplemented the pedestrian survey. The inventory resulted in the recordation of six prehistoric artifact scatters; one of these (32RM113) also contains a historic component. As documented by investigators, all of the prehistoric sites are located on low terrace/floodplain landforms (ibid.:52). Four of the prehistoric sites (32RM93, 32RM110, 32RM111, and 32RM112) had no surface expression but were located by auger probing. Ceramics were recovered at three of the sites and chipped stone artifacts and bone fragments were common to all of the sites (ibid.:Table 1). The ceramics indicated a late prehistoric occupation but no further cultural/temporal affiliations could be discerned (ibid.:52). Quartzite accounted for the majority of the lithic material but Knife River flint (KRF) and TRSS were also present. Investigators suggest the sites functioned as field camps or habitation sites (ibid.).

The Hanson Mounds site (32RM117), located on private property west of the Fort Ransom State Park boundary was also recorded by UND. As originally recorded in the 1930s, the site contained five mounds. However, in 1993 only three mounds were observed. The three earthen mounds are on the edge of a bluff with a view over the Sheyenne River valley (ibid.:39).

Lake Jessie

In 1995, approximately 1,050 acres within the Drift Prairie region were intensively inventoried by UND (Kordecki and Toom 1996:1). “The project intended to produce information that would contribute toward our knowledge of the numbers and kinds of sites that are found adjacent to the larger Drift Prairie lakes” (ibid:iii). The project areas were near Lake Jessie in Griggs County and Spiritwood Lake in Stutsman County. The Lake Jessie project area (approximately 650 acres) is within the SRSU. The Spiritwood Lake project area is within the James River SU.

The eastern portion of the project area is ground moraine with little relief. In contrast, the western portion is the Cooperstown end moraine where the relief is greater and varies considerably. As reported by investigators, good ground surface visibility resulted in the recordation of seven archeological sites and four archeological site leads (ibid.:Table 2). The property types include three cultural material scatters, two mounds, one cairn, and one depression (ibid.). Sites within the SRSU were located on two types of landforms. The cultural material scatters were found eroding from cutbanks of a low terrace (ibid.). The cairn and mounds were observed atop ridges, west of Lake Jessie (ibid.:30). The prehistoric depression is on a ridge above springs (ibid.). Investigators concluded that these combinations of property types and landforms reflect general trends throughout both project areas. That is, occupation sites (cultural material scatters) generally are located at lower elevations and the other site types generally were constructed at higher elevations (ibid.:79).

Camp Grafton North

During the autumn of 2001, UND conducted an intensive cultural resources inventory of approximately 1,000 acres within the Gilbert C. Grafton State Military Reservation (Camp Grafton North) for the North Dakota Army National Guard (Jackson and Kordecki 2003:iii). The project area is within the Devils Lake basin of the Drift Prairie and bounded by Devils Lake to the west, south, and east. When lake levels are high the area is an island (historically known as Rock Island). Very poor ground surface visibility resulted from dense vegetation; therefore, shovel and auger probes were routinely used to supplement the pedestrian survey (ibid.).

Five archeological sites and three archeological site leads were recorded during the survey of Camp Grafton North. Additionally, three previously recorded sites and two site leads were updated. All of the archeological sites and site leads are cultural material scatters. Common artifacts include chipped stone flaking debris and tools, pottery, fire-cracked rock, and animal bone fragments (Jackson and Kordecki:5.26). The sites are situated on various landform types, including: six sites and one site lead on high lacustrine bench/terrace landforms, two sites on upland hilltops, two sites on upland ridges, two site leads on upland knolls, and one two site leads in rolling uplands (ibid.:Table 5.3). Investigators write (ibid.:5.26),

> The best archeological sites at Camp Grafton North, which contain the densest and most diverse artifact assemblages, are located along the edge of the high lake terrace or bench that overlooks Devils Lake. This bench is above the highest lake strandline, which is located at about 1450 ft in elevation. There are also good sites located in the rolling uplands behind this bench. The best among these sites are located the closest to the bench, and, by default, closest to the lake. Devils Lake, the only reliable and permanent water source in the area, is seen as a critical factor that influenced the spatial patterning of archeological sites at Camp Grafton North.

Pipelines

In 1996 and 1997, inventory of the proposed Alliance pipeline was conducted (Stine et al. 1998b). The pipeline in North Dakota crosses 14 counties from Renville County southeast to Richland County. Investigators surveyed approximately 149 miles (approximately 3,536 acres) of the 324-mile long pipeline (ibid.:25). The survey corridor ranged from 200-300 foot wide with pedestrian transects averaging 15 m apart (ibid.:ii). Pedestrian survey was augmented by shovel probes spaced 10 meters apart in areas with a higher probability of archeological sites (ibid.). The inventory included not only the pipeline corridor but also survey of shooflies, access roads, and compressor station sites (Fassler 2000; Forsberg et al. 2000; Kulevsky and Hannum 1999). Forty-four prehistoric sites were recorded during the initial survey; 19 buried cultural material scatters, 16 cultural material scatters, 7 stone circle sites, 1 cairn site, and 1 cairn/cultural material scatter site (ibid.:Table 4). Investigators recommended Phase II testing for all of the sites.

The proposed construction of an approximately 1,845-mile long crude oil pipeline (TransCanada), originating in Canada and terminating in Illinois and Oklahoma, necessitated Class I, II, and III cultural resource inventories in eastern North Dakota (Bleier et al. 2006). Driven by a geomorphologist, the Class II inventory covered 100% of the original pipeline route. The Class III inventory was a 31% sample of the proposed pipeline route(s). The sample segments represent higher probability areas (ibid.:ii). The pedestrian survey was supplemented by shovel probes in areas of reduced ground surface visibility. Counties within the SRSU include Steele, Barnes, and Ransom. Terrain along the proposed route generally is flat to gently rolling plains with wetlands. The contemporary landscape is a patchwork of cultivated fields, pasture, and Conservation Reserve Program (CRP) fields. During the Class III inventory, two archeological sites, one archeological site lead, and six archeological isolated finds were recorded within the SRSU (ibid.:Table 10).

Along the 2006 proposed TransCanada pipeline route, the six archeological isolated finds and site lead consisted of chipped stone flaking debris and tool fragments. Shovel probes were excavated at site lead 32RMx89, located on a terrace west of the Sheyenne River. The recovered material included one obsidian artifact that was tentatively identified as a snapped blade (ibid.:40). Investigators suggest that the presence of such an artifact is indicative of trade and/or travel during the Middle Woodland period

(ibid.). Swan River chert, brown chert, white chert, and KRF comprise the lithic raw materials of the isolated finds (ibid.:Table 11). Site 32RM160 is a cultural material scatter situated on a terrace east of the Sheyenne River (opposite 32RMx89). Materials recovered at the site were unburned and burned bone fragments, KRF flakes, and native pottery (ibid.:38). Phase II testing was conducted at 32RMx89 and 32RM160 in the fall of 2006 (see Test Excavation Projects section below). Site 32BA170 is a sparse lithic scatter located on a small rise in a plowed field. Lithic material at the site was 99% SRC and 1% KRF (ibid.:33). In general, the documented site settings and material types are not unexpected (cf. Table 12.2).

Numerous archeological sites have been recorded in eastern North Dakota along sampled, cross-state linear project corridors, such as the Alliance and TransCanada inventories. More surveys of this nature inevitably would result in the recordation of more archeological sites.

Between September 2007 and August 2015, 491 inventories within the SRSU were submitted to the ND SHPO. The majority (53%) relate to transportation and material source projects. The high percentage is partially due to the numerous FEMA disaster declarations (flooding and storms) in 2009-2011 and 2013-2014 for material source areas for the recovery. Twenty-four percent result from rural and urban development (waterlines, utility lines, communication lines and towers). Only 7% of the projects relate to energy development such as wind farms, transmissions lines, and pipelines. Various other projects (tree plantings, fences, bank stabilization, recreation, homesites or town relocation, and research) make up the remaining 16% of submitted reports.

As part of background studies for large-scale inventory projects, researchers should attempt to make use of LANDSAT imagery of groundcover available for North Dakota (cf. Reid and Johnson 1978) supplemented by aerial photographic coverage (cf. USDA 1937). LiDAR coverage, if available, also should be reviewed. Recent digital imagery is available from several internet sources (Google Earth 2016; ND GIS 2016; NRCS 2016a, b, c).

- North Dakota GIS Hub (ND GIS): https://www.nd.gov/itd/statewide-alliances/gis
- Natural Resource Conservation Service: https://www.nrcs.usda.gov/wps/portal/nrcs/site/national/home/
- Google Earth: https://www.google.com/earth/

Formal Test Excavation Projects

Table 12.4 presents a list of manuscripts from test excavation projects within the SRSU. The site numbers listed for each report are only those sites in the SRSU. Results derived from these investigations have helped lay the cultural chronological foundations for this SU. Many important contributions to regional prehistory have stemmed from this class of inquiry.

Table 12.4: Formal Test Excavations in the Sheyenne River Study Unit, 5 August 2015.

Year	First Author	Second Author	Title	Site Number	Ms #
1972	Schneider, F.		Archaeological Investigations in the Proposed Lonetree Reservoir, Garrison Diversion Unit, North Dakota: 1973 Season, Wells County and Sheridan County, ND	32SH2 32SH7 32SH116	52
1976	Schneider, F.		Archaeological Investigations in the Proposed Lonetree Reservoir, Garrison Diversion Unit, North Dakota: 1974 Investigations: Part 1, Wells County, and Sheridan County, ND	32SH5 32SH105 32SH112 32SH116 32SH121 32SH133 32SH145 32SH146 32SH147 32SH149 32SH151 32SH153 32SH154 32SH156 32SH157 32SH161 32SH162 32SH164 32SH166	53
1982	Fox, R.		Phase II Testing at a Prehistoric Site (32BA418) at Lake Ashtabula (Sheyenne River), Barnes County, ND	32BA418	2761
1984	Fox, S.		Archaeological Excavations at 32BA415, 32BA428, and 32GG5 on Lake Ashtabula, Barnes and Griggs Counties, ND	32BA415, 32BA428, 32GG5	3237
1983	Deaver, K.		Archaeological Site Testing & Evaluation in the Lonetree Reservoir, Garrison Diversion Unit, Sheridan and Wells Counties, ND	32SH108 32SH110 32SH117 32SH118 32SH138 32SH159	3240
1984	Gnabasik, V.	M. Gregg	Phase II Testing at 32BA3, Barnes County, ND	32BA3	3248
1984	Kuehn, D.	M. Gregg	Phase II Archaeological Testing at 32BA414 Lake Ashtabula, Barnes County, ND	32BA414	3252
1984	Dill, C.		The Devils Lake Burials: An Evaluation of Site 32RY100	32RY100	3318
1986	Deaver, K.		Archaeological Excavation at Sites 32SH110 and 32WE107, Sheridan and Wells Counties, ND	32SH110,	3947
1986	Michlovic, M.		Archaeological Survey and Test Excavations in Cass County, N.D.	32CS29 32CS30	4295
1986	Schneider, F.		Sharbono Site in Benson County, ND Test Excavations: 1986	32BE419	4644
1988	Persinger, R.		Archeological Testing of Sites 32CS42 and 32CS44 Cass County, ND	32CS42, 32CS44	4715
1988	Christensen, R.		Devil's Lake Archaeology: Testing Four Sites at Court Lake, Benson County, ND	32BE58, 32BE59, 32BE60, 32BE61	7128

Year	First Author	Second Author	Title	Site Number	Ms #
1990	Michlovic, M.		The Lucas Site(32RM225): A Fortified Prehistoric Site in the Sheyenne River Valley, Ransom County, ND	32RM225	5041
1990	Banks, K.		Testing/Evaluation & Monitoring Programs; The Horner-Kane Site (32RY77), Grahams Island State Park, Ramsey County, ND	32RY77	5069
1990	Banks, K.		Preliminary Report: Testing Program Grahams Island State Park, Ramsey County, ND	32RY77	5202
1991	Picha, P.	M. Gregg	Test Excavations in 1990 at 32RY77, Grahams Island State Park, Ramsey County, ND	32RY77	5549
1992	Stine, E.	K. Pool	The Camp Grafton Site: Evaluative Subsurface Testing of 32ED85 in Eddy County, ND	32ED85	5825
1993	Michlovic, M.		Archaeological Test Excavations at 32RM92, Ransom County, ND	32RM92	5949
1993	Kulevsky, A.	E. Stine	Lake Ashtabula Phase II Testing of Sites: 32BA425, 32GG11 and 32GG13 in Barnes and Griggs Counties, ND	32BA425, 32GG11, 32GG13	6151
1993	Kulevsky, A.		Lake Ashtabula Phase II Testing of Sites 32BA421 and 32GG14 in Barnes and Griggs Counties, ND	32BA421,	6154
1993	Gregg, M.		1991 Site Limits Investigations at the Horner-Kane Site (32RY77), Grahams Island State Park, ND	32RY77	6197
1994	Driscoll, P.	D. Toom	Grahams Island State Park Archeological Test Excavations For Proposed Recreation Facilities, Ramsey County, ND, 1993 Field Season	32RY77 32RY810	6218
1994	Kulevsky, A.		Phase II Testing of Sites 32BA424 and 32GG10 in Barnes & Griggs Counties, ND	32BA424, 32GG10	6387
1996	Michlovic, M.		Archaeological Test Excavations at the Solhjem Site (32 RI718), Richland County, ND	32RI718	6752
1996	Rothwell, S.	T. Larson	Results of Phase II Testing at 32BA406 and 32BA413, Barnes County, ND	32BA406, 32BA413	6837
1997	Graham, C.		Graham's Island Road Relocation and Associated Borrow Location, Benson County, ND	32BE25	6911
1997	Kinney, W.		The Barr Engineering Sewer Project. A Class III Cultural Resource Inventory and Evaluation of Site 32RY380 in Ramsey County, ND	32RY380	6987
1998	Stine, E.	M. Cassell	Alliance Pipeline Project: Phase II Testing and Evaluation of 37 Sites in ND, Vols. I and II	32PI19 32PI23 32PI24 32PI401 32WE89 32WE90 32WE92 32WE93 32WE94 32BA106 32BA107 32BA108 32BA109 32BA110 32BA112 32RM123 32RM124 32RM126 32RM127	7212

Year	First Author	Second Author	Title	Site Number	Ms #
				32RM128	
1998	Stine, E.	M. Hannum	Phase II Testing & Evaluation of 21 Sites & Five Sites Revisited An Addendum to Alliance Pipeline Project: Phase II Testing and Evaluation of 37 Sites in ND	32PI21, 32PI22, 32PI25, 32PI26, 32PI27, 32PI28, 32PI29, 32PI404, 32BA104, 32BA105, 32BA111, 32RM107, 32RM125, 32RM133	7329
1999	Michlovic, M.	Sather, D.	Archaeological Testing at 32CS4677: Kindred-Davenport Regional Airport	32CS4677	7435
2000	Kordecki, C.	D. Toom	Stump Lake Evaluative Archeological Test Excavations at Site 32NE402, Nelson County, ND	32NE402	7573
2000	Stine, E.	A. Kulevsky	Phase II Testing & Evaluation of Four Archaeological Sites, 32GG3, 32GG236, 32BA7, and 32BA14 at Lake Ashtabula, Griggs & Barnes Counties, ND	32GG3, 32GG236, 32BA7, 32BA14	7626
2000	Stubbs, D.	A. Ollendorf	Cultural Resources Management: Six Archaeological Sites at or Near the Location of the Proposed Flood Control Dam and Associated Features Along the Maple River, ND. Phase II Site Evaluation	32CS4479 32CS4489 32CS4898	11349
2001	Good, K.		To Borrow or Not to Borrow: Limited Testing of 32BE85, Benson County, ND	32BE85	7900
2001	Good, K.		32BE67 Evaluative Testing	32BE67	7902
2001	Stubbs, D.	D. Sather	Cultural Resources Management: Twenty-Nine Archaeological Sites and Site Leads, Proposed Flood Control Dam and Associated Features along the Maple River, ND. Phase II Site Evaluation and Addendum	32CS4477 32CS4478 32CS4481 32CS4482 32CS4484 32CS4499 32CS4500 32CS4899 32CS4504 32CS16 32CS4475 32CS4476 32CS4485 32CS4487 32CS4493 32CS4494 32CS4496 32CS4498 32CS4900	11350
2002	Jackson, M.	D. Toom	Bivouac Site (32RY189) Evaluative Test Excavations Within the Gilbert C Grafton State Military Reservation, Ramsey County, ND	32RY189	8407

Year	First Author	Second Author	Title	Site Number	Ms #
2004	Jackson, M.	C. Kordecki	Sullys Hill National Game Preserve 2003 Archeological Survey and Test Excavations, Benson County, ND	32BE126	8737
2005	Jackson, M.	D. Toom	Camp Grafton North 2002-2003 Archeological Test Excavations, Ramsey County, ND	32RY145 32RY147 32RY148 32RY149 32RY386 32RY387 32RY388 32RY389 32RY390 32RY392 32RYX49 32RYX50 32RYX51	9322
2006	Jackson, M.	C. Kordecki	Camp Grafton South Upland Sites: 2002-2004 Archeological Test Excavations, Eddy County, ND	32ED22 32ED23 32ED24 32ED38 32ED80 32ED213 32ED215 32ED219	9739
2006	Burns, W.	C. Burns	Evaluative Testing at 32BA169, Barnes County, ND	32BA169	10621
2007	Toom, D.	M. Jackson	Camp Grafton South Lowland Sites: 2002-2004 Archeological Test Excavations, Eddy County, ND	32ED41 32ED43 32ED85	10356
2007	Jackson, M.	D. Toom		32RY388 32RY389 32RY390	10768
2007	Bleier, A.	E. Stine	Keystone Pipeline Project: Testing 32RM160 and 32RMX89 in Ransom County, ND	32RM160 32RMX89	11943
2008	Stine, E.	A. Kulevsky	TransCanada Keystone Pipeline: Evaluative Testing at 32RM260, 32WA250 and 32WA251, Ransom and Walsh Counties, ND	32RM260	10361
2008	Michlovic, M.		Archaeological Test Excavations at the Peterson Site (32RM401), Ransom County, ND	32RM401	10417
2012	Michlovic, M.	G. Holley	Archaeological Testing at the Schultz Site (32RM215), Ransom County, ND, 2009-2010	32RM215	13744
2013	Jones, R.	K. Shillinglaw	Archaeological Testing To Verify a Reported Grave Site (32CSX362) at the Sheyenne River Crossing of the Fargo-Moorhead Metro Flood Risk Management Project, Cass County, ND	32CSX362	14498
2014	Jones, R.	Haas, J.	Phase II Evaluation of Thirteen Archaeological Site, Fargo-Moorhead Metro Flood Risk Management Project Diversion Channel Alignment, Cass County, ND	32CS5127 32CS5138 32CS5139 32CS5140 32CS5141 32CS5142 32CS5143 32CS5144 32CS5146	14980

Year	First Author	Second Author	Title	Site Number	Ms #
				32CSX332 32CSX339 32CSX346 32CSX350	

Kivett (1948:8) conducted test excavations at three permanent villages (32BA5, 32BA6, and 32GG2) and two temporary camps (32BA2 and 32BA3). He prepared brief descriptive reports of the pottery from these sites but they were not site specific and are, therefore of limited value.

A stone circle and a cairn from 32SH2 were excavated. The stone circle yielded a projectile point and some scrapers while the cairn produced nothing (Mallory 1966:39-42). Site 32SH8 was suggested to have been Plains Woodland campsite (Mallory 1966:44). Site 32SH203, which contained stone circles and cairns, was interpreted as Plains Woodland (Mallory 1966:45).

A number of sites were tested in the vicinity of the proposed Lonetree Reservoir in the mid-1970s. Test excavations of two cairns from 32SH2 yielded little material and the same was true of a stone circle from 32SH116 (Schneider 1974). In 1994, UND revisited 32SH116, observed far fewer rings than Schneider (1974), but nonetheless agreed with the earlier findings (Toom et al. 1998:iv). Site 32SH7 was a bison kill site with some cord roughened pottery and corner-notched projectile points or hafted knives (Schneider 1974). Excavations were conducted at 25 of the sites recorded during the 1974 field season. Site 32SH121, a cairn, yielded nothing (Schneider 1976:17-20). 32SH203 was a supposed mound site which also yielded nothing and may have been a natural feature (Schneider 1976:24). Twenty-two of the sites tested contained stone circles. Distribution analysis indicated that sites on the uplands were characterized by either greater technological activity and/or longer occupation than was true for those in the bottomlands (Schneider 1976:40).

A bison kill site (32SH7) was tested in 1973 and 1974. The site is interpreted as being a trap or pound. The site has been described by Larson (1976) and appears to date to the Post-Contact Coalescent.

Fox (1979) tested the Irvin Nelson site (32BE208) by excavating six 1-x-1-m square units. Historic, Archaic, and Woodland components are represented.

Brown and Brown (1982) tested four sites (32WE101, 32WE103, 32WE109, 32WE122) in the vicinity of the proposed Lonetree Dam and Dikes and New Rockford Canal. Basically no information was gleaned from the testing program. At 32WE122, Brown and Brown (1982) suggest a Middle Woodland occupation based on a side-notched projectile point. However, Deaver (1983) classifies the point as Old Woman's (Plains side-notched) which probably represents Late Woodland or more likely a Plains Village occupation.

The UND tested 32BA418 by placing five one square meter test units in the site. A Woodland bison processing station is suggested (R. Fox 1982).

Nine sites were tested in the Lonetree Reservoir in Sheridan and Wells counties by Deaver (1983). The sites are primarily stone circle and cairn sites. The sites that were tested include 32SH117, 32SH111, 32SH108, 32WE107, 32SH138, 32WE117, 32SH159, 32SH118, and 32SH110. Sites 32SH117 and 32SH111 were determined to be a single site consisting of 35 stone circles and 10 cairns. The site is now listed as 32SH117.

Six one-meter square units and 90 auger and shovel tests totaling 3.9 m^3 of site matrix were test excavated at 32BA3 (Gnabasik 1983; Gnabasik and Gregg 1984). The testing program revealed the site was a late prehistoric campsite with evidence of big game butchering, bone grease rendering, and hide processing activities.

Site 32BA414 was tested using seven one-meter square units and auger probes. A Late Plains Woodland (AD 900-1350) campsite of short duration is suggested (Kuehn and Gregg 1984).

Sites 32BA415, 32BA428, and 32GG5 were tested by North Dakota State University (NDSU) (Fox 1984). A Plains Woodland bone marrow rendering area was postulated for 32BA415. At 32GG5 a Plains Woodland occupation is suggested. A Late Plains Archaic cultural affiliation is identified for 32BA428.

Site 32SH110 consists of two stone circles and eight cairns. One cairn and half a ring were excavated totaling 28.13 m^2. The cairn was interpreted as a trash dump of discarded material from house floors (Deaver 1986). A TL date of 930BP±70 (Alpha-2634) was obtained from the site.

The Shea site (32CS101) was initially tested in 1985 with five two x one meter test units. In 1987, 19 two x one meter units were excavated (Michlovic and Schneider 1988). The site is a fortified late prehistoric village dating to ca. AD 1448 based on six radiocarbon samples. The site is affiliated with the Northeastern Plains Village complex (Michlovic and Schneider 1993:117). The site has further been assigned to the Shea phase (Michlovic 2008:35-51).

The Dahnke-Reinke site (32CS29) was tested in 1985, 1986, and 1987 (Michlovic 1987; Thompson 1990:26). The Dahnke-Reinke site has multiple components. Archaic, Early Woodland, Middle Woodland (Sonota and Fox Lake pottery) and Late Woodland (Sandy Lake) components are suggested (Thompson 1990).

In 1986, the Sharbono (32BE419) site was tested (Schneider 1988). The site is on the high strandline of Devils Lake. There is evidence for Archaic, Plains Village, and Late Woodland occupations. The ceramic assemblage exhibits attributes similar to eastern North Dakota Woodland ceramics, Missouri Valley Plains Village ceramics, and combinations of Woodland and Plains Village attributes (Schneider 1983, 1988).

In 1986, 32CS30 was tested (Michlovic 1987). The Wichman site is a Late Woodland (Sandy Lake) occupation.

Cultural Research and Management, Inc. (1988) tested sites 32CS42 and 32CS44. The testing program at 32CS42 consisted of 106 auger probes and four 1-x-1-m units. The site is postulated as dating to the Late Woodland period. Based on ceramics recovered during the survey, Floodman (1987) suggested a possible early phase Blackduck cultural affiliation. Site 32CS44 was tested using 36 auger probes and four 1-x-1-m units. This site is suggested to date to the Late Woodland period (CRM, Inc. 1988).

At the Lucas site (32RM225) five one-meter square units were excavated in 1989 (Michlovic 1990). The site is a small, fortified (26 m N-S, 35 m E-W) late prehistoric village. Ceramics show similarities to Woodland (Blackduck) and Plains Village wares (Michlovic 1990:17). For further discussion of the Lucas site direct your attention to Holley and Kalinowski (2008:127-138).

The Peterson site (32RM401) is a fortified settlement and cultural material scatter located on uplands above the Sheyenne River. Archeologists from MSUM and volunteer students excavated five 1-x-1-m test units at the site in 2007 (Michlovic 2008a). Recovered artifacts include chipped stone flaking debris, core fragments, fire-cracked rock, triangular points resembling those from the Shea and Sprunk sites, and Sandy Lake and Northeastern Plains ceramic wares (ibid.:7-13). The Peterson site is identified as belonging to the Shea phase (Michlovic 2008:46).

In 2009-2010 MSUM tested the Schultz site (32RM215) to verify integrity, determine cultural affiliation, and to recover data regarding subsistence (Michlovic et al. 2012:2). A single radiocarbon date of 400 $\pm$ 40 BP was secured for the site that the authors reported was consistent with a substantial portion of the artifact assemblage. The Schultz site was assigned to the Northeastern Plains Village complex. A storage pit was uncovered and the presence of daub with twig and wood impressions raises the potential of structures being present at the site. Recovered ceramics exhibit an intermingling of eastern and western based ceramic traditions (ibid:40-41).

Site 32BA169 was tested and interpreted as a short-term occupation site with very limited contextual integrity and analytical value based on excavation of 43 auger probes and two test units (Burns and Burns 2006). No diagnostic artifacts were recovered and thus cultural temporal affiliation is unknown.

Grahams Island

In 1990, test excavations were conducted at Horner-Kane (32RY77). Site 32RY77 is an extensive multiple component prehistoric archeological site along Devils Lake. Late Plains Archaic (Pelican Lake), Middle Plains Woodland (Sonota), Late Plains Woodland (Sandy Lake), and early Plains Village (Northeastern Plains Village complex)

occupations are present (Picha and Gregg 1991). Two radiocarbon assays from the Northeastern Plains Village complex component date to the late 1600s (Gregg 1994). The Horner-Kane site was tested earlier by the Bureau of Reclamation (Banks 1990). At that time four one-meter squares were excavated.

In 1991, site limits to the west and southwest were more accurately discerned at the Horner-Kane site (Gregg 1993). Fieldwork included surface inspection and auger probes (n=100) (ibid.:5). Recovered materials include ceramics, flaking debris, chipped stone and ground stone tools, fire-cracked rock, bone fragments, and charcoal (ibid.:Table 1). In addition, four positive auger probes 200 m southwest of Horner-Kane revealed a new, smaller prehistoric site (32RY810) (ibid.:9).

In 1994, Gregg reported of a salvage excavation program also conducted in 1991 at the Horner-Kane site. Three components were identified: Middle Plains Woodland (100 BC-AD 600), early Fur Trade (AD 1600-1700), and historic (Gregg 1994:iii). Dating of the site was based on ceramic types, radiocarbon analysis of two bison bone samples, and the presence of expedient chipped stone tools. Investigators note that the salvage excavation totaled 69 m², which amounts to 0.02% of the total site area (ibid.:1.1).

More testing was conducted at Grahams Island State Park in 1999. Surface inspection and auger probes were placed within the area of the proposed ranger residence and central campground, the latter adjacent to the boundaries of the Horner-Kane site (Jackson 1999:Figure 1). The four auger probes in the ranger residence portion of the project area contained no cultural materials (ibid.:14). Two pieces of flaking debris were recovered from the 41 auger probes placed within the limits of the proposed campground. However, investigators indicate that the portion of the Horner-Kane site to the southeast of the auger probes is potentially significant and recommended avoidance.

Camp Grafton North

In 2002 and 2003, UND conducted test excavations at 14 sites (see Table 12.5) within the boundaries of Camp Grafton North (Jackson et al. 2005). Camp Grafton North is located on the north-central side of Devils Lake, in the Drift Prairie region. Nine of the sites were recommended as archeologically not significant or eligible for the NRHP (ibid.:iii). Three of the sites (32RY386, 32RY388, and 32RY390) require additional testing in order to make accurate recommendations (ibid.). However, two sites (32RY387 and 32RY389) are notable for the archeological information gleaned from them.

Additional test excavations were conducted at 32RY388, 32RY389, and 32RY390 in 2004-2005 (Jackson et al. 2007). The Borrow site (32RY389) is a Late Plains Archaic site of the Pelican Lake complex. This site was considered highly significant based on its potential to offer a clear picture of the time period. Both sites 32RY388 and 32TY390 contained low artifact density prehistoric ceramic period components and interpreted as short-term field camps. A late Middle Minnesota Woodland component (ca. AD 900) and a Late Minnesota Woodland period (AD 1000-

1750) were identified at site 32RY388. A Middle Northeastern Plains Village component (ca. AD 1555) and protohistoric component were identified at 32RY390.

Table 12.5: Summary Information on 14 Archeological Sites, Camp Grafton North Testing, 2002-2003 (Jackson et al. 2005) and three Archeological Sites in 2004-2005 at Camp Grafton North, UND Fieldwork (Jackson et al. 2007).

Site	Site Type	Component(s) by Period	Settlement Type	Condition
32RY145	Artifact Scatter	Prehistoric ceramic, unspecified	Field camp	Extant, but surrounded by camp construction
32RY147	Artifact Scatter	Prehistoric ceramic, unspecified	Field camp or game lookout location	Extant
32RY148	Artifact Scatter	Early ceramic; Middle NE Plains Village	Field camp	Extant
32RY149	Artifact Scatter	Prehistoric, unspecified	Indeterminate	Extant
32RY386	Artifact Scatter	Late ceramic; Early Historic (Ft. Totten); Late Historic (Camp Grafton)	Field camp or location; Logging camp?; Training camp?	Extant
32RY387	Artifact Scatter	Middle Plains Woodland; Middle Minnesota Woodland; Late Minnesota Woodland	Field camp or residential base	Extant, but site margins impacted by prior road and building construction
32RY388	Artifact Scatter	Middle Minnesota Woodland; Late Minnesota Woodland	Field camp	Extant
32RY389	Artifact Scatter	Late Plains Archaic[1]	Field camp	Partially destroyed by borrow area
32RY390	Artifact Scatter	Middle NE Plains Village; Protohistoric	Field camp	Extant
32RY392	Artifact Scatter	Early NE Plains Village	Field camp	Extant
32RYX49	Artifact Scatter	Prehistoric, unspecified	Indeterminate	Extant
32RYX50	Artifact Scatter	Prehistoric ceramic, unspecified	Indeterminate	Extant
32RYX51	Artifact Scatter	Prehistoric, unspecified	Indeterminate	Extant
32RYX135	Material Scatter	None	None (not a site)	Extant
32RY388	Artifact Scatter	Middle Plains Woodland Late Plains Woodland	Field camp	Extant
32RY389	Artifact Scatter	Late Plains Archaic[1]	Field camp	Partially destroyed by borrow area
32RY390	Artifact Scatter	Middle NE Plains Village Protohistoric	Field Camp Unknown	Eroding, partially destroyed by road construction

[1]Block unit excavations conducted at 32RY389 in 2004 confirmed the presence of a single Late Plains Archaic, Pelican Lake complex component.

The North Gate site (32RY387) is a multi-component artifact scatter within a heavily forested area, disturbed by modern construction to the north, west, and south (Jackson et al. 2005:9.1). A large depression is central to the site and contained a high density of artifacts including, 756 body sherds and 9 rim sherds (ibid.:9.29). Several cultural complexes were identified as a result of the ceramic analysis, including: Sandy Lake (ca. AD 900-1750); perhaps Onamia (ca. AD 800-1000); Brainerd (ca. AD 600-

800); and Sonota (ca. AD 1-600) (ibid.:9.59). The Sonota complex falls within the Middle Plains Woodland period. The other complexes fall within the Late Plains Woodland period (late Middle Minnesota Woodland and Late Minnesota Woodland periods). A Besant point and radiocarbon dates support the delineation of cultural complexes (ibid.).

In contrast to the North Gate site and other sites at Camp Grafton North, no native ceramics were recovered from the Borrow site (32RY389) (Jackson et al. 2005:11.6). The absence of ceramics and presence of a Pelican Lake point fragment suggests the single component site dates to the Late Plains Archaic period (1000-500 BC). In general terms, the site is a moderately dense artifact scatter located in rolling uplands, bounded to the west by a borrow area. In 2004, block excavations substantiated assignment of the site to the Late Plains Archaic period. More Pelican Lake points were recovered but still no ceramics. Investigators note, "Our ability to assign the prehistoric occupation at the Borrow site to the Pelican Lake complex likewise confirms the site as a significant archeological resource, and the only known pre-ceramic occupation site within the bounds of Camp Grafton North" (ibid.:11.20).

Camp Grafton South

Testing was conducted at the Lake Coe site (32ED85) in 1991 (Stine and Pool 1992). The multi-component site is set on a terrace remnant, roughly 200 meters southeast of Lake Coe. The site dates from the Plains Woodland through the Protohistoric period. Diagnostic artifacts recovered during the 1991 testing project include a Besant point base and native ceramics. Ceramics classified as Devils Lake-Sourisford complex and Cambria phase were found within the Northeastern Plains Village complex component (ibid.:29-30). Representation of the Northeastern Plains Village complex at the Lake Coe site is suggested because (1) KRF comprises over half of the lithic debris, (2) there is no evidence of horticulture, and (3) abundance of animal bone (ibid.). Finally, a protohistoric occupation is evinced by the recovery of European glass beads and the decrease in lithic and ceramic artifacts in Level 2 (ibid.:30-31).

Between 2002 and 2004, UND conducted test excavations within the boundaries of Camp Grafton South at the Lake Coe site, 32ED41, and 32ED43 (Toom et al. 2007). The Lake Coe site, previously tested in 1991, was tested again in 2003. The UND investigators identified six site components, including: Middle Plains Woodland--Sonota complex (ca. AD 1-600), Late Middle Minnesota Woodland--Brainerd (ca. AD 460), Late Minnesota Woodland—Kathio/Onamia (ca. AD 870) and Blackduck/Sandy Lake (ca. AD 890), Early-to-Middle Plains Village—Northeastern Plains Village complex (AD 1200-1600) Late Plains Village (AD 1600-1800; possibly Hidatsa), and Early Historic (AD 1800s; possibly Dakota or Yanktonai). The various ceramics were the main indicators of cultural/temporal affiliation of cultural deposits (ibid.). Investigators propose the site, located in proximity to trees and water, functioned as a field camp or residential base camp during several occupational episodes (ibid.:7.60-7.61).

Site 32ED41, a prehistoric field camp, is located on an alluvial fan between two lakes. Investigators have identified five components at the site, including: Early Plains Archaic (ca. 3515 BC), Middle Plains Archaic (ca. 1270 BC), Late Plains Archaic--Pelican Lake complex (ca. 1000-500 BC), Early Plains Woodland (500-1 BC), and Middle Plains Woodland--Sonota complex (AD 1-600) (Toom et al. 2007:4.7). The Early Plains Archaic and Middle Plains Archaic components were dated by radiocarbon tests, while diagnostic artifacts were recovered from the other three components (ibd.:4.23).

Site 32ED43 is located northwest of 32ED41 in a similar physiographic setting. The small field camp has been tentatively dated to the Middle Plains Woodland period—Sonota complex because of the presence of thick, cord-roughened ceramics (Toom et al. 2007.:6.11). Sites 32ED43, 32ED41, and 32ED94, all located in the vicinity of one another, make up an archeological site complex (ibid.).

Table 12.6: Summary Information on 11 Archeological Sites, Camp Grafton South Lowland (Toom et al. 2007) and Upland sites (Jackson et al. 2006) in 2002-2004, UND Fieldwork.

Site	Site Type	Component(s) by Period	Settlement Type	Condition
32ED22	Artifact Scatter	Ceramic, unspecified	Field camp?	Impacted by road construction
32ED23	1) Artifact Scatter 2) Burial 3) Cairn	1) Prehistoric , unspecified 2) Unknown 3) Unknown	1) Game lookout location 2) Burial – protect and preserve reburial location 3) Unknown	1-2) Impacted by road construction 3) Extant
32ED24	Artifact Scatter	Late Plains Archaic or Middle Pains Woodland	Game lookout	Impacted by road construction
32ED38	Artifact Scatter	Middle Plains Woodland	Field Camp	Extant
32ED80	1) Stone Circle 2) Cairn	1) Prehistoric, unspecified 2) Unknown	1) Sacred or ceremonial? 2) unknown	1-2) Extant
32ED213	Artifact Scatter	Late Prehistoric	Unknown	Impacted by plowing
32ED215	1) Stone Circle 2) Cairn	1) Prehistoric, unspecified 2) Unknown	1) Field camp 2)Unknown	1-2) Extant
32ED219	Artifact Scatter	Ceramic, unspecified	Unknown	Impacted by plowing
32ED41	Artifact Scatter	1) Sonota complex 2) Unspecified Early Plains Woodland 3) Pelican Lake complex 4) Unspecified Middle Plains Archaic 5) Unspecified Early Plains Archaic	Field camps	Extant
32ED43	Artifact Scatter	Sonota complex	Field camp	Extant
32ED85	Artifact Scatter	1) Dakota or Yanktonai? 2) Unspecified Late Plains Village (Hidatsa?) 3)Northeastern Plains Village complex 4) Kathio/Onamia and	Field camps	Extant

Site	Site Type	Component(s) by Period	Settlement Type	Condition
		Blackduck/Sandy Lake 5) Brainerd 6) Sonota complex		

Pipelines

Nineteen sites within the SRSU were tested in 1997 as necessitated by the proposed Alliance pipeline (Stine et al. 1998a). Of these, investigators recommended four sites as significant and eligible for the NRHP and noted that the remaining 15 sites did not yield significant cultural materials (ibid.:i-ii). Site 32BA106 is a buried cultural material scatter situated west of the Sheyenne River on a low terrace. Diagnostic artifacts include Plains Village side-notched and possible Besant points and Plains Village pottery (ibid.:265). Site 32BA107 is a dense cultural material scatter buried in a fluvial terrace within the Sheyenne River valley. Components at the site have been dated by the presence of Plains Village pottery (AD 950-1650), a Plains side-notched point (AD 1000-1780), and three carbon samples (AD 1460; AD 1300; AD 830) (ibid.:283). The amount of flaking debris recovered at 32PI19 suggests it is a lithic workshop located in a sand dune on an upland plain south of Battema Lake (ibid.:65, 69).

The setting of 32WE89 is directly east of the Sheyenne River "on a flat area of valley wall slump" (Stine et al.:112). The site contains one relatively small stone circle and a sparse artifact assemblage. However, along with chipped stone flaking debris and a Plains side-notched point, stained soil was observed below ground surface (ibid.:115).

Data recovery excavations at 32WE89 were conducted in response to the proposed Alliance pipeline in 1999 (Schneider and Johnston 2000). One Plains Village period side-notched projectile point was recovered from excavation at the sole stone circle (ibid.:2). Schneider and Johnston state: "Stratigraphic pollen analyses of sediments from three localities at 32WE89…appear to represent valley wall slump dating to approximately AD 1000. Radiocarbon ages from the site place occupation between approximately AD 1205-1290 and AD 1750-1800."

The field crew continued Phase II testing along the proposed Alliance pipeline in 1998. The 15 sites within the SRSU are within Pierce, Barnes, and Ransom counties. Twelve are prehistoric cultural material scatters, two are stone circle sites, and one is a modern rock pile (Stine et al. 1998c:Table 2). Investigators reported that no significant cultural deposits were identified at any of the sites.

The TransCanada Keystone Pipeline crosses the SRSU. Testing occurred at 32RM160, 32RMx89, and 32RM260. Sites 32RM160 and 32RMx89 were sparse cultural material scatters of unknown cultural/temporal affiliation (Bleier and Stine 2007:ii). Likewise, 32RM260 was a sparse prehistoric cultural material scatter with no diagnostic artifacts or features identified during investigations (Stine and Kulevsky 2008:ii).

Fargo-Moorhead Flood Diversion Projects

In 2011, the Traditional Cultural Properties (TCP) study team was notified of a burial in the APE of the proposed diversion channel. The TCP team was shown the location and subsequently conducted a literature regarding the potential. Given there was no substantive information the TCP study team recommended testing (Ferris 2011:28). Investigations including a metal detector survey, soil coring at two-meter intervals and controlled excavation in the area where the grave was said to be located (Jones and Shillinglaw 2013). No human remains or artifacts were found except for modern refuse (ibid:25).

Thirteen archeological sites were tested for National Register of Historic Places (NRHP) eligibility for the Fargo-Moorhead diversion (Jones et al. 2014). The following sites had evidence of Middle Woodland and Late Woodland campsites: 32CS5127, 32CS5138, and 32CS5144. Those with a single Late Woodland component include: 32CS5140, 32CS5141, and 32CSx332. A Middle Woodland campsite was proposed for 32CS5142. A Late Woodland/Plains Village component was suggested for 32CS146. The remaining sites had indeterminate pre-contact assemblages: 32CS5139,32CS5143, 32CSx339, 32CSx346, AND 32CSx350.

National Register of Historic Places

The current list of archeological sites in North Dakota listed in the NRHP is available on the National Park Service website. The following internet links are useful (NPS 2016a, b):

- General information and links to specific information: https://www.nps.gov/nr/
- National Register Information System: https://www.nps.gov/nr/research/

Major Excavation and Salvage Projects

Some of the earlier excavations in this SU are poorly reported or even lack reports. Much of that work focused on the highly visible Woodland burial mounds. For example, avocational archeologist Henry Montgomery excavated dozens of mounds in the early 1900s but virtually nothing is recorded of his discoveries including locations of many sites. Table 12.7 lists manuscripts regarding excavation and salvage projects.

Table 12.7: Major Excavation Projects in the Sheyenne River Study Unit, 5 August 2015.

Year	First Author	Second Author	Title	Site Numbers	Ms #
1976	Larson, T.		Archaeological Investigations in the Proposed Lonetree Reservoir, Garrison Diversion Unit, North Dakota: 1974 Investigations: Pt. II, Sheridan County, ND	32SH7	54
1982	Schneider, F.	Treat, P.	Archaeological Investigations at the Sprenger Tipi Ring Site, 32SH205, Sheridan County, ND	32SH205	51
1982	Schneider, F.		Sprenger: A Tipi Ring Site in Central ND	32SH205	2777
1982	Brown, K.		Test Excavations at Sites 32WE101, 32WE103, 32WE109 and 32WE122, Located in the Proposed	32WE101, 32WE109,	3111

Year	First Author	Second Author	Title	Site Numbers	Ms #
			Lonetree Reservoir and Dikes and New Rockford Canal, Wells County, ND	32WE122	
1982	Fox, S.		Excavations at the Irvin Nelson Site, 32BE208	32BE208	3176
1987	Snortland-Coles, J.	Good, K.	The Archeological Component of Devils Lake Burial Site (32RY100)	32RY100	4655
1990	Thompson, R.		The Archaeology of the Dahnke-Reinke Site (32CS29), Cass County, ND	32CS29	5318
1994	Gregg, M.		Horner-Kane Site (32RY77) Archeological Excavations, Grahams Island State Park, Ramsey County, ND, 1991 Field Season	32RY77	5928
1998	Toom, D.	C. Kordecki	Lonetree Wildlife Management Area 1994 Cultural Resources Investigations, Sheridan and Wells Counties, ND	32SH161	9069
2000	Schneider, E.	J. Johnston	Bison Butchering and Baths on the Sheyenne River: The Archaeology of Site 32WE89, Wells County, ND	32WE89	7666
2000	Toom, D.	M. Jackson	Grahams Island State Park 1992 Archeological Excavations at the Horner-Kane Site (32RY77) on Devils Lake, Ramsey County, ND	32RY77	7713
2004	Jackson, M.	D. Toom	Bivouac Site (32RY189) 2002 Archeological Block Excavations, Camp Grafton North, Ramsey County, ND	32RY189	9012
2007	Jackson, M.	D. Toom	Camp Grafton North 2004-2005 Archeological Excavations, Ramsey County, ND	32RY386	10768
2008	Larmore, S.		Results of Limited Data Recovery Excavation Littleghost Site (32BE133) Benson County, ND	32BE133	10671
2011	Holley, G.	M. Michlovic	Report on 2008 Archaeology at the Biesterfeldt Site (32RM1), Ransom County, ND	32RM1	12155
2011	Haas, J.		Phase III Mitigation for Archaeological Site 32RY473, Ramsey County, ND	32RY473	12852

The Heimdal Mound (32WE401) was excavated in 1930 (Howard 1953:130-133). Howard (1953:137) describes the cultural material as similar to other material from Northern Plains sites and also notes similarities to Southern Cult material.

W.D. Strong (1940:370-376; 1941:157-166) conducted excavations in 1938 at the Biesterfeldt site (32RM1). Biesterfeldt is a fortified protohistoric village occupied in the 18th century that contained about 60 earthlodges (Wood 1971:70). Early references (Hayden 1862; Mooney 1905-1907; Will 1914; Grinnell 1918 and 1923; Bushnell 1922; Swanton 1930) suggest that the Cheyenne occupied the site and that the Sioux, Assiniboine, or Chippewa possibly caused the final abandonment of the village (Wood 1971:54-57). Wood (1971:70) points out the identification of the Biesterfeldt site is "uncertain, but the Cheyenne provide the most economical hypothesis." Wood (1971:70) explains this Post-Contact Coalescent site shows striking contrasts with Woodland groups to the east where the Cheyenne are supposed to have originated. Additional archeological investigations at the site were initiated in 2007-2008 by MSUM (Holley et al. 2011), including a National Park Service geophysical workshop (De Vore 2008). This important research project resulted in further documentation of the site and raising new questions regarding whether the site represents a long tradition in the region or intrusion (Michlovic et al. 2016:5-24). The Archaeological Conservancy owns Biesterfeldt and the site was designated a National Historic Landmark in 2016 (Dalan et al. 2016).

The Lisbon Mound was excavated by Strong (1940:385). Wood (1955, 1963, and 1971) identifies the Lisbon Mound as affiliated with the Middle Woodland Sonota complex.

Excavations at 32GG1 (a mound) revealed the disarticulated remains of eight individuals with no associated artifacts (Kivett 1948:8-9). The distribution of the remains within the mound suggested mound construction may have been an accumulative process over a considerable period of time.

The Wray Mound (32RM19) was excavated by Milligan and the contents have been discussed by Hewes (1949:328) and Howard (1953:130). Milligan recovered shell, bone, and horn ornaments, as well as ceramic sherds which exhibit Mississippian influence.

Hewes (1949:322) excavated 32BA8 (Rasmussen). The recovered material was generally described and assessed as being of little archeological value (Hewes 1949:322). In 1987, the Rasmussen site was reassigned to SITS number 32BA101 (NDCRS site form, AHP).

Hewes (1949) excavated two mounds at 32BA1 (Baldhill Mounds) in 1948. Both mounds had central burial chambers containing several disarticulated burials capped with oak logs. In addition, some intrusive extended burials were interred in one of the mounds (Hewes 1949:324-327). Plan maps, profiles, and forms from the excavations are included with the NDCRS site form housed in the Archaeology and Historic Preservation Division (AHP) at the SHSND.

References to 32BA1 may be found in several papers. Brief reports of the materials are found in Hewes (1950:9), Roberts (1951:373-374), and Wedel (1953:47-48, 53). Neuman (1967) reported a date of AD 90±150 for one of the mounds. Ossenberg (1974) analyzed the cranial data from the site, lumped with that from the Devils Lake area, to study the origins and relationships of Woodland peoples. According to her results, this skeletal group has its closest affinities with material from the Arvilla culture along the Red River, northern Blackduck culture (northern Minnesota-southern Manitoba), the Manitoba phase, and modern Cheyenne and Assiniboine (Ossenberg 1974:35). However, there are problems with her interpretations as she lumps materials and ignores Neuman's (1967) date and assigns the group a date of AD 1200-1700. Neuman (1975) includes the material from 32BA1 in his Sonota complex which he dates from AD 1-600. He also suggests that these mounds were built by hunters and gatherers whose cultural development took place on the northern Great Plains with close relationships to Besant occupations in Montana, Saskatchewan, and Alberta. He recognizes that this group received some stimulus from Hopewellian groups (Neuman 1975:93). Vehik and Vehik (1976) included the material from 32BA1 in an analysis of Northern Plains Woodland social variation.

In 1974, an exposed burial (32RM201, Lisbon burial) was salvaged from a gravel quarry (Good 1975). The burial consisted of a skeleton of a ca. 40-45 year old woman

and an associated tool kit similar to Plains Village sites. In addition, 150 squash seeds were recovered. An uncorrected radiocarbon date from a sample of the squash seeds is AD 805±105. Snortland and Good (1987) suggest this may be the remains of an early horticulturist.

Site 32SH205 was a stone circle site with 81 rings and a rock lined depression. Four of the rings and the depression were excavated using five units. The rings ranged in diameter from 3.5-8.0 m. The recovered pottery showed relationships to Plains Woodland material (Schneider and Treat 1974). A date of AD 400-500 is postulated (Schneider 1982). The site was a hunting camp occupied at least twice by groups similar to Besant people further to the west and north. The occupants were involved in a variety of extractive and processing activities.

Extensive excavations were conducted by NDSU at the Irvin Nelson (32BE208) site. One hundred thirty-six 1.5-x-1.5-m units were excavated. Fox (1982) reports two primary prehistoric cultural components, Middle Woodland and Late Woodland. However, as Schneider (1986) noted:

> Examination of the report, however, indicates the Middle Woodland component contains artifacts typologically associated with Early, Middle and Late Archaic cultural complexes as well as with Middle Woodland cultural complexes. The radiocarbon dates associated with these materials are 2860±70 BP, 1820±170 BP, and 1160±BP. The Late Woodland component has artifacts typologically associated with Late Woodland and Plains Village cultural complexes and radiocarbon dates of 1340±120 BP and 400±100 BP. Unfortunately, no provenience information is provided in the report so that it is impossible to clearly determine the association of strata, artifacts, and radiocarbon dates.

Toom's (2007) "retro-interpretation" (reanalysis and re-reporting) of the Irvin Nelson site also is at odds with the reported results of NDSU's early archeological investigations. Toom (2008:87) proposes that there are at least eight prehistoric components present at the site, including Plains Village, Minnesota Woodland, Plains Woodland, and Plains Archaic periods spanning the last 7000 years of the prehistoric past. These represent a number of short-term occupations (field camps or residential base camps) by small bands of hunter-gathers.

In 1984, the SHSND salvaged an endangered prehistoric human cemetery (32RY100, Devils Lake Burial site). Seven graves containing 30 individuals were excavated (Snortland and Good 1987). A radiocarbon date of AD 810±110 is reported. Snortland and Good (1987) compare the site to 32RM201 and suggest both represent remains of early horticulturalists. The skeletal biology and paleopathologies of the Devils Lake Burial site (32RY100) can be found in Williams (1984).

In 1985, SHSND salvaged an exposed burial at 32BA18. The grave contained the remains of at least two individuals. Forms and notes from the salvage are attached to the site form at the AHP.

Site 32WE107 consists of five stone circles. The site was mitigated by excavating two and a quarter rings and a 4-x-4-m square in a non-feature area (Deaver 1986). A total of 94.32 m^2 was excavated. A single fall or winter occupation dating to around AD 988 is postulated.

In 1986, the SHSND salvaged a burial (32BA100) that had been exposed in a wall of a gravel pit. A single flexed burial was recovered from a shallow pit. The skeleton was lying in a bed of red ochre (2-5 cm thick). A catlinite atlatl weight was associated with the burial. Dill (NDCRS site form) interpreted the site as dating to the Archaic period.

A limited data recovery plan was undertaken at the Littleghost site (32BE133) related to water electrical installation for homes at Spirit Lake Reservation. Road blading had uncovered bone, flaking debris, pottery, stone tools, and a grooved maul (Larmore et al. 2008:1). Based on the ceramic analysis there are at least four site components: Late Plains Village, Early Plains Village, Late Minnesota Woodland, and Late Middle Minnesota Woodland (Larmore et al.:73).

Data recovery was conducted 32RY473 in 2011 by excavating 235 square meters along the shore of Devils Lake. A minimum of five components were present at the site: Middle Plains Woodland Sonota/Besant complex, Middle Minnesota Woodland Laurel, early Late Woodland Blackduck, later Late Woodland Blackduck, and Late Woodland/Plains Village. The site was interpreted to represent multiple short term resource processing area utilized primarily for the procurement and processing of bison (Haas 2011:124).

Dahnke-Reinke Site

Excavations were conducted at the Dahnke-Reinke site (32CS29) from 1985 through 1987 (Thompson 1990). The multi-component site dates as far back as the Middle Plains Woodland, and possibly the Plains Archaic period. It is located south of the confluence of the Sheyenne and Red rivers. The site spans three terraces; the lower two terraces have been cut by the meandering Red River.

Diagnostic artifacts date the upper component at the Dahnke-Reinke site. Sandy Lake complex ceramics, a possible Oneota rim sherd, Late Plains Woodland projectile points, and a blue glass trade bead indicate the occupational level dates from the Late Plains Woodland through historic periods (ibid.:48). The lowest two cultural components date to the Middle Plains Woodland period. It has been speculated that the deepest component may date to the Early Plains Woodland period. Identified projectile points at the site include: Hanna, Besant, Avonlea, and Prairie side-notched (ibid.:104-107). Larger quantities of KRF and lesser amounts of local cherts were recovered from the lower components (Thompson 1990:49). Other nonlocal materials include a shell bead

from the Gulf Coast and copper piece from the area of Lake Superior (ibid.:175). An important discovery at the Dahnke-Reinke site is floral remains in hearth features and on ceramic pieces (ibid.:65). Thompson (ibid.:69) suggests, "The evidence of plant utilization at the Dahnke-Reinke site shows that by the Middle Woodland peoples were using the gallery forest resources in the late summer and fall also. This may imply a greater focus on riverine resources, and an increase in the length of time spent at encampments."

More recently, investigation at the Dahnke-Reinke site has included remote sensing. Specifically, a downhole magnetic susceptibility instrument identified buried paleosols and occupation activity areas within the middle terrace (Dalan and Goodman 2006).

Horner-Kane Site

Excavations undertaken at the Horner-Kane site (32RY77) in 1992 confirm that is a multi-component site complex (Toom 2000:iii). Six components were identified at the site: Early Transitional Sonota complex (ca. AD 100), Early Transitional Blackduck complex (ca. AD 900), Early Sandy Lake complex (ca. AD 1280), Early Northeastern Plains Village complex (ca. AD 1280), Late Sandy Lake complex (ca. AD 1650), and Late Northeastern Plains Village complex (ca. AD 1650). Investigators further suggest that the site served in the capacity of short-term field camps in association with bison hunting and processing ventures. The Horner-Kane site is significant for several reasons, not the least of which is that archeological investigations have revealed a correlation between an increase in precipitation in the Devils Lake basin and increase the number of bison. The reader is directed to Gregg's (1994) and Toom's (2000) volumes for comprehensive examination and interpretation of the site.

Camp Grafton North

In 2001 UND conducted evaluative test excavations at the Bivouac site (32RY189) (Jackson and Toom 2002). Subsequently, in 2002, UND undertook block excavations at the site, located within Camp Grafton North (Jackson and Toom 2004). Investigators suggest the multi-component site was a field camp associated with bison hunting and processing activities (ibid.:iii). The site is located north of Devils Lake on a rise in rolling prairie. The central portion of the site has been disturbed by road enhancements resulting from the rising water level of Devils Lake (ibid.:1.1). Additionally, due the shallow deposition of the site and bioturbation, stratigraphic separation of the components was not possible (ibid.:14.4). Therefore, the site was examined using one analytical unit.

"The stone tools from Bivouac are dominated by hunting implements (arrow points), knives and flake tools for cutting meat and other materials, scrapers for working hides, as well as large anvils, hammerstones and chopping/pounding tools for smashing bone" (Jackson and Toom 2004:13.3). Knife River flint accounted for the majority of the lithic assemblage, followed by locally available SRC. Other artifact classes included fire-

cracked rock, animal bone, and ceramics. Diagnostic artifacts recovered from the Bivouac site excavations date to three components, including Middle Plains Woodland, late Middle Minnesota Woodland, and protohistoric Late Plains Village periods (ibid.:13.1). Sonota-type ceramics date the Middle Plains Woodland component. The Middle Minnesota Woodland component, the principal occupation, was dated by radiocarbon analysis (ca. AD 660), the presence of Brainerd complex ceramics, and Avonlea and Prairie side-notched projectile points. Investigators state, "It is now known that the late prehistoric Brainerd ceramic complex, centered in the woodlands of north-central Minnesota, had a substantial presence around Devils Lake, based in large part on the Bivouac findings" (ibid.:14.2). Dating of the Late Plains Village period component was accomplished by the recovery of ceramics resembling those found at the Biesterfeldt site (32RM1).

Mitigative block excavations were conducted at the Borrow site (32RY389) due to impacts caused by the borrow pit. This is a single component Late Plains Archaic period field camp with great research potential (Jackson et al. 2007).

Camp Grafton South

From 2002 through 2004, test excavations were conducted at nine sites within the boundaries of Camp Grafton South (Jackson et al. 2006). The project area is within the Prairie Pothole Region between the Sheyenne and James rivers. Investigators recommended one site (32ED38) in the uplands setting as archeological significant and eligible for the NRHP. Site 32ED38 is an artifact scatter in a saddle dividing mound site 32ED28 to the northeast and a rise to the southwest. The site contains a single component, dated to the Middle Plains Woodland (AD 1-600) by the presence of a Samantha projectile point (ibid.:8.6). The archeological artifact assemblage also included bifaces, flake tools, cores, ground stone tools, chipped stone flaking debris, fire-cracked rock, and unburned and burned animal bone. As with the Bivouac site, the majority of lithic raw material recovered from the site was KRF, followed by SRC, and, notably, three obsidian flakes. Investigators speculate that the site was a field camp where prehistoric activities included cooking (fire-cracked rock) and animal processing (bone fragments) (ibid.:8.10 - 8.15).

Stone Circle and Cairn Sites

Over 100 stone circle sites have been identified during surveys (see Table 12.2) in this SU. Thirty-two stone ring sites have been tested or excavated (Table 12.8). Sites listed in this table were formally tested, meaning at least one 1-x-1-m unit was excavated at the site.

The monograph on ring sites in *Plains Anthropologist Memoir 19* is a valuable source of information (Davis 1983). A useful discussion of single ring site function based on ethnographic accounts is available in Gregg et al. (1983(3):864-869). An assessment of nomadic settlement-subsistence structure and bison ecology is discussed by Hanson

(1983:1342-1417). Additional references for stone feature sites can be found in the references section of the Cultural Heritage Form.

Cairns are also a common feature site in this SU but few have been tested. Suggested uses of cairns include marking the location of an event, travel routes, bracing poles for a variety of camp structures, caches, drive lines, or covering a burial. Cairns may also be markers of important resources such as springs, plant resources, or game trails.

Table 12.8: Tested or Excavated Stone Feature Sites in the Sheyenne River Study Unit, 5 August 2015.

Site Number	Tested Feature Type	Test Unit Location	Cultural Material	Comment	Cultural Temporal Affiliation	Ms #
32ED80	Circle	Inside	No			9739
32ED215	Circle	Inside	Yes			9739
32PI23	Circle	Inside	Yes			7212
32PI401	Circle	Inside	Yes			7212
32PI404	Circle	Inside	Yes			7329
32SH2	Circle Cairn	Inside Inside	Yes Yes			52
32SH5	Circle	Inside	?			53
32SH105	Circle	Inside	Yes			53
32SH108	Circle	Inside	No			3240
32SH110	Circle Cairn	Inside Inside	Yes Yes			3240 3947
32SH112	Circle	Inside	?			53
32SH116	Circle	Inside	Yes			52 & 53
32SH117	Circle Cairn	Inside Inside	Yes Yes			3240
32SH121	Cairn	Inside	No			53
32SH133	Circle	Inside	?			53
32SH138	Cairn	Inside	No			3240
32SH145	Circle	Inside	Yes			53
32SH146	Circle	Inside	Yes			53
32SH147	Circle	Inside	Yes			53
32SH149	Circle	Inside	?			53
32SH151	Circle	Inside	Yes		Late Prehistoric	53
32SH153	Circle	Inside	?			53
32SH154	Circle	Inside	Yes			53
32SH156	Circle	Inside	?			53
32SH157	Circle	Inside	Yes			53
32SH159	Circle Cairn	Inside Inside	?Yes ?no			3240
32SH161	Circle	Inside	Yes	2 rings exc.		53 9069
32SH162	Circle	Inside	?			53
32SH164	Circle	Inside	?			53
32SH166	Circle	Inside	?			53
32SH205	Circle	Inside	Yes	2 rings exc.	Besant	51 2777
32WE89	Circle	Inside	Yes		Late PV	7212

					LPV/Equestrian	7666
32WE90	Circle	Inside	Yes			7212
32WE122	Circle	Inside	Yes		MPW	3111

Distinguishing historic rock piles from prehistoric cairns is important. Historic rock piles/field clearing piles have a wide variety of sizes and shapes, have little lichen growth on their surfaces, and carbon deposit encrusted surfaces are not limited to the buried surface. In contrast, prehistoric rock cairns will have considerable lichen growth on their outer surfaces, carbonate deposits on their lower (buried) surface, and will be embedded in the sod. Prehistoric rock cairns tend to be composed of rocks of similar sizes and shapes in in a slightly mounded configuration.

Other Work

Michlovic and Swenson (1998) offer a concise discussion (and illustrations) of a classification system for ceramics from Northeastern Plains Village sites. The complexity of the Northeastern Plains Village period is recognized by archeologists. The cultural/temporal affiliation resulted, at least in part, from geographic location (between groups in the Missouri River valley to the west and Mississippian groups to the east), and cultural diffusion of ideas and raw materials from those reaches. Indeed the authors' note, "Ceramics of the Northeastern Plains Village complex are evidently a product of local stylistic preferences that were strongly influenced by Oneota and/or Cambria and Missouri Valley wares as well" (ibid.:23).

In recent years, Holley et al. (2006) have employed geophysical technologies to investigate archeological sites along the Maple River. Their goals include: (1) more accurately assessing the presence of ditched settlements along the Maple River and (2) developing a settlement model for the Northeastern Plains during the Late Prehistoric period (ibid.:2). An example of this work is the 2005 investigation at the Utke site (32CS4494). Here, investigations included surface reconnaissance, testing, and remote sensing. These techniques showed no signs of a ditched settlement at the site (ibid.:16). Investigators continue to refine their model based on their results.

In contrast to the Utke site, a preliminary report discusses the presence of a ditch at the Sprunk site (32CS4478) as revealed by geophysical data (Michlovic and Holley 2006). A radiocarbon date and ceramics place the Sprunk site within the Shea phase of the Northeastern Plains Village complex (ibid.:1).

Based on work at small fortified sites along the Maple River a new archeological phase (Shea phase) was proposed by Michlovic (2008b:35-51). The phase was defined based on settlement characteristics, dating, geographic distribution and ceramic styles. A complimentary article presenting interpretation of the Late Prehistoric occupation of the Northeastern Plains is found in Holley (2008:53-67).

An interdisciplinary approach was used for archeological and paleo-environmental investigations at the Rustad site (32RI775) (Michlovic and Running 2005). The site is situated at the edge of the Sheyenne Delta where the Sheyenne River

runs into the Red River valley, at the confluence of several ecotones. The majority of the cultural deposits were buried in alluvial fans. Late Paleo, Early Plains Archaic, and Plains Woodland period components have been identified. The main component, dating to the Early Plains Archaic, included projectile points identified as Logan Creek-Mummy Cave complex, remnants of a structure, and a significant quantity of bison bone. Paleo-environmental research included geoarcheological investigations and grass phytolith and stable carbon isotope analyses (ibid.:7). The results provide information on the mid-Holocene environment. It appears as though the mid-Holocene environment resembled present conditions (ibid.:178). An entire *Plains Anthropologist* issue details multi-year excavations at the site (Michlovic and Running 2005).

Hollenback (2014) conducted a pilot study exploring technological variability and similarity in Plains Woodland and Plains Village Tradition ceramics in the Devils Lake region of the SRSU. This project established a "baseline for the region and technological understandings of resource use, methods of manufacture, and performance qualities of ceramics from the Middle Woodland to Late Plains Village in the Northeastern Plains" (ibid:4).

Paleo-Indian Period

The majority of evidence of Paleo occupation is limited to isolated artifacts in private collections. Folsom, Agate Basin, Hell Gap, and Browns Valley points have been reported from the Sheyenne basin (Haury and Schneider 1986:39; Johnson 1962:161; Schneider 1982). However, recent archeological and paleo-environmental investigations at the Rustad site (32RI775) have uncovered cultural deposits dating as far back as 9,100 years ago (8,500 radiocarbon years) (Michlovic and Running 2005:169).

Paleo artifacts indicate sites are present in the Sheyenne basin. Paleo artifact finds should be most frequent in the uplands. Schneider (1982:37-41) suggests the density of Paleo sites for eastern North Dakota is probably much less than that of western North Dakota.

The lack of identified sites may be attributed to the limited survey work and the depth of buried deposits. Paleo sites should be found on the surfaces of early Holocene terraces as well as deeply buried within alluvial fans and valley wall footslopes. An example comes from Michlovic and Running (2005:7), "The Rustad site is preserved in early Holocene glaciolacustrine, middle Holocene alluvial (fan), and late Holocene eolian deposits." Strandlines in the Devils Lake area are also likely locations. Floodplain sites dating from this period will probably be well below the water table.

Paleo-Environmental Modeling

Holocene environmental data for this SU is scant. An important research question is what were the environmental conditions during the Paleo tradition in the SU and what resources were available? Excavations should employ techniques that enable pollen, plant

microfossil, and other floral and faunal recovery to allow for climatic and environmental reconstruction.

Cultural Chronology

The presence of Folsom, Hell Gap, Agate Basin, and Browns Valley spearpoints have been observed in private collections (Haury and Schneider 1986; Johnson 1964; Michlovic 1978, 1981). This indicates the Folsom complex (9000-8000 BC), Hell Gap-Agate Basin complex (8500-7500 BC), and Parallel-Oblique Flaked complex (7000-5500 BC) are represented in this SU. Are other Paleo complexes also represented in the SRSU and to what extent? Which Paleo complexes are represented by sites within the SRSU in comparison with sites outside the SRSU? Archeologists should work with artifact collectors to identify types of Paleo points collected and record the sites.

Settlement Behavior

The Paleo settlement pattern in the SRSU is unknown. An interdisciplinary team of geomorphologists, geologists, and archeologists could identify early Holocene landform evolution and human land use patterns. Excavation strategies should be geared toward determining settlement type. What is the range of functional variability that should be expected? What was the most favorable setting for residential base settlements in early Holocene times? What forms of natural or artificial structures were used for shelter? Tipis were suggested to be in use during the Lusk component at the Hell Gap site (Irwin-Williams et al. 1973:45) but is there evidence of other types of features in the SRSU and elsewhere?

Native Subsistence Practices

Big game kill and butchering sites should be expected in former playa lake settings in areas receiving an accumulation of sediments during the mid-Holocene. In the James River SU in Stutsman County, a mammoth was found in a playa setting (Smorada 1969). The estimated date of the site is ca. 10,000 BC. This indicates Pleistocene megafauna were present in the eastern part of North Dakota in Paleo times.

What floral and faunal resources were available and how did the availability vary through the Paleo period? Were there regional differences in Paleo subsistence practices within the Northern Plains at different times during the early Holocene as the result of small-scale environmental changes? Flotation recovery procedures should be applied to all sediments excavated from Paleo sites. Holocene megafauna bone deposits should be investigated by an interdisciplinary research team.

How does their skeletal biology, relative health and nutrition, paleopathologies, and demographics compare with Paleo peoples in other ecological zones/contexts and with more recent groups?

Technologies

The only reported diagnostic artifacts attributable to the Paleo period are points. Future research should be addressed at filling gaps concerning technological systems of these early hunter and gatherers including production and maintenance of lanceolate points, bone, antler, ivory, and shell technologies. Was their technology similar to other Paleo peoples and how do they compare to Archaic technologies? Were people during the Paleo period involved in the same kind of raw materials procurement system as later peoples? What were Paleo mortuary practices?

Artifact Styles

Folsom, Hell Gap, Agate Basin, and Browns Valley points have been surface collected but there have been no intact deposits reported to date. How do the Paleo point type styles compare to those in other parts of North Dakota? What other artifacts are represented and how do the styles compare to surrounding areas?

Regional Interaction

What evidence of regional interaction is represented? How does this compare with other SU? What is the range of lithic raw material types likely to occur here in the Paleo components? Are there other indicators for regional interaction besides patterns of lithic raw material use and artifact style that can be identified in the archeological record for the Paleo period?

Historic preservation Goals, Priorities, and Strategies

Because of the lack of information about Paleo tradition in the Sheyenne River valley, any property with potential to yield information about this historic context would be eligible for nomination to the NRHP, regardless of integrity.

A few historic preservation strategies that have been identified are listed below.

1. Locate evidence of Paleo occupation in the SU by examining privately owned artifact collections in the area. Document collections and record sites.

2. Consult a geomorphologist to identify areas where early Holocene outcrops and landforms are exposed and conduct intensive archeological inventories of those areas. Correlations of sites and landforms will provide useful information for future management.

3. Since little is known about the region during the terminal Pleistocene and early Holocene, testing/excavation should be conducted to the extent necessary in determining settlement type using an interdisciplinary research team. Methods utilized should enable recovery of floral and

faunal remains as well as artifacts. Field strategies should include techniques that will generate information about climate and vegetation.

Plains Archaic Period

Early, Middle, and Late Plains Archaic periods have been identified for the SU. The periods are presently differentiated on the basis of variations in chipped stone tools. During the mid- and late Holocene, essentially modern resources were exploited.

Although a number of sites have been tested or excavated in the SRSU, relatively few have produced diagnostic or datable samples. In addition, the quality of some of the reports has prevented use of the data because artifacts from multiple components have been combined and/or interpretations are not necessarily supported by the data presented. For example, along Devils Lake, excavations at the Irvin Nelson site (32BE208) recovered Early Archaic Oxbow complex artifacts, Middle Archaic McKean Complex artifacts, Late Archaic Pelican Lake artifacts, and Middle Woodland component artifacts. Unfortunately, the site is described as having multiple components (minimum of three, perhaps four) and separation of components is not possible from information supplied in the report (S. Fox 1982). Toom's (2007:iii) reanalysis, including the creation of one general analytical unit, of the Irvin Nelson site suggests there are at least eight cultural components represented.

Paleo-Environmental Modeling

Investigations at the Rustad site have revealed information on mid-Holocene conditions in the Northeastern Plains. Michlovic and Running (2005:178) suggest environmental conditions today are similar to those during the mid-Holocene in the area of the Sheyenne Delta. Alluvial fan deposits at the Rustad site yielded the most cultural material (ibid.:ii). How deep is the mid-Holocene alluvial fill on the various landforms? What was the nature of bottomland habitats throughout the Archaic periods? Environmental reconstruction of Holocene conditions in valley bottomlands, alluvial/colluvial fans, and glaciated plains (pond settings) should be undertaken. During the pre- and post-Altithermal, is there a difference in Archaic adaptation lifeways?

Cultural Chronology

Early Archaic Oxbow complex, Middle Archaic McKean Complex, and Late Archaic Pelican Lake complex artifacts have been recovered from the Irvin Nelson site (32BE208) (Toom 2007:6.1).

The Old Copper complex is represented in the SRSU during the Archaic based on a copper point in the SHSND collections. This socketed copper point (Accession #11683 at SHSND) was found by a private collector near McHenry in Foster County.

Excavations at 32BA428, along the middle portion of the Sheyenne basin, resulted in the recovery of two Late Archaic Pelican Lake points along the shores of Lake

Ashtabula (S. Fox 1984:63-64; Schneider and Haury 1986:40). Pelican Lake-type points were recovered during test excavations at the Borrow site (32RY389), on the north side of Devils Lake (Jackson et al. 2005:11.6). At 32RY77 a Late Plains Archaic Pelican Lake component is present (Picha and Gregg 1991).

Unspecified Archaic components are reported from tested/excavated sites at the Dahnke-Reinke site (32CS29) (Thompson 1990), 32BE419 (Schneider 1983 & 1988), 32RY77 (Floodman 1987; Toom 2000), and 32BA100 (Dill n.d.). Several sites with Archaic components have been recorded during surveys (i.e., Haury and Schneider 1986).

Did the Archaic tradition evolve out of the Paleo tradition or did Archaic peoples migrate into the area? How does the Archaic tradition relate to the Plains Woodland tradition? How did occupational intensity vary during the Archaic period?

Settlement Behavior

What were the Archaic settlement patterns in the Sheyenne River valley; was the valley occupied only temporarily as part of a seasonal round? What types of structures were constructed and occupied by Sheyenne River Archaic peoples? Michlovic and Running (2005:80) report remains of an Early Plains Archaic structure at the Rustad site. All test and salvage excavation projects should attempt to identify the functional settlement types represented by remains from sampled components. Where should Archaic base camp deposits be anticipated, and what types of remains evince base camp activities? How can Archaic mortuary sites be distinguished from later and earlier burial sites? What were Archaic mortuary practices? Were Sheyenne River Archaic peoples physically different from Sheyenne River Woodland peoples?

Identify and evaluate buried Archaic sites in the bottomlands along the Sheyenne River in order to increase our understanding of settlement variation. Attempts need to be made in correlating Archaic functional site types with landforms in order to begin modeling settlement behavior.

Native Subsistence Practices

Investigations at the Rustad site suggest that Early Plains Archaic peoples primarily subsisted on bison but smaller animals likely were exploited (ibid.:125). What were the subsistence strategies of Archaic peoples; what resources were exploited, what was available, and did it vary from early to late periods? Were there actually significant differences between Middle and Late Archaic subsistence practices? Systematic use of fine-screen recovery techniques will be necessary to document changes in Plains Archaic diet and subsistence. Standard flotation sampling of feature and non-feature matrix during excavation should be practiced.

Technologies

How do Archaic technologies compare to earlier and later technologies? Stone, bone, shell, fiber, and other technologies can only be analyzed when discrete Archaic samples are recovered. What technologies were applied to build structures through the different Archaic periods and complexes? Structural remains are most likely to be best preserved in deeply buried alluvial and colluvial depositional contexts.

Artifact Styles

Late Archaic sites are difficult to distinguish from Early or Middle Woodland sites because of similarities in assemblages. What traits can be used to distinguish between Archaic and Woodland corner-notched point styles or Early and Late Archaic side-notched dartpoints (e.g., Oxbow and Yonkee)? Are there diagnostic attributes of core or flake morphology which can be used to identify particular Archaic periods or complexes in lieu of diagnostic points? Definitions should be formulated on the basis of large samples from contexts with multiple unproblematic radiocarbon dates.

Regional Interaction

In other SU there is evidence of less interaction occurring during the Archaic period as compared to the Paleo and Woodland periods. Is this also the case of peoples living in the SRSU? Based on nonlocal material source areas, what is the evidence for changes in directionality of interaction through the Archaic periods? Sourcing of materials should be undertaken when samples (e.g., obsidian, and copper) are recovered from discrete components of known age.

Historic Preservation Goals, Priorities, and Strategies

Although isolated Archaic projectile points are relatively common, only recently have buried occupation sites been identified. When testing or excavations of multiple component sites are conducted, careful attention must be given to separation of artifacts, natural strata, and archeological samples by components. Any property with the potential to yield data concerning this tradition would be eligible for nomination, given sufficient integrity.

Thus far, property and feature types identified in the study area include isolated finds of projectile points, cultural material scatters, and a possible burial location. Anticipated feature types based upon inventories from adjacent study areas include hearths, jump sites, cairns, rock alignments, stone circles, and pits. Functional site types such as field camps, residential bases, locations, stations, caches, and ceremonial are likely to be present.

Below is a list of a few historic preservation priorities/strategies.

1. Consult a geomorphologist to identify land surfaces which date to the Plains Archaic period throughout the SU. Paleo-climatic reconstruction and geomorphological studies of mid-Holocene contexts should be central to investigations of Plains Archaic cultural deposits.

2. In order to locate sites in the river bottoms, conduct deep testing to locate buried paleosols of Plains Archaic age. Identification of Early Plains Archaic components in the SU is a priority. Establish cultural chronology based on chronometrically dated components. Single component deposits need to be identified and sampled to learn more about subsistence, technologies, and artifact styles.

3. Conduct intensive inventories of uplands where Plains Archaic surfaces are exposed.

4. Document private collections and locate additional Plains Archaic sites based upon site leads from private collectors. Complete NDCRS site forms for all identified properties.

Plains Woodland Period

The first evidence for an Early Plains Woodland occupation in the state was documented at the Naze site in the James River valley (Gregg 1987). A burned structure, dating to 550-410 BC, was uncovered 75-80 cm below ground surface (Gregg 1987). Several other sites along the James River may also have Early Woodland components (Gregg et al. 1987). An Early Plains Woodland site has been reported in the SRSU. The Dahnke-Reinke site (32CS29) has a postulated Early Woodland component (Thompson 1990). However, the report is lacking in sufficient description of the stratigraphic relationships of both natural and cultural deposits and analysis of the relationship of cultural artifacts of these deposits to allow for such an interpretation. Diagnostic artifacts recovered from the Lake Coe site (32ED85) include a Besant point base and native ceramics, dating one of the components at the site to the Early Plains Woodland period (Stine and Pool 1992:29; Toom et al. 2007).

Hewes (1949) excavated two mounds at 32BA1. Multiple human burials were found in central log-covered burial pits in both mounds. Among the artifacts associated with these mounds were Besant-Sonota projectile points (Hewes 1949). A radiocarbon date of AD 90±150 has been reported (Neuman 1967). Neuman (1967) suggests a Middle Plains Woodland Sonota complex cultural affiliation. The Rasmussen site (32BA101) is postulated as having a Middle Plains Woodland component (Hewes 1949). The Dahnke-Reinke site (32CS29) is also reported to have a Middle Plains Woodland component (Thompson 1990). A Sonota cultural affiliation is suggested for 32CS29. Ceramics associated with the Sonota complex also were recovered from the Bivouac site (Jackson and Toom 2004:13.1) and the North Gate site (Jackson et al. 2005:9.59). Site 32ED38, a single component site, was dated to the Middle Plains Woodland period with the recovery of a Samantha projectile point (Jackson et al. 2006:8.6).

Along the shore of Lake Ashtabula, 32BA414 has been identified as a Late Woodland component dating around AD 900-1350 (Kuehn and Gregg 1984). This determination is based on a small ceramic sample and a single side-notched arrowpoint. However, as Kuehn and Gregg (1984) also state a Besant/Sonota affiliation is also possible.

At the Sprenger site (32SH205) several stone circles features are present. The site is postulated as dating around AD 400-500. The site apparently represents a Plains Woodland hunting camp where several extractive and processing activities took place (Schneider and Treat 1974).

In 1991, Gregg (1994:iii) identified three components at the Horner-Kane site (32RY77). The deposits date to the Middle Plains Woodland (100 BC-AD 600), early Fur Trade (AD 1600-1700), and historic periods. Later, Toom (2000:iii) identified six known components at the Horner-Kane site, including: Early Transitional Sonota complex (ca. AD 100), Early Transitional Blackduck complex (ca. AD 900), Early Sandy Lake complex (ca. AD 1280), Early Northeastern Plains Village complex (ca. AD 1280), Late Sandy Lake complex (ca. AD 1650), and Late Northeastern Plains Village complex (ca. AD 1650).

The Dahnke-Reinke site (32CS29) and 32CS30 are reported to have Late Woodland components. Sandy Lake cultural affiliations have been suggested for these sites (Gregg et al. 1991; Michlovic 1987; Thompson 1990). At 32CS42 a Blackduck cultural affiliation has been postulated (CRM 1988; Floodman 1987). Unspecified Late Plains Woodland components are reported from 32CS44 (CRM 1988; Floodman 1987) and 32BE419 (Schneider 1983, 1988).

Several undesignated Woodland sites have been recorded. Site 32SH8 is a Plains Woodland campsite (Mallory 1966:44-45). A stone circle and cairn site (32SH203) is postulated to be Plains Woodland in age (Mallory 1966:44-45). Site 32RM101 is a linear earthen mound interpreted as a Woodland mortuary site (Chomko and Wood 1973). On the shore of Lake Ashtabula, 32BA418 is a bison processing site most likely used by Woodland period peoples, although no culturally diagnostic tools or radiocarbon dates were obtained (R. Fox 1982). Additional testing of sites along Lake Ashtabula includes 32BA415 and 32GG5 (S. Fox 1984). The sites were reported as undesignated Woodland occupations (S. Fox 1984), although Haury and Schneider (1986:42) suggest a Plains Village component may be present at 32BA415.

Paleo-Environmental Modeling

During the Early and Middle Plains Woodland periods, coinciding with the latter half of Sub-Atlantic climatic episode, conditions are posited to have been more mesic than today. Population increases and cultural florescence are suspected to have accompanied this climatic amelioration. Cultural deposits associated with well-developed paleosols in alluvial and colluvial settings along the Sheyenne River and its tributaries need to be documented and investigated to further test this proposition.

During the Scandic climatic episode (AD 400-750) intervening between Middle Plains Woodland and Late Plains Woodland/incipient Plains Village climaxes, climatic conditions are hypothesized to have deteriorated for a time with warm and dry weather prevailing during the Middle to Late Plains Woodland transition. Following this, precipitation is hypothesized to have increased to another peak of extended duration during the Neo-Atlantic (ca. AD 850-1250). The return of mesic conditions is posited to have coincided with cultural florescence in the region marked by the Late Plains Woodland-Formative Village transition.

What were the environmental conditions during the Woodland period in the SRSU and what resources were available? Do Early and Middle Plains Woodland cultural deposits occur within buried soil horizons in the bottomlands of the Sheyenne River valley? Holocene geomorphic sequences need to be identified for the main valley of the Sheyenne River and its tributaries.

Cultural Chronology

Early Plains Woodland components are not common in the Northern Plains. An Early Plains Woodland component is present at 32ED85 (Stine and Pool 1992:29; Toom et al. 2007) in the SRSU. They have been identified in the James River valley (Naze site), the Sheyenne River valley (Dahnke-Reinke site), and also tentatively along the lower Red River, north of Winnipeg. It is likely that some identified Middle Plains Woodland or Late Plains Archaic components may in fact be Early Plains Woodland.

Middle Plains Woodland sites have also been identified during survey and/or testing/excavation. The North Gate site (32RY387), the Bivouac site (32RY189), the Horner-Kane site (32RY77), and 32ED38 contain Middle Plains Woodland components identified by diagnostic artifacts (Jackson and Toom 2002, 2004; Jackson et al. 2005, 2006; Toom 2000). To the west ceramics similar to Laurel have been identified in the James River valley (Schneider 1982). Terminal Middle Woodland St. Croix pottery has been recognized in the James River SU at 32SN22 (Snortland-Coles 1985). Both St. Croix and Arvilla complex have been identified to the east in the Northern and Southern Red River SU (Anfinson 1990:220; Gibbon and Caine 1980; Johnson 1973).

A number of sites with Late Plains Woodland components have been identified in the SU. Of those identifiable to a complex, most are assigned to a Sandy Lake cultural affiliation and some to Blackduck. The same is true for the SU to the east (Southern Red River and Northern Red River SU and east-central Minnesota [Gibbon and Caine 1980:62]) and west (James River SU). Does the increase in the number of sites assigned to the Late Woodland period indicate an increase in population density and/or a result of earlier sites being deeply buried? Woodland tradition land surfaces need to be identified throughout the study area.

Did the Woodland tradition evolve out of the Archaic tradition or did Woodland peoples migrate into the area? How does the Woodland tradition relate to the Archaic tradition? Were Woodland peoples ancestral to Archaic peoples or did the two traditions

coexist for a time and represent two or more different cultures? Were Sheyenne River Woodland peoples physically different from Sheyenne River Archaic and Plains Village peoples?

Settlement Behavior

Functional site types identified for this SU are mortuary sites, field camps, residential bases, and processing sites. Most of the mortuary sites are located in the uplands associated with mounds and are assigned to the Sonota complex. Based on the work at 32SN22, mounds are now recognized as repeatedly being used from the Middle Plains Woodland to the Plains Village period (Snortland-Coles 1985). Mound sites and burials are also found along glacial beach ridges. The density of mound sites appears to decrease as one move to the upper Sheyenne River (Haury and Schneider 1986). Numerous burial mounds are reported in the Devils Lake Basin. In turn, numerous habitation sites should also be expected along former shorelines of the principal lakes in the basin (Schneider 1986).

The function, age, and cultural association of linear mounds are poorly understood. Pedological and micro-stratigraphic studies might aid in determining the relative ages of several types of linear mounds. This may be possible particularly at sites where both types of studies occur and/or are joined together.

Excavations at the Naze site in the James River SU documented the first solid evidence for an Early Plains Woodland occupation in the state (Gregg 1987a). There, a burned structure dating to the 550-410 BC time period was unearthed. Similar houses should be expected to eventually be discovered in the SRSU.

The Sonota complex has been identified in residential settlements and burial mounds (Hewes 1949). The range of Sonota settlement types needs to be identified. The same is true for Early and Late Plains Woodland groups.

Native Subsistence Practices

Plant remains, including *Chenopodium* and *Scirpus*, were recovered from the Woodland components at 32CS29. Thompson (1991:68) suggests plants were foraged since there was no evidence of domesticated plant utilization at the Dahnke-Reinke site. Squash seeds from the Lisbon site (32RM201) indicate that Late Woodland people were utilizing garden products (Snortland and Good 1987).

At the Naze site in the James River SU, charred grape, chenopod, and possible marsh elder seeds were found together inside the Early Plains Woodland house. They are interpreted as food remains with the marsh elder possibly indicating the indigenous seedy plants were tended or encouraged (incipient gardening). Middle Plains Woodland inhabitants of the Naze site were exploiting native wild resources, such as acorns, plums, and chokecherries (Gregg 1987).

Archeologically, there is no concrete evidence for domestication, processing, or consumption of plant foods at the Bivouac site where a Middle Plains Woodland component is present (Jackson and Toom 2004:13.2). The recovered archeological materials point to a heavy reliance on bison hunting, processing, and consumption. At the Bivouac site elk and small mammals were exploited to a lesser degree but, interestingly, there is no indication that fish or shellfish were consumed (Jackson and Toom 2004:ibid.).

What were the subsistence strategies of Woodland peoples; what resources were exploited? What evidence is there for the intensified use of indigenous seedy plants and grasses for food during the Plains Woodland period? The full role of plant resources in the diet of these peoples remains to be demonstrated. Fine-screen recovery to collect botanical remains provides direct evidence of Middle Plains Woodland subsistence in the SU. Future analyses of organic residues recovered from ceramics will enhance our understanding of Plains Woodland dietary patterns. Were there significant differences in the roles of plant/vegetal foods in the diets of Sonota groups in the SRSU compared with the diet of Sonota groups in other SU?

Technologies

The earliest ceramic vessel production and use presently known in the Northern Plains occurred during the Early Plains Woodland period. The ceramic vessels found at Naze are technologically and stylistically akin to Midwestern “Black Sand Tradition” ceramics (Gregg 1987). How do the methods of constructing vessels change through time?

Very small, arrowpoint sized corner-notched dart points seem to characterize Late Plains Archaic and Early Plains Woodland components dating to the second half of the first millennium BC elsewhere in the Northern Plains. Do they occur in the SRSU?

The occurrence of substantial quantities of fire-cracked rocks at a number of investigated Sonota sites suggests a long-term reliance of hot rocks for heat transfer. Stone boiling and baking with hot rocks were associated with food production at temporary camps and base camps in other SU. What evidence is there of this in the SRSU?

How do Woodland technologies compare to earlier and later technologies? What types of structures were constructed and occupied? Was the Naze house form used by Middle Woodland and Late Woodland people? Does it represent an early stage in the evolutionary development of the classic Plains earthlodge?

Artifact Styles

As noted in the Major Excavation Projects section above, 1992 investigations of the Horner-Kane site have revealed the presence of six archeological components. The earliest component is Early Transitional Sonota dating to the early Middle Plains

Woodland period. Artifacts recovered in this component include Scalp Punctated ceramic ware and Pelican Lake and Besant projectile points (Toom 2000:7.7). Moreover, a radiocarbon date confirms occupation of the site around AD 100 (ibid.).

Ceramics recovered at the Bivouac site (32RY189) mostly comprise Brainerd ware which corresponds to the late Middle Minnesota Woodland in north-central Minnesota and the Late Plains Woodland in eastern North Dakota (Jackson and Toom 2004:7.1). These sherds generally are net-impressed and thin-walled. Investigators obtained a radiocarbon date of ca. AD 660 from a Brainerd ware piece (ibid.:7.19). To a much lesser extent, Middle Plains Woodland ceramics, exhibiting vertically cord-roughened surfaces and thicker walls, were also recovered at the Bivouac site (ibid.:7.1).

Late Plains Woodland sites are difficult to distinguish from Plains Village sites because both ceramics and lithic assemblages are similar and time periods overlap. What are distinguishing variables? Do distinctive styles of exotic stone, shell, and metal artifacts occur in Sonota cultural deposits in the study area?

Regional Interaction

Native copper and a marginella bead were recovered at the Dahnke-Reinke site (32CS29) from the Sonota component (Thompson 1990). Columella beads have been recovered from a number of mound sites assigned to the Sonota complex. A copper bead was recovered from Burial Mound B at the Baldhill site (32BA1) (Neuman 1975:92).

What nonlocal materials are found in Woodland components of different ages in the SRSU? A comprehensive list should be compiled of the nonlocal materials and exotic artifacts that have been recovered from dated Woodland contexts in the area.

During the Middle Plains Woodland period (100 BC-AD 600) there is evidence of long-distance regional interaction and exchange on the Northern Plains. Three obsidian flakes, along with KRF and SRC debitage, were recovered from 32ED38, a Middle Plains Woodland site (Jackson et al. 2006:8.11, 8.13). Picha (1987) discusses evidence of the interregional Hopewell Interaction Sphere along the James River valley. The paucity of Hopewell Interaction Sphere items in non-mortuary versus mortuary contexts is postulated as being related to excavation and recovery methods. Without fine-screen recovery, many items and even classes of artifacts go undetected (Picha 1987:6).

Historic Preservation Goals, Priorities, and Strategies

Limited testing indicates sites are typically buried. Recovery of artifact and archeological samples that provide a basic characterization of the period is necessary along with chronometric dates. This enables comparisons with other areas and regions.

Property types identified in this SU are cultural material scatters, earthworks, graves, hearths, mounds, cairns, stone circles, and pits. Functional site types identified for this SU at present include mortuary, field camps, residential bases, and processing sites.

Any property with the potential to yield data concerning this tradition would be eligible for nomination, given sufficient integrity. Settlement behavior and other research topics will not be able to be addressed until more intensive work is conducted.

A number of priorities concerning this SU for the Woodland period have been identified. These are listed below.

1. Consult a geomorphologist to identify land surfaces which date to the Woodland period throughout the study area.

2. Woodland sites located on the floodplain are deeply buried. In order to locate sites in the river bottoms, conduct deep testing to find buried Woodland paleosols. There is a need to recover samples of Woodland deposits through controlled excavation in order to better identify the make-up of such components. Rigorous and standardized techniques are needed.

3. Document private collections and locate additional Woodland sites based upon site leads from private collectors. Complete NDCRS site forms for all identified properties.

4. Map (using precision equipment) all existing earthworks that have not previously been mapped within the last 10-20 years.

5. Additional sample survey of the Drift Prairie Freshwater Lakes.

6. Encourage inter-site and inter-regional comparative analyses of ceramic attribute data that will result in stronger ware and type definitions for Woodland ceramics, along with better information regarding geographic distributions.

7. LiDAR and other remote sensing techniques should be used to investigate vestiges of earth mound site complexes in the SRSU (Artz et al. 2013).

Plains Village Period

Several Plains Village sites have been recorded in the Devils Lake area and along the Sheyenne River and its tributaries. The origin of Plains Village has been a topic of much discussion. Early Plains Village origins in the Middle Missouri subarea have been postulated as a local development among indigenous peoples by some researchers and a migration of peoples from the east by others (Toom 1992:137). Lehmer (1971) and Wood (1967) suggest Plains Villagers entered North Dakota from the east. Toom (1992) convincingly presents a case for the migration of peoples from the east due to three interrelated factors (eastern demographic pressures, improved climate, and benefits of economic diversification). Others (Alex 1981; Ahler 1984; Fawcett 1983; Gregg and

Picha 1991; Tiffany 1983) postulate that some Plains Village groups were originally Woodland people who adopted a horticultural lifeway.

Suggested places of origins for the Awaxawi and Hidatsa-proper subgroups include eastern North Dakota, such as the Devils Lake locality. Alternatively, Ahler (1991:47-49) hypothesizes a more eastern origin in central and southern Wisconsin with sites in eastern North Dakota such as Sharbono and Hintz being way-stations for the Hidatsa subgroups migrating west. Part of the problem with investigating the origins of the tradition has been that most archeological investigations of the Plains Village period have been concentrated in the Missouri Trench while relatively little work has been done in the eastern part of the state.

Excavations at 32BA415 resulted in the recovery of a sample of cord impressed pottery (S. Fox 1984). Fox reported this site as having a Woodland component. However, as Haury and Schneider (1986:44) have pointed out "the description and the illustrations of these sherds are indicative of the Plains Village rather than Woodland origin." At 32BA3 a late prehistoric component is reported (Gnabasik and Gregg 1984). The pottery was reportedly similar to ceramics recovered at the Quast site (32LM234).

Excavations were conducted at the Wray Mound near Lisbon. Spirally-grooved pottery was recovered and is characteristic of the Devils Lake-Sourisford burial complex of eastern North Dakota and Manitoba (Syms 1979). Devils Lake-Sourisford was originally thought to represent a Late Woodland manifestation (Syms 1979). However, Devils Lake-Sourisford has been recognized as representing a Plains Village tradition burial mode (Swenson and Gregg 1988). Plains Villagers used mounds as one place of interment but these graves were often intrusive features into Woodland mounds. Other sites with Devils Lake-Sourisford components in the study area include 32RY3, 32RYx6, 32WE401 (Heimdahl), and 32WEx63.

The UND investigators identified six site components at the Lake Coe site (32ED85), including: Middle Plains Woodland--Sonota complex (ca. AD 1-600), Late Middle Minnesota Woodland--Brainerd (ca. AD 460), Late Minnesota Woodland—Kathio/Onamia (ca. AD 870) and Blackduck/Sandy Lake (ca. AD 890), Early-to-Middle Plains Village—Northeastern Plains Village complex (AD 1200-1600), Late Plains Village (AD 1600-1800; possibly Hidatsa), and Early Historic (AD 1800s; possibly Dakota or Yanktonai) (Toom et al. 2007:7.60). The various ceramics were the main indicators of cultural/temporal affiliation of the cultural deposits (ibid.).

The UND salvaged a burial at 32RM201. A female was buried with a skin bag containing bone tools, stone tools, and squash seeds dating to 1145±105 BP (UGa-961). A Plains Village affiliation is suggested based on the radiocarbon date and artifacts from this burial (Snortland and Good 1987).

The Schultz site (32RM215) was also excavated. Numerous authors including Bowers (1948), Wood (1963), Dahlberg (1977), and Syms (1979) have discussed this site. Information on site excavations by Milligan and Hecker is missing. Bowers (1948)

and Wheeler (1963) suggest this site is associated with the Stutsman focus and the Painted Woods focus based on ceramics. This "implies an association with the emergence of the Hidatsa as well as the emergence of the Plains Village tradition in the archeological record of eastern North Dakota" (Haury and Schneider 1986).

The Shea site (32CS101) is a small fortified village along the banks of the Maple River with radiocarbon dates clustering around AD 1448 (Michlovic and Schneider 1993:124). There was also evidence for corn horticulture based on cultigens and scapula hoes recovered at the site. Fire and refuse pits and a palisade interior to the fortification ditch were uncovered during excavation. Ceramics include Sandy Lake ware and Red River ware. Points were primarily small triangular unnotched specimens (Michlovic and Schneider 1988). If Sandy Lake pottery is affiliated with the prehistoric Dakota (Anfinson 1979), this site provides the first evidence of the Dakota living in fortified villages during this time period (Michlovic and Schneider 1988:38). Other fortified villages recorded in this SU include 32RM225 (Lucas), 32RM401, 32RM402, 32RM225, 32RM1 (Biesterfeldt), and 32RM77 (Zeck).

Holley et al. (2006) have employed geophysical technologies to investigate archeological sites along the Maple River. At the Utke site (32CS4494) investigations included remote sensing. This technique showed no signs of a ditched settlement at the site (ibid.:16). Unlike the Utke site, a preliminary report discusses a ditch at the Sprunk site (32CS4478) as revealed by geophysical data (Michlovic and Holley 2006). A radiocarbon date and ceramics place the Sprunk site within the Shea phase of the Northeastern Plains Village complex (ibid.:1).

At the Irvin Nelson site (32BE208), excavations recovered Plains Village ceramics associated with a radiocarbon date of AD 1550 (Fox 1982). Toom (2007:iii) proposes that there are at least eight prehistoric components present at the Irvin Nelson site, including one dating to the Plains Village period. Plains Village ceramics were also recovered at 32BE419. Schneider (1983:7-20) suggests 32BE419 "may be associated with a tradition which maintains that a group of Hidatsas once lived on Graham's Island" (Schneider 1983:7-20). Excavations at the Horner-Kane site (32RY77) revealed a multi-component site complex that includes the Early Northeastern Plains Village complex (ca. AD 1280), Late Sandy Lake complex (ca. AD 1650), and Late Northeastern Plains Village complex (ca. AD 1650) (Gregg 1994; Toom 2000:iii).

Biesterfeldt (32RM1) is a Post-Contact Coalescent village postulated to have been occupied by the Cheyenne around AD 1750. Ethnohistoric accounts and archeological evidence indicate the Cheyenne occupation (Wood 1971). Cheyenne peoples may have entered the Sheyenne valley by AD 1600 (Strong 1941). In contrast, Dalan et al. (2007:18) propose that the Cheyenne did not travel from the east to settle the site. Rather, the authors (ibid.:19) state:

> The preliminary evaluation, which serves as a working hypothesis, leads us to conclude that there was likely a trend towards increased Middle Missouri River influence in the Sheyenne valley and a corresponding

> decline in southeastern and eastern influences….Presumably, the vacuum created with the decline in Oneota-related designs is filled with bona-fide examples of Coalescent tradition wares…we argue that Biesterfeldt does have antecedents in the region.

Diagnostic artifacts recovered from the Bivouac site excavations date three components, including the protohistoric Late Plains Village period (Jackson and Toom 2004:13.1). Dating the Late Plains Village period component resulted from the recovery of ceramics resembling those found at the Biesterfeldt site (32RM1) (ibid.).

A Post-Contact Coalescent bison kill site (32SH7) has been recorded and test excavated (Larson 1976). The limited test excavations revealed processing areas away from the kill area as well as the kill location.

Paleo-Environmental Modeling

What were the environmental conditions during the Plains Village period in the SRSU and what resources were available? During the Neo-Atlantic episode, climatic conditions are suggested to have improved which corresponds with the spread of Plains Village horticulture. Did the climate change have a significant impact in the adoption of corn agriculture by Plains Villagers in the SU?

Cultural Chronology

As mentioned previously, the origin of the Plains Village lifeway has been a topic of debate. Research indicates the Devils Lake area and Sheyenne River valley was used by early Villagers. Possible Hidatsa occupations include Sharbano (32BE419), Schultz (32RM215), and possibly Horner-Kane (32RY77). An Awaxawi Hidatsa village is reported to have been present at Grahams Island (Will 1924:328). Bowers (1948:20-21) discusses a Mandan origin myth that indicates one subgroup of the Mandan would have resided for a time in the Sheyenne River valley and north of Devils Lake. A Plains Village (possibly Hidatsa) cultural affiliation is also suggested for Devils Lake-Sourisford burial components at sites such as 32RM19 (Wray), 32RY3, 32RYX6, 32WE401 (Heimdahl), and 32WEX63. At the Shea site (32CS101), a Dakota occupation around AD 1448 is hypothesized. The Cheyenne may have occupied the Biesterfeldt village site (32RM1) during the late 1700s. The Crows, Araphahos, and Atsinas have also been identified as prehistoric residents of the region (Hewes 1948).

What evidence is there that the Plains Village tradition evolved out of the Woodland tradition? What evidence is there that the Plains Village peoples migrated into the area? Were Woodland peoples ancestral to Plains Village peoples or did the two traditions co-exist for a time and represent two or more different cultures? What characterizes Plains Village mortuary practices? How can they be distinguished from later and earlier burial sites?

In testing and excavation programs, techniques and/or specialists need to be utilized which enable the separation of multiple components in order to establish a reliable database concerning lithic, ceramic, bone, and shell technologies. This needs to coincide with collecting samples that provide absolute dates.

Settlement Behavior

Fortified Plains Village encampments are reported along the Sheyenne and Maple rivers in the SRSU (Michlovic and Holley 2006; Michlovic and Schneider 1993). Some Plains Villagers interred members of their dead in burial mounds. At Biesterfeldt and the Hintz (32SN3) sites, Plains Village groups resided in earthlodges nearly identical to those of the Mandan, Hidatsa, and Arikara along the Missouri River. At the Shea site (32CS101), evidence of houses has not been revealed from the excavations (Michlovic and Schneider 1993). What type of structures were constructed and occupied by the various Plains Villagers in the study area? What were the Plains Village settlement patterns in the SRSU? Is there a greater density of Plains Village sites in the lower Sheyenne basin than the middle or upper parts?

Variations in the levels of Devils Lake between 1882 and 1969 have been reported (Floodman 1989). Variation in lake levels throughout time undoubtedly affected settlement patterns and should be considered in recommendations for surveys and during surveys.

Native Subsistence Practices

From the little that is presently known, bison hunting was central to the overall subsistence, but what other faunal resources were exploited? To what extent was gardening practiced, and how much dependence was there on wild plants? It is imperative that fine mesh screening and flotation be implemented to sample for wild seeds and domesticated plant remains in cultural deposits.

What were the subsistence strategies of the Plains Villagers; what resources were exploited? How did Plains Village gardening practices change through time? How important were garden crops to early Plains Village groups? Did adoption of any new species during the Plains Village period result in very great increases in storable food surpluses? How did the hunter-gatherer-gardener lifeway of the Plains Villagers in the SRSU compare to other Plains Villagers in other SU? To what extent were fish and other riparian resources utilized?

Technologies

Stone, ceramic, bone, and shell materials comprise much of the archeologically recoverable material culture for Plains Village groups. Chipped stone tools were made from KRF and locally available materials such as SRC and other quartzites. Granite and quartzites were used for pecked and ground stone tools.

How do Plains Village technologies compare to earlier and later technologies? We need baseline information concerning lithic, ceramic, bone, and shell technology from single component, well dated sites.

Artifact Styles

Chipped stone tools that are diagnostic of the Plains Village period would include small, well-made, straight-sided triangular projectile points with deep side-notches set well up off the base. Another, possibly diagnostic, Plains Village chipped stone tool is the long, thin bifacially prepared unilateral cutting tool that was often hafted in a bison rib handle (Gregg 1993).

Michlovic and Swenson (1998) offer a classification system for ceramics from Northeastern Plains village sites. What are distinguishing artifacts styles between Late Woodland and Plains Village assemblages? Were Sandy Lake ware and the Northeastern Plains Village ceramics (Buchanan Flared Rim ware, Owego Flared Rim ware, and Lisbon Flared Rim ware) systemically related at sites or do they represent different occupations ?

Regional Interaction

At Devils Lake-Sourisford sites, exotic items made from marine shell, catlinite, and copper are present. Columella beads and marine shell masks are made from whelk and conch from the Gulf or Atlantic coast. Catlinite from southwestern Minnesota was carved into tubular pipes or engraved tablets. From the Great Lakes region, copper beads and copper liners (for the marine shell masks) have been recovered.

At some of the fortified village sites, catlinite has been recovered. Michlovic (1990) presents archeological findings (including items of obsidian, catlinite, and KRF) and ethnohistorical evidence of an extensive trade network in the Northeastern Plains during the late prehistoric period.

What are the mechanisms of trade for nonlocal materials? Can trade routes be identified? What other evidence is there for regional exchange?

Historic Preservation Goals, Priorities, and Strategies

Relatively little work has been conducted in the SRSU. Baseline data for all of the research topics is needed from excavated and dated sites. More excavation and testing are needed.

Property types recorded in the study area are cultural material scatters, earthlodge villages, earthworks, fortifications, graves, hearths, mounds, and pits. Functional site types presently identified for this SU are residential bases, mortuary, and bison kill and processing areas. Any property with the potential to yield data concerning this tradition would be eligible for nomination, given sufficient integrity.

A few suggested priorities are presented below.

1. Consult a geomorphologist to identify land surfaces which date to the Plains Village period throughout the study area.

2. Testing and excavation of sites using rigorous field techniques to maximize information collected is needed. Use fine mesh screening and flotation in order to collect seeds and domesticated floral remains in cultural deposits.

3. Conduct intensive inventories of unsurveyed areas in the SRSU.

4. Document private collections and locate additional Plains Village sites based upon site leads from private collectors. Complete NDCRS site forms for all identified properties.

5. Map (using precision equipment) all identified small fortified sites.

Equestrian/Fur Trade Period

The Equestrian Period (AD 1780-1880) spans the time subsequent to the introduction of the horse and the arrival of Euro-American trade goods to the region. Euro-American exploration and fur trade expansionism provided written records documenting cultural and environmental conditions.

Paleo-Environmental Modeling

Climatic conditions during late prehistoric and protohistoric times are thought to have been cooler and moister (referred to as the Neo-Boreal episode or Little Ice Age) than the present (cf. Grove 1988). Concordant with these moister conditions was a posited buildup in the regional biomass including the bison herds. Early traders such as Alexander Henry wrote of flourishing animal and plant communities in the Red River valley (cf. Gough 1988; Reid and Cannon 1928). Did the Little Ice Age end early in the Equestrian period?

Cultural Chronology

There are no defined and named protohistoric taxonomic units of the Equestrian tradition in the SU. Tribes posited to have been in the territory during early historic times include Dakota (Yankton and Yanktonai), Cheyenne, Assiniboine, and Plains Ojibwa and Ottawa.

Representative samples of trade materials collected using fine-screen recovery during testing and major excavation will aid in developing a chronological scheme.

Settlement Behavior

How did protohistoric and historic Equestrian Nomadic settlement behavior differ from that of prehistoric nomadic hunter-gatherers? In the SRSU, many stone circle sites have been recorded. However, most have not been identified as to cultural/temporal affiliation. In other study areas, most stone circle sites are suggested as being temporary camps occupied by prehistoric Woodland peoples (cf. Deaver and Deaver 1987). However, many were constructed by equestrian nomads and equestrian Villagers. Techniques and strategies need to be utilized that will enable identification of cultural/temporal affiliation.

Native Subsistence Practices

Equestrian Nomadic subsistence practices involved hunting principally bison, plus deer and pronghorn, supplemented by foraging for wild plant foods such as prairie turnip (*Psoralea esculenta*) (cf. Denig 1961:10-13; Reid 1977). What differences should be expected in floral remains recovered from Equestrian Nomadic versus Plains Village winter residential bases? It is imperative that fine-mesh screening and flotation be implemented to sample for seeds of tobacco and other plant macrofossils in cultural deposits.

Technologies

During late prehistoric times, Plains Woodland and Plains Village societies experienced varying degrees of cultural change associated with shifts in settlement and subsistence practices. The introduction of the horse and fur trade expansionism provided changes in existing native technologies. What evidence of this is seen in the artifact assemblages?

Artifact Styles

In-depth study of various regional artifact styles provides useful clues for separating or combining the material culture of particular ethnic groups on the Northern Plains. Are there recognizable stylistic differences in archeological remains?

Regional Interaction

One of the components at the Lake Coe site (32ED85) contained a glass trade bead, an iron bangle, and an English Delftware plate fragment suggesting a possible Dakota or Yanktonai Sioux affiliation (Toom et al. 2007:7.60). Regarding this identification investigators (ibid.) note, “The piece of English Delftware, which we believe would not have been available in the area until the AD 1800s, allows us to date this component rather precisely. It is possible that the piece of Delftware derives from a later historic European American component, but we find this less likely in the absence of any other clear evidence of such an occupation of the site.” A blue glass trade bead also was recovered from the Dahnke-Reinke site (Thompson 1990:48). What evidence of

regional interaction is there? Did interactions between the Plains Villagers and their non-Village neighbors change during this period? Did many of the trails identified on early historic maps witness use during protohistoric times?

Historic Preservation Goals, Priorities, and Strategies

Ethnohistorical research provides the necessary background information to generate information concerning prehistoric and protohistoric settlement and land use for the SU. Little is known about this period, and thus any property with the potential to yield data concerning this tradition would be eligible for nomination, given sufficient integrity.

A few suggested priorities are presented below.

1. Conduct ethnohistorical research to provide background information (climate, environmental, cultural, etc.) and site lead information regarding this tradition.

2. Follow up #1 with surveys to identify and record properties.

3. Document private collections and locate additional Plains

4. Equestrian sites based upon site leads from private collectors.

5. Testing and excavation of sites using rigorous field techniques to maximize information collected is needed.

6. Conduct noncollecting, metal detector surveys of a sample of ring features at a sample of ring sites in an effort to identify historic metal artifacts indicating historic period site use.