

Becky L.

Archeological Overview and Assessment,  
Niobrara/Missouri National Scenic Riverways,  
Nebraska and South Dakota

By Anne M. Wolley Vawser  
And Alan J. Osborn

DRAFT

**DRAFT**

**Archeological Overview and Assessment,  
Niobrara/Missouri National Scenic Riverways,  
Nebraska and South Dakota**

by

Anne M. Wolley Vawser  
and  
Alan J. Osborn

**DRAFT**

Midwest Archeological Center  
Lincoln, Nebraska

September 1994

## LIST OF TABLES

Table 1.	Chronology of archeological work in the NIMI study area .....
Table 2.	Paleo-Indian complexes and dates for the Northwest Plains .....
Table 3.	Environmental data for the Niobrara River Basin .....
Table 4.	Archeological remains by County for the Norden Study Unit .....
Table 5.	Artifact distributions for the Norden Study Unit .....
Table 6.	Distribution of site types and material remains in the Scenic and Recreational sections of the study area .....

Figure 12.	Known Historic Period sites in the NIMI study area. Red sites are Ponca, green Omaha, yellow Otoe, black Sioux and brown Santee .
Figure 13.	Archeological Resources and Architectural resources, Niobrara River Basin . . . . .
Figure 14.	Archeology of the Niobrara River Basin Western, Central and Eastern Units . . . . .
Figure 15.	Archeological Assemblages, Central Niobrara River Basin . . . . .
Figure 16.	Site size class distribution, Central Niobrara River Basin, Norden Study Area . . . . .
Figure 17.	Comparison of surface artifacts; total assemblage vs. isolated finds, Norden Study Area . . . . .
Figure 18.	Artifact and raw material type, Central Niobrara River Basin, Norden Project . . . . .
Figure 19.	Bifacial tools vs. raw material type, Central Niobrara River Basin, Norden Project . . . . .
Figure 20.	Site type and nature of deposits, Central Niobrara River Basin, Norden Study Area . . . . .
Figure 21.	Site type and depth of deposits, Norden Study Area, Central Niobrara River Basin . . . . .
Figure 22.	Artifact assemblage diversity for Norden Area Sites, Central Niobrara River Basin, Norden Study Area . . . . .
Figure 23.	Assemblage diversity and site surface area, Central Niobrara River Basin, Norden Study Area . . . . .
Figure 24.	Assemblage diversity and sample size, Central Niobrara River Basin, Norden Study Area . . . . .
Figure 25.	Assemblage diversity and sample size, Central Niobrara River Basin, Norden Study Area . . . . .
Figure 26.	Assemblage diversity distribution, Central Niobrara River Basin, Norden Study Area . . . . .

## INTRODUCTION

This report provides an overview of the archeological resources (prehistoric and historic) of the various designated units and study areas associated with the Niobrara/Missouri National Scenic Riverways (NIMI) (Figure 1). The purpose of the overview is to pull together information pertinent to archeological resources that has been disseminated in the reports of the numerous projects that have taken place in the study area over the last century. This compilation of the data is necessary to address the current and future management and research needs of the riverway.

A large number of archeological field projects have been conducted in the study area, mostly in response to development activities such as a reservoir construction, highway improvements or utility facilities. As a result of the larger reservoir projects and the 1978 Missouri National Recreational River designation several overviews were written to summarize the extent of our knowledge of the archeological data for those areas (Adamczyk 1975; Hanenberger 1980; Helgevold 1980; Ludwickson et al. 1981; Blakeslee and O'Shea 1983; Pepperal and Falk 1983; Falk et al. 1985). Several overviews from adjacent areas also exist (Benn 1986). This overview draws on these previous summaries, bringing together information from smaller areas or shorter time depths to cover the entire area of NIMI. However, this report also summarizes the results of file searches and data analysis conducted for the study area. ✓

The following sets of information are provided in this report. 1) A discussion of the procedures used in completing this report. 2) A chronological listing of each known archeological project conducted within the NIMI study area. 3) A summary of the spatial and temporal character of the archeology of the region (e.g., culture chronology). 4) A summary of the nature of the archeological remains found within the study area. 5) A list of important research questions/recommendations which should ✓  
✓  
✓  
✓

help guide determinations of significance for the resources, future archeological investigations, and current and future management.

It is important to note that this overview does not attempt to include extensive information concerning either ethnographic or historic cultural resources in the area other than those that have been documented archeologically. The ethnographic and historic aspects of the study area have been documented in other reports (see Franklin et al. 1994; Ritter et al. n.d.).

Each of these reports was consulted to determine when and where archeological work was conducted and the extent of the work, location and time was then summarized in Table 1, the Chronology of Archeological Work. This information was also used to compile the map in Figure 2 which represents the spatial extent of archeological investigations within the study area.

~~NOT IN THIS~~  
~~TEXT~~

Finally, a review and analysis of all of the above mentioned materials was undertaken to complete this overview and assessment for planning and management purposes. The methods used in collecting all of this information have resulted in a thorough coverage of the archeology of the area. In addition, the format in which the data has been compiled not only allows for the data to be maintained and updated as new work is completed, it also allows for additional analysis or research to be conducted as is needed for future management needs.

Table 1. Chronological listing of archeological work in the Niobrara/Missouri National Scenic Riverways

Date	Investigator	Location and Work Accomplished
1941	Elmer Meleen	Excavations at the Scalp Creek site (39GR1) in Gregory County, South Dakota (Hurt 1952).
1951	Wesley Hurt	
1950	Smithsonian Institution	Reconnaissance surveys of potential reservoir locations along the Niobrara River. Survey locations include; the Long Pine Creek area about a half mile from its confluence with the Niobrara, twenty-one miles along the Niobrara with an arm extending about eight miles up Plum Creek, part of a twelve mile stretch of valley along the Niobrara near the eastern border of Cherry County, and approximately eleven miles of the Niobrara River valley near Valentine. A total of twenty two sites were found at these locations during the Smithsonian Institution River Basin Surveys. Also surveyed during this time was the Fort Randall Dam project area in South Dakota (Cooper 1955; Wheeler and Smith 1953; Wedel 1947, 1948, 1949).
1961	Robert Hall	Test excavations at the Tabor site along Lewis and Clark Lake (Hall 1961).
1963-1964	James Howard Robert Gant	Reconnaissance survey of the wave cut terraces in the Gavin's Point Reservoir of Lewis and Clark Lake. Testing of certain sites followed the survey. Five previously recorded sites were revisited, twenty-one new sites were located in 1963, and testing of five sites was conducted in 1964 (Howard and Gant 1966).
1976	Patricia Williams	Reconnaissance survey along the Big Sioux River at Sioux City, Iowa and North Sioux City, Nebraska prior to flood and erosion control projects. One archeological site was recorded

How ABOUT with over? See Sigstad + Sigstad

might be useful to include institutions/organization ALSO

1977	Joseph Lazio	Reconnaissance survey of an irrigation system project easement area on the east shore of Lake Francis Case. No significant cultural resources were located (Lazio 1977b).
1977	Judy Wood	Cultural resource reconnaissance survey of a proposed irrigation system project location on the east shore of Lake Francis Case. No cultural resources were recorded in the project area (Wood 1977a).
1977	Judy Wood	Reconnaissance survey of an irrigation system construction project location on the north bank of Lake Francis Case. No significant resources were located (Wood 1977b).
1977	Larry Zimmerman Patricia Burns	Reconnaissance survey of five Missouri river bank stabilization sites near Vermillion. No significant resources were discovered in the project areas (Zimmerman and Burns 1976).
1978	Carole Angus Carl Falk	Intensive survey of three proposed Missouri River Bank Stabilization projects (Sunshine Bottom, Goat Island, and Ionia Bend). No significant cultural resources were located (Angus and Falk 1978).
1978	Keith Ryder	Monitoring of construction at the Gavin's Point Unit on Lewis and Clark Lake. Site 39YK203 was located in the borrow area and there seemed to be one feature left at the site (Ryder 1978).
1978	Des Stuart	Reconnaissance survey of a proposed irrigation system project on the east bank of Lewis and Clark Lake. No cultural resources were located in the project area (Stuart 1978).
1978	of U.S. Army Corps Engineers	Reconnaissance survey of a proposed water of intake facility on the northwest bank of Lewis and Clark Lake. Two new sites were located (U.S. Army Corps of Engineers 1978a).

1979	Rebecca Boyd	Pedestrian reconnaissance survey of a proposed cutbank stabilization project area on the east bank of the Missouri River. No resources were found (Boyd 1979).
1979	Ned Hanenberger	Reconnaissance survey of the east bank of the Missouri River trench from Pickstown to Springfield, South Dakota. A total of fifty-one sites were recorded, including forty-eight new sites and three previously recorded sites. Forty-two of the sites located fall within the boundaries of the scenic riverways (Hanenberger 1980).
1980	Timothy Nowak	Reconnaissance survey of an easement requested as right-of-way for watering livestock on government land within the Lewis and Clark Lake project. No significant cultural resources were found (Nowak 1980a).
1980	Timothy Nowak	Pedestrian surface survey of three tracts of land on the Lake Francis Case Project being considered for grazing lease renewal. No new archeological sites were located (Nowak 1980b).
1981	Doyle Owens	Pedestrian investigation of an old stream channel of the James River lying parallel to the Missouri River. No significant cultural resources were found (Owens 1981a).
1981	Doyle Owens	After-the-fact inspection of a rerouted road easement in the Fort Randall Dam/Lake Francis Case area. No resources were impacted by the reroute (Owens 1981b).
1981	Timothy Nowak	Investigation of reported exposed human graves and skeletons on the west side of St. Phillips Bay. Fourteen open and empty graves were exposed on the beach (Owens 1981c).
1981	Doyle Owens	Survey of five acres of land between two small knolls located on a high bluff near Volcano Hill

- Edward Lueck  
Peter Winham
- to document the original land area and the number of burials (Hannus et al. 1986).
- 1987 John Ludwickson  
Rob Bozell
- Survey and National Register evaluation of the Verdigre Northwest Federal-aid secondary road project in Knox County, Nebraska. One archeological resource was located during the survey (Ludwickson and Bozell 1989). 1988  
Also
- 1987 Edward Lueck  
Adrien Hannus
- Monitoring of bank stabilization around and intensive survey of the Gavin's Point Site (39YK203) (Lueck and Hannus 1987).
- 1987 Paul Brockington  
Dennis Dahms
- Test excavations at ten sites (39BO44, 39BO53, 39BO56, 39BO57, 39BO58, 39BO59, 25KX57, 25KX71, 25KX203, and 25KX67) at Lewis and Clark Lake (Brockingham et al. 1987).
- 1988 Richard Berg
- Survey, documentation and test excavation at proposed Santee housing project location. Also conducted an inspection of the reported vandalization of 25KX30. No artifacts were collected (Berg 1988).
- 1988 Edward Lueck
- Intensive pedestrian survey of the Riverside Park redevelopment project area in Yankton. No significant cultural resources were found (Lueck 1988).
- 1989 Richard Berg
- Reconnaissance survey of a proposed erosion control project area along the northeast bank of the Missouri River in Clay County. No cultural resources were located (Berg 1989).
- 1990 Richard Berg
- Reconnaissance survey of a proposed irrigation pipeline burial project area in Charles Mix County. No resources were located (Berg 1990a).
- 1991 Richard Berg
- Reconnaissance survey of Camp Rosenbaum (Austin Property). No archeological resources were located (Berg 1991). Table 1

## SPATIAL AND TEMPORAL CHARACTER OF THE ARCHEOLOGICAL RESOURCES

The Niobrara/Missouri National Scenic Riverway lies within an area which is defined as the Plains Culture Area (Figure 3). Archeologists have defined the Plains Culture Area on the basis of the character of material remains from archeological sites and have outlined a sequence of changes in those remains. Documentation of these changes in association with materials which can be dated using absolute dating techniques (e.g., radiocarbon) has allowed archeologists to assign a general time frame to variations in material culture. Using these and other techniques, a broad sequence of culture history has been defined for the area including NIMI that is divided into nine periods and/or cultural affiliations: Paleo-Indian, Archaic, Woodland, Great Oasis, Initial Middle Missouri, Central Plains Tradition, Coalescent Tradition, and Protohistoric. Archeologists have continued to use and improve on this system of sequential ordering in an attempt to understand the prehistory of human occupation and utilization of the area. Although this system has been a means of organizing the vast amount of cultural material remains found in the area based on differences in artifact style and type, it has not always facilitated the study of human adaptive behavior and change. Archeologists also seek to understand the process of human adaptation to variations in the physical and social environments in which they lived. Use of this temporal framework in the following overview is meant to summarize the generalizations archeologists have made from observing changes in material culture, and includes a broad application of those changes to interpretations of adaptive strategies such as subsistence patterns and community organization.

### Paleo-Indian

The earliest well documented archeological sites on the North American continent date to the Paleo-Indian Period (ca. 11,500 to 7,800 B.P.), however, considerable debate has continued for some time in archeology as to whether Paleo-Indians were the first to

people the continent. Poor preservation and questionable documentation and dating techniques have resulted in the hypothesis regarding earlier cultures remaining as a question yet to be answered (Frison 1991). There appear to be no known resources in the vicinity of the study area that would lend any credence to the pre-Paleo-Indian argument.

The Paleo-Indian Period is well documented in Western and High-Plains areas; however, few well documented sites are known for the study area vicinity. The Paleo-Indian Period is represented by a large group of named 'cultures' which are divisions based primarily on variations in projectile point technology and to a lesser extent subsistence strategies. Frison (1991) provides excellent documentation on the distribution of various projectile point types and associated radio-carbon dates for the Northwest Plains. This being the most complete dataset of its kind for the general area, it was used to produce the chronology in Table 2.

All of these names<sup>d</sup> projectile point types were used by hunters that roamed the continent following large game animals such as Mammoth and the extinct *Bison antiquus*. They probably traveled in small groups, were very mobile and shifted both their technology and subsistence to smaller game hunting as the larger mammals became extinct.

Very few manifestations of the Paleo-Indian Period are represented within the study area (Figure 4). Four sites have been identified as having possible Paleo-Indian Period materials. All of these affiliations are based, however, on the presence of lithic tools that are comparable to Paleo-Indian period types. Most of these materials were found on the surface by local residents or during surface surveys. Two other sites have been identified as representing Folsom period use based on the discoveries of Folsom type points by local residents. None of these sites have been investigated to any extent leaving little knowledge of Paleo-Indian occupation in the study area.

(coyote and wolf) as well as small game and fish (rabbit, chub, bullhead) (Shutler and Anderson 1974).

This broadening of subsistence appears to intensify during the later part of the period and may be reflected in the increased diversity of archeological remains typical of Archaic sites in the area. Given the location of the eastern portion of the project area near the boundary between the Plains and Prairie regions, we would also expect to see some differentiation between Archaic remains found in the scenic verses the recreational segments of the river. Carlson and Steinacher (1978) suggest Archaic adaptations in eastern Nebraska represent a response to the diverse yet more closed environment of the Missouri Basin whereas western Archaic sites reflect a continuation of the hunting strategies of the Paleo-Indian Period. A similar argument is made by Benn (1986) who suggests a Prairie/Plains Late Archaic (4,000 to 2,500 B.P.) in northwest Iowa represented by more efficient and selective hunting and gathering strategies. He also suggests that these patterns set the stage for changes resulting in the advent of the Woodland culture. A more in depth analysis of the materials at sites throughout the study area may support such hypotheses.

There are 24 sites within the study area that have been associated with Archaic affiliations; four are in the scenic area and 20 in the Missouri recreational areas (Figure 5). The majority of the affiliations have been made on the basis of diagnostic projectile point found at the sites. Sixteen of the sites have been tested or excavated and ten of these sites are known to have buried deposits. Four of the sites are also known to have buried deposits because they were discovered eroding from banks or terraces but have not been tested. At least 13 of these sites are known to have been used again after the Archaic Period.

For the study area, the most well documented buried Archaic deposits were found at the Tramp Deep Site (25KX204). This site was exposed by wave action from Lewis and Clark Lake eroding the bank (Howard and Gant 1966). Archaic deposits dating to

2,960±125 B.P. were discovered at about 16.5 feet (ca. 5 meters) below the surface. A firepit, many lithics, a corner notched projectile point and abundant bison and deer were compared to those from a similar occupation at Signal Butte in western Nebraska (Strong 1935).

### Woodland

Woodland occupations along the plains/prairie boundary begin around 2,400 years ago and continued through around 800 years ago. Occupations during this period for eastern portions of the study area were divided into four subunits by Ludwickson et al (1981). These included Early Woodland (ca. 2,400 to 2,000 B.P.), Middle Woodland (ca. 2,000 to 1,600 B.P.), Early Late Woodland (ca. 1,700 to 1,300 B.P.) and Late Late Woodland (ca. 1,300 to 800 B.P.). Several Phases and complexes of the Woodland period in eastern Nebraska have also been identified, generally on the basis of ceramic characteristics and geographic distribution (Ludwickson et al. 1981; Benn 1986). Plains Woodland sites in the western portions of the study area tend to have less ceramics and be identified on the basis of projectile point typologies (see Pepperal and Falk 1983).

The Woodland Period is generally characterized by increasing complexity from the simple Archaic hunting and gathering lifestyle. This complexity is expressed in the archeological remains through the increasing amount as well as variety in type and style of tools, shelter and faunal remains. Patternings of style (such as ceramic decoration) in specific areas are also generally argued to indicate occupation by specific cultural groups (Benn 1986). Additional complexity is expressed in mortuary and other practices that include extensive use of symbolic items, which has been interpreted by archeologists to indicate increasing ritual or religious behavior in Woodland groups (Ludwickson et al. 1981; Benn 1986).

Brown 1968; Zimmerman and Bradley 1978; Blakeslee and O'Shea 1983; Lueck 1987; Lueck and Hannus 1987). The Gavin's Point Site is a multicomponent site containing deposits from Archaic through Historic Yankton Sioux. This site has been determined eligible for the National Register and was stabilized in 1987 (Lueck and Hannus 1987).

Five sites in eastern portion of the study <sup>?</sup> are have been attributed to Late Woodland occupations. The Scalp Creek site (39GR1), Gavin's Point (39YK203), the Tabor Site (39BO201) and 25DK3 are representative of Loeske Creek occupations (Ludwickson et al. 1981; Blakeslee and O'Shea 1983). All of these sites have been tested subsurface and contain significant information concerning Late Woodland occupations in the area. One other site, 25DX26, is given a general Late Woodland affiliation based on a single ceramic rim sherd (Ludwickson et al. 1981).

### Great Oasis

Sites from this period (1,150 to 850 B.P.) occur along the eastern portion of the study area riverway and are contemporaneous with Late Woodland occupations (1,250 to 750 B.P.) in Nebraska and Mill Creek occupations of the Middle Missouri Tradition (1,100 to 600 B.P.) in extreme southeast South Dakota. The nature of Great Oasis as a tradition of its own or a phase of the Woodland or Middle Missouri Tradition is a continuing question in the archeological literature. The character of the archeological remains have been sufficient to suggest that the Great Oasis was an independent culture group practicing extensive trade (specializing in shell) with other contemporaneous groups, especially in the eastern areas of occupation (Benn 1986). This lifestyle of trade apparently resulted in a diffusion of Woodland characteristics through Great Oasis to Mill Creek and the advent of maize for Great Oasis peoples without practicing horticulture. In the western portions of the Great Oasis occupation, subsistence is believed to have been more similar to the broad based Woodland hunting and gathering economy supplemented with limited maize horticulture (Ludwickson et al. 1981). These arguments will require additional analysis of

poorly documented. Throughout Oneota sites house floors vary along with site size and subsistence, although this probably included hunting and gathering supplemented with horticulture.

Five sites with Oneota affiliations have been documented in the study area; three in the Lewis and Clark Lake area and two along the Missouri Recreation River segment to the east (Figure 11). Blakeslee and O'Shea (1983) suggest that site 39YK39 immediately east of Gavin's Point Dam may be eligible for the National Register as it is an apparent Oneota bison kill site and camp.

Another group of Protohistoric Period sites are known as Redbird Phase. The Redbird Focus was originally identified by Wood (1956, 1965) and he has completed the most extensive investigations of sites from this Phase. Sites are small villages along terraces and bluffs. These documented village sites with round earthlodges are limited to the area around the Niobrara River and Ponca Creek although several sites have been attributed to Redbird occupations on the basis of surface collections in the scenic portion of the study area (Figure 11) (Ludwickson et al. 1981). That Redbird represents Pawnee and/or Ponca occupations has been suggested by Wood (1956, 1965), however, the lack of trade goods at the sites and no absolute dating leaves this determination to further interpretation (Ludwickson et al. 1981; Blakeslee and O'Shea 1983). In all 15 sites associated with Redbird occupations are found within the study area. Four of these are in the Niobrara Scenic section and the rest in the eastern portion of the study area (Figure 11). One of the Redbird sites (Redbird I, 25HT3) located in Holt county is listed on the National Register of Historic Places.

### Historic Period

A number of Native American sites dating to the Historic Period have also been documented in the study area. These include Ponca, Omaha, Otoe, Sioux and Santee

ARE YOU  
SURE  
THIS?

Both are  
"Sioux"

(Figure 12). One site that dates to this period in the study area is listed on the National Register of Historic Places. The Ponca Fort site in Knox County near Verdel is a large village site dating to about 1795. The Homer site, an Omaha site on the National Register, is located just outside the study area near Homer in Dakota County. These historic period occupations are not discussed in detail here as they will be considered as a part of the Ethnographic Overview for the study area (see Ritter et al. n.d.)

THE "BIG VILLAGE"  
of THE OMAHAS?  
IF SO, CITE  
O'SHEA + LUDWIGSON  
1992

# ARCHAEOLOGICAL RESOURCES OF THE NIOBRARA RIVER BASIN IN NORTHERN NEBRASKA

## Introduction

The purpose of this section is to provide a brief overview of the archaeological record of the Niobrara River Basin. This basin extends for more than 571 kilometers (355 miles) ~~along miles~~ along a west-to-east gradient along the boundary between the Central and the Northern Great Plains. The basin encompasses approximately 33,697 square kilometers (13,000 square miles) in northern Nebraska. Given its physiographic location and orientation, the Niobrara River Basin offers archaeologists an exceptional opportunity to study the relationships between past human behavior and environmental variation.

## Environment

The Niobrara River defines the northern edge of the vast Sand Hills regions of central Nebraska, the southwestern edge of the Nebraska-Dakota Plains, and the southeastern edge of the Pine Ridge escarpment (Weaver 1965:8, Figure 7). Its course can be envisioned as a dramatic east-to-west environmental gradient that spans the 100th meridian- the transition from the tall grass prairies of the Midwest to the short-grass plains of the West (See Risser 1990). "The increased xerophytism from east to west was revealed by the forbs by a decrease in the number of species, smaller stature, and the presence of many Great Plains species" (Weaver 1965:102). Risser (1990:135) states, "Thus, most climatic data suggest that the environment is inherently more variable and more stressful to plants in the westward portions of the North American central grasslands."

The Great Plains climate is one of extremes in temperature, precipitation, and wind. The climate in this region has been referred to as the "turbulent heart of the continent" (Anderson 1975:153). It is controlled by distant sources including the polar

Table 3.

County	Location	Ann. Precip.	Coeff. Var. Ann. Precip.	Snowfall	Jan. temp.	July Temp.	Frost-Free Season	Coeff. Var. Frost-Free Season
Holt	Atkinson	20.15	20.00	37.6	18.8	74.1	141	10.78
Knox	Santee	22.91	19.85	28.5	21.3	76.9	154	NA
Boyd	Lynch	22.95	19.25	26.1	22.1	73.6	136	NA
Keya Paha	Springview	20.31	18.99	36.0	21.4	72.9	143	NA
Brown	Ainsworth	20.86	26.51	51.4	21.2	75.5	149	NA
Cherry	Valentine	18.59	24.03	41.8	21.2	74.2	152	10.63
Sioux	Harrison	19.92	29.49	59.6	19.1	69.6	123	16.04

The survey area stretched from west-to-east some 32 kilometers (20 miles) along the Niobrara River from Allen Bridge in Cherry County to Turkey Creek approximately two kilometers (1.2 miles) downstream from the proposed Norden Dam site in Brown and Keya Paha counties. The Norden Dam site, in turn, was 2.4 kilometers (1.5 miles) downstream from the Norden Bridge. The total survey area included 9,664 hectares (23,880 acres) of uplands, river terraces, and river bottomland (Peperl and Falk 1983:11, Table 1). The Niobrara River serves as a boundary between the Sandhills region to the south and the heavily dissected uplands to the north. More detailed discussions of the physiography, geology, and ecology of this area can be found in Pool (1914), Fenneman (1931), Beed (1936), Tolstead (1942), Jones (1964), and Osborn (1977, 1979).

Archaeological Manifestations. A total of 196 artifact concentrations and 219 isolated artifacts were recorded during Phase 1 intensive pedestrian survey for the Norden Archaeological Project (Pepperl and Falk 1983:32, Table 3). The artifact concentrations consisted of 118 lithic concentrations; 54 lithic and bone concentrations; 8 lithic and ceramic concentrations; and 16 lithic, ceramic, and bone concentrations (Pepperl and Falk 1983:23, Table 3). One hundred fifty-six (79.6 percent) of the artifact concentrations were not assigned cultural historical affiliations. Fifteen (7.6 percent) of these sites were assigned to "pre-Plains Village period complexes." Eighteen (9.2 percent) sites were placed within the "Plains Village period complexes." Five (2.5 percent) sites were believed to be "multiple component prehistoric complexes." The inability to assign almost 80 percent of the artifact concentrations to a culture historical taxon was due to the lack of so-called temporally-sensitive or diagnostic artifacts (e.g., chipped stone projectile point types, ceramic types, and/or historic trade items) (Figure 13).

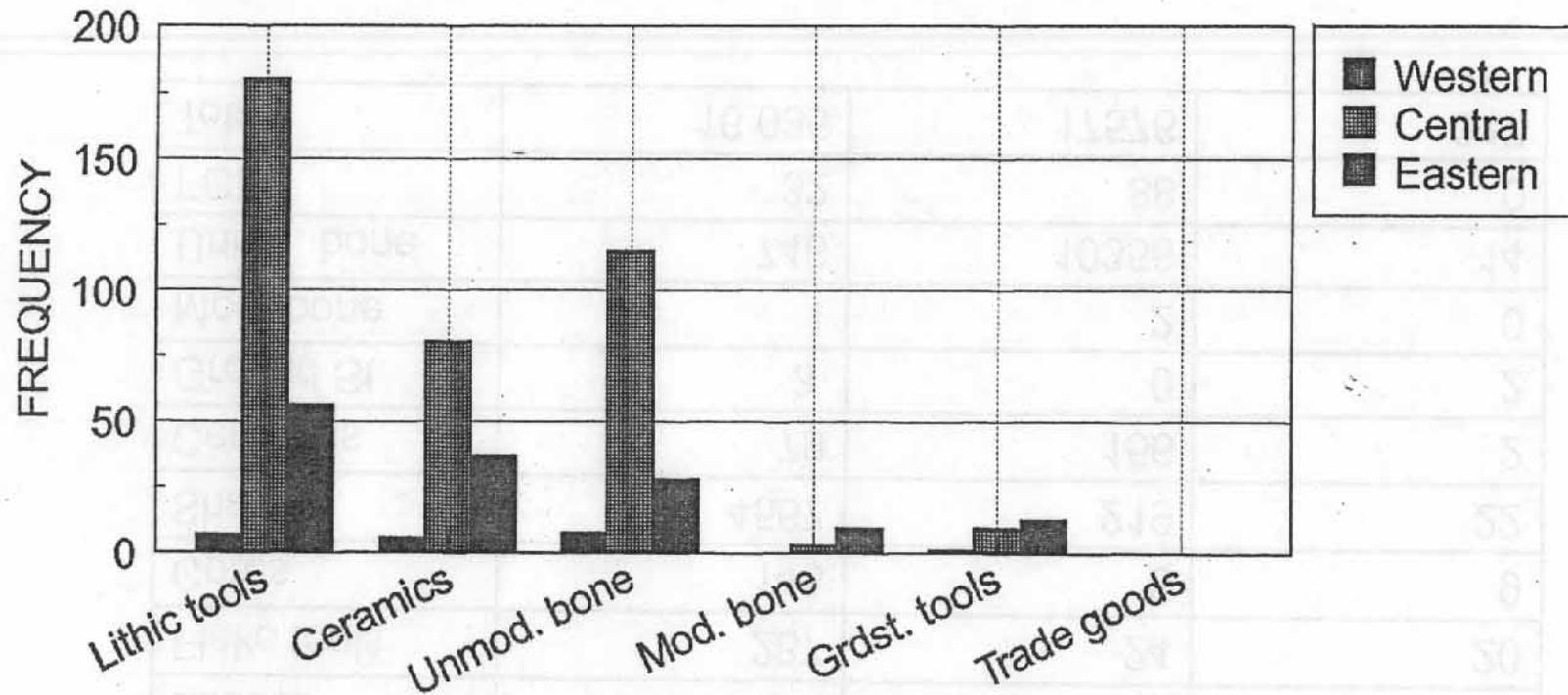
Site Density. Archaeological site density for the entire project area (9,664 hectares or 23,880 acres) equaled 2.0 sites per 100 hectares (0.82 sites per 100 acres). Isolated artifact density for the project area equaled 2.27 "IOs" per hectare (0.92 per 100 acres;

Pepperl and Falk 1983:23, Table 3). Site density varies slightly for the area south of the river versus north of the river; 0.86 sites per 100 acres for the south and 0.78 sites per 100 acres for the north). These differences are not, however, statistically significant. There does appear to be a pronounced increase in site numbers along an east-to-west gradient. Site densities increase from one site per 213 acres (eastern Unit A) to one site per 140 acres (central Unit B) to one site per 48 acres (western Unit C; Pepperl and Falk 1983:27).

Mapping and Testing. All sites and isolated artifacts were mapped and given proveniences based on U.S.G.S. and UTM coordinate systems. A total of 150 sites was tested and 432 test units were excavated (Pepperl and Falk 1983:23, Table 3). Pepperl and Falk (1983:29) point out that "subsurface materials are shallowly buried with 75% of these sites containing deposits within the upper 40 cm below surface" and that "More deeply buried remains are primarily (75%) ... [sites with] ... bone debris."

Artifact Assemblages. Comparison of artifact assemblages collected from isolated surface remains, surface scatters, and excavated contexts revealed little variation. Chi square tests demonstrated that surface and subsurface materials were not statistically different (chi square = 16.0000; df=15; p=0.3821). A chi square test also revealed that the assemblage of isolated surface artifacts was not statistically different from the total assemblage of surface scatter artifacts (chi square = 16.000; df=15; p=0.3821) or the total excavated artifact assemblage (chi square = 16.000; df=15; p=0.3821). These observations suggest that, at the total assemblage level, surface scatters, buried materials, and isolated surface materials represent the same parent population. There were few stratified and/or deeply buried sites observed in the Norden Project study area. Surface artifact scatters, then, appear to be deflated archaeological deposits. Isolated surface artifacts may also then reflect materials derived from buried deposits or artifact assemblages that were not visible during the survey (Tables 4 and 5; Figures 14 through 21).

# ARCHAEOLOGY OF THE NIOBRARA RIVER BASIN WESTERN, CENTRAL, AND EASTERN UNITS



SITE ASSEMBLAGES CONTAINING:

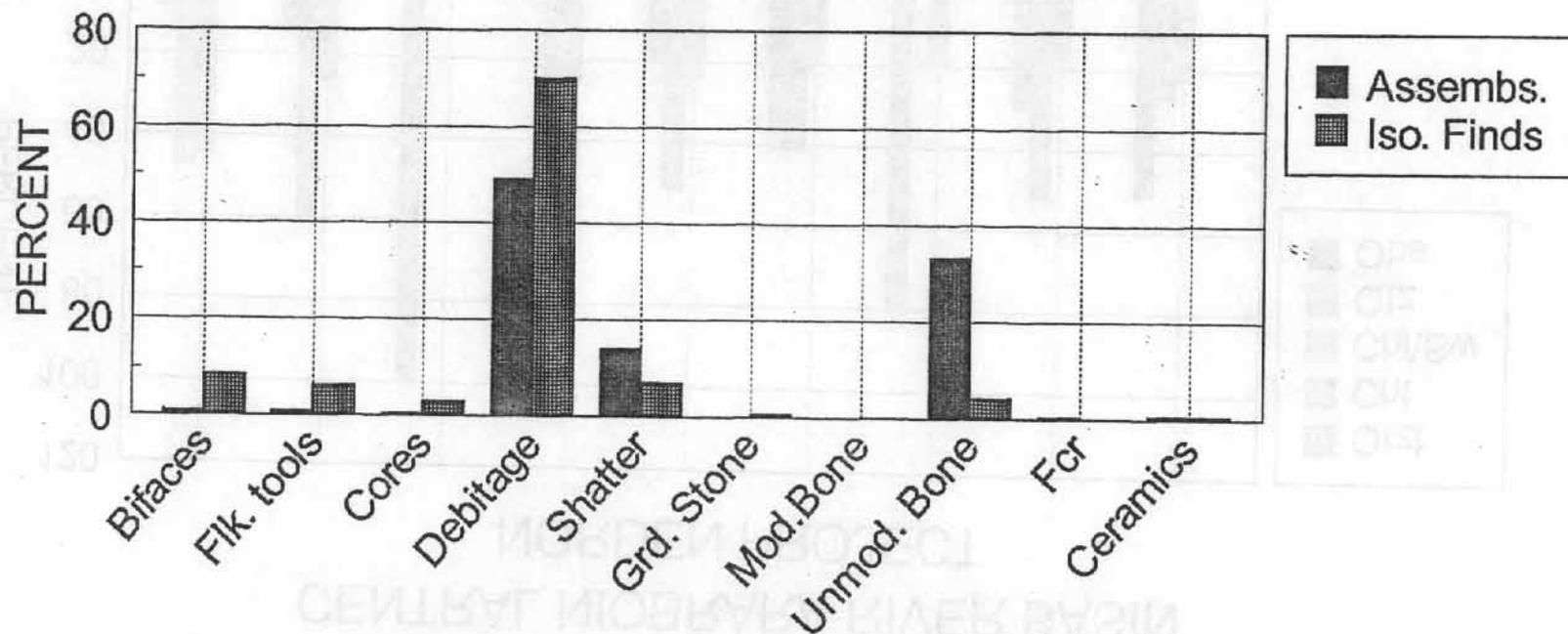
Data based on Pepperl, Bozell, and Snyder 1983

Figure 14.

Table 5.

Artifact	Surface	Buried	Isolated
Bifaces	304	23	27
Flake tools	287	24	20
Cores	143	8	9
Shatter	4567	219	22
Ceramics	79	156	2
Ground St.	3	0	2
Mod. bone	1	2	0
Unmd. bone	746	10356	14
FCR	32	88	0
Totals	16,035	17576	317

# COMPARISON OF SURFACE ARTIFACTS TOTAL ASSEMBLAGE VS ISOLATED FINDS NORDEN STUDY AREA



ARTIFACT CATEGORIES

Data from Pepperl and Falk 1983

Figure 17.

BIFACIAL TOOLS VS. RAW MATERIAL TYPE  
 CENTRAL NIOBRARA RIVER BASIN  
 NORDEN PROJECT

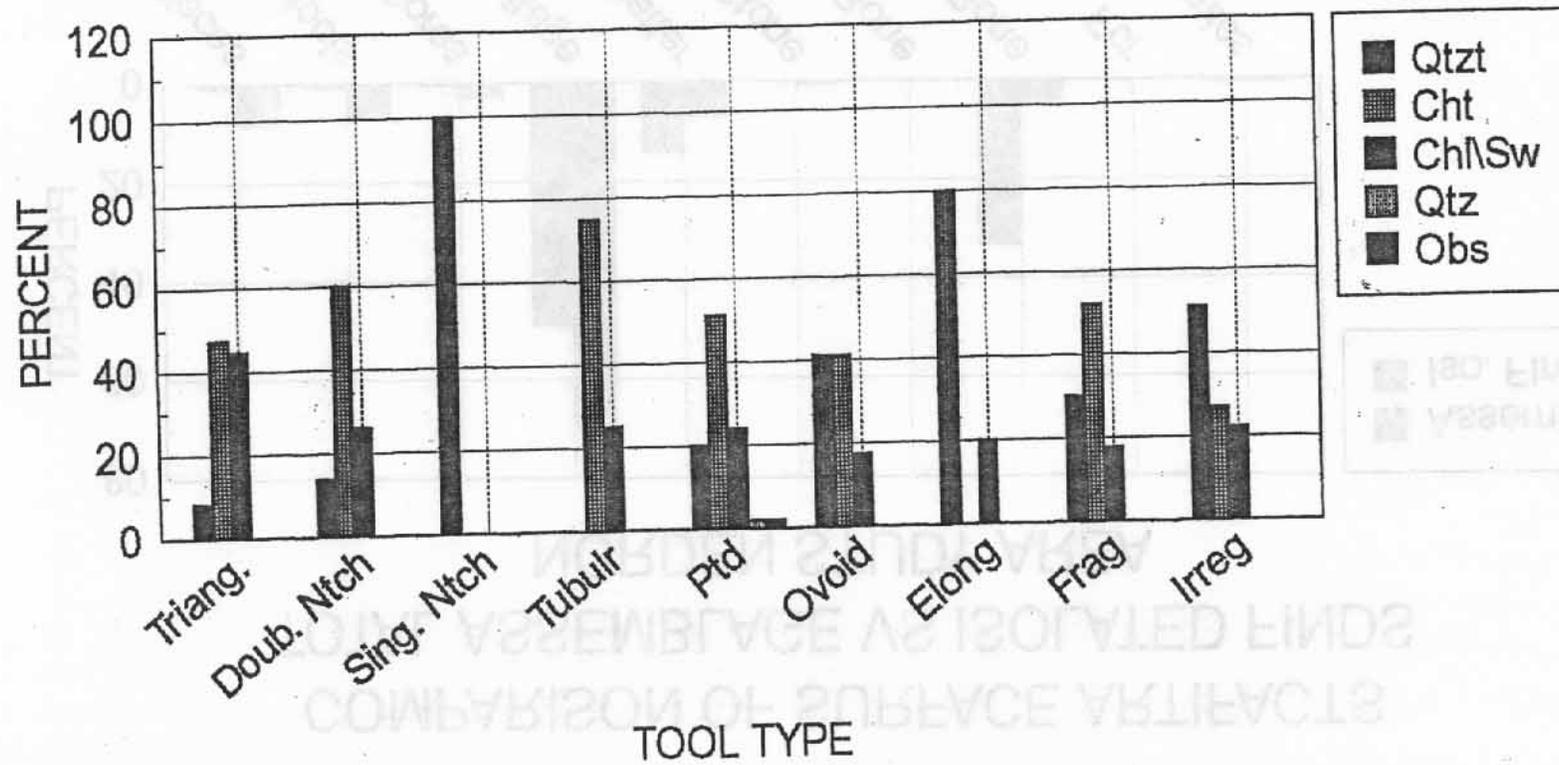
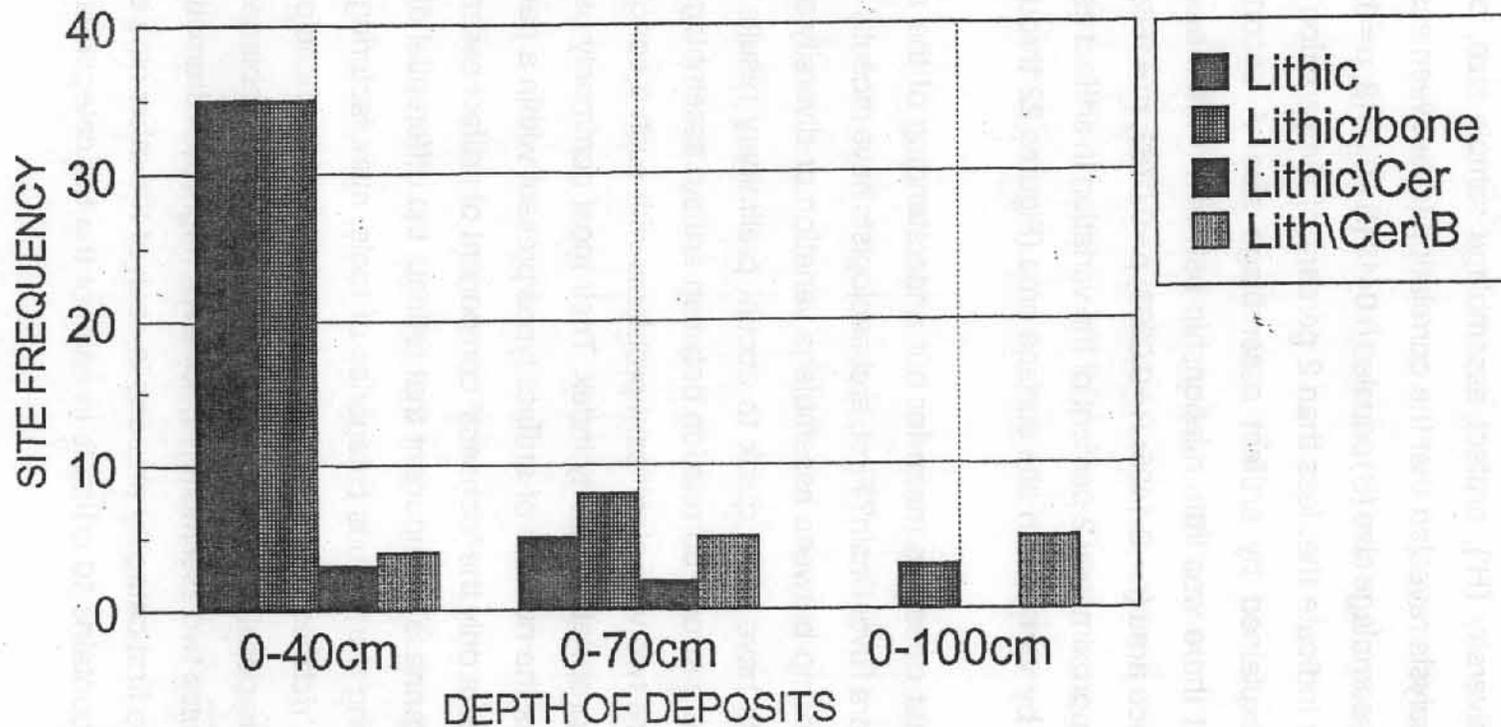


Figure 19.

SITE TYPE AND DEPTH OF DEPOSITS  
NORDEN STUDY AREA  
CENTRAL NIOBRARA RIVER BASIN



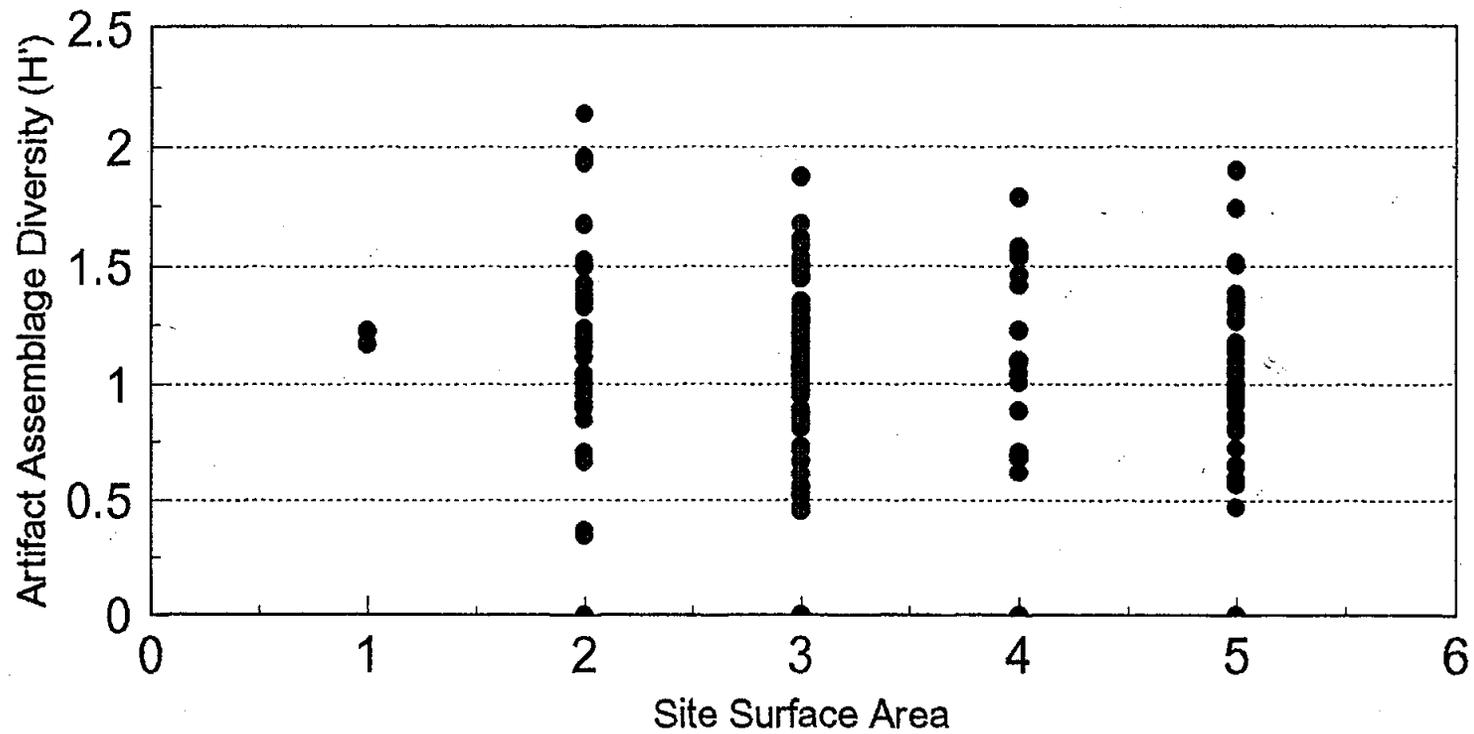
Data from Pepperl and Falk 1983

Figure 21.

Artifact Assemblage Diversity. Analysis of artifact assemblage data collected during the Norden Project indicate that there is little, if any, relationship between artifact assemblage diversity ( $H'$ ), artifact assemblage sample size, or site surface area. A regression analysis revealed that the correlation ( $r$ ) between assemblage diversity ( $H'$ ) and artifact assemblage size ( $S$ ) equaled 0.0419 ( $R=0.0018$ ;  $p=0.8168$ ;  $n=168$ ;  $df=166$ ). These results indicate that less than 2 percent of the variation in artifact assemblage diversity is explained by artifact assemblage size. A second regression analysis indicated that there was little relationship between artifact assemblage diversity ( $H'$ ) and site surface area ( $r=-0.1425$ ;  $R=0.0203$ ;  $p=0.0763$ ;  $df=166$ ;  $n=168$ ). This analysis tells us that approximately 2 percent of the variation in artifact assemblage content can be explained by variation in site surface area (Figures 22 through 28).

So, what does this mean for our understanding of the archaeology within the central Niobrara River Basin? First, archaeologists have recently investigated the nature of the relationship between assemblage variation or diversity and sample size. Some archaeologists have been quick to accept preliminary results of their analyses that indicated a very strong correlation between artifact assemblage diversity and sample size. There are two very significant problems with such a conclusion. First, they have used an inappropriate diversity index. Their most commonly used measure of artifact "diversity" was the number of artifact types present within a particular collection. This measure reflects only the "richness" component of artifact assemblage diversity. There is also an "evenness" component that reflects the differential distribution of individual artifacts among the various categories of tools, manufacturing debris, ceramics, and ecofacts. If "richness" is the only component of archaeological diversity that is measured, it is possible then to equate two artifact assemblages that each contain ten tool types. These two assemblages, however, might look dramatically different. One has 91 tools in the first category and one in each of the other nine categories. The second assemblage contains 10 artifacts in each of the ten categories.

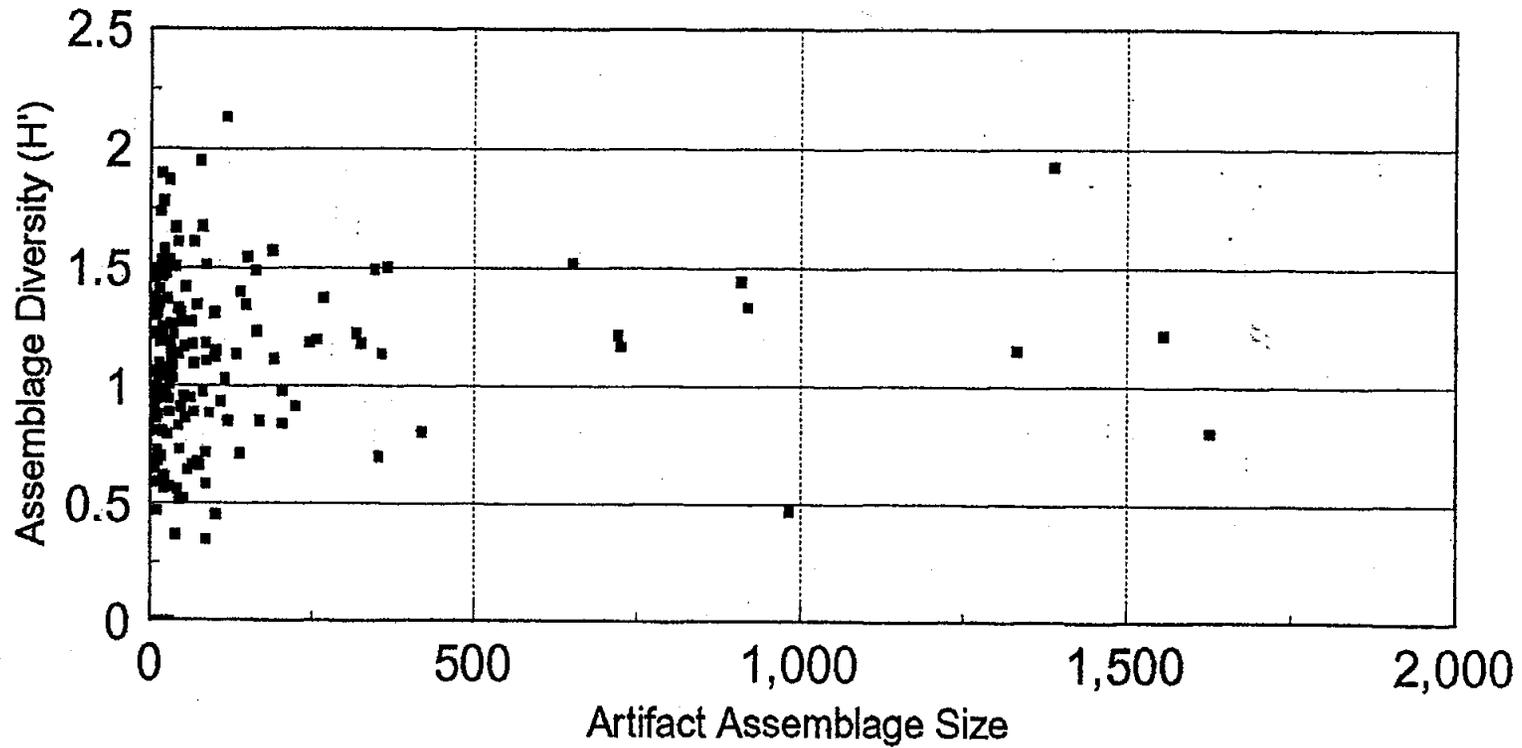
Assemblage Diversity and Site Surface Area  
Central Niobrara River Basin  
Norden Study Area



Data from Pepperl and Falk 1983

Figure 23.

Assemblage Diversity and Sample Size  
Central Niobrara River Basin  
Norden Study Area



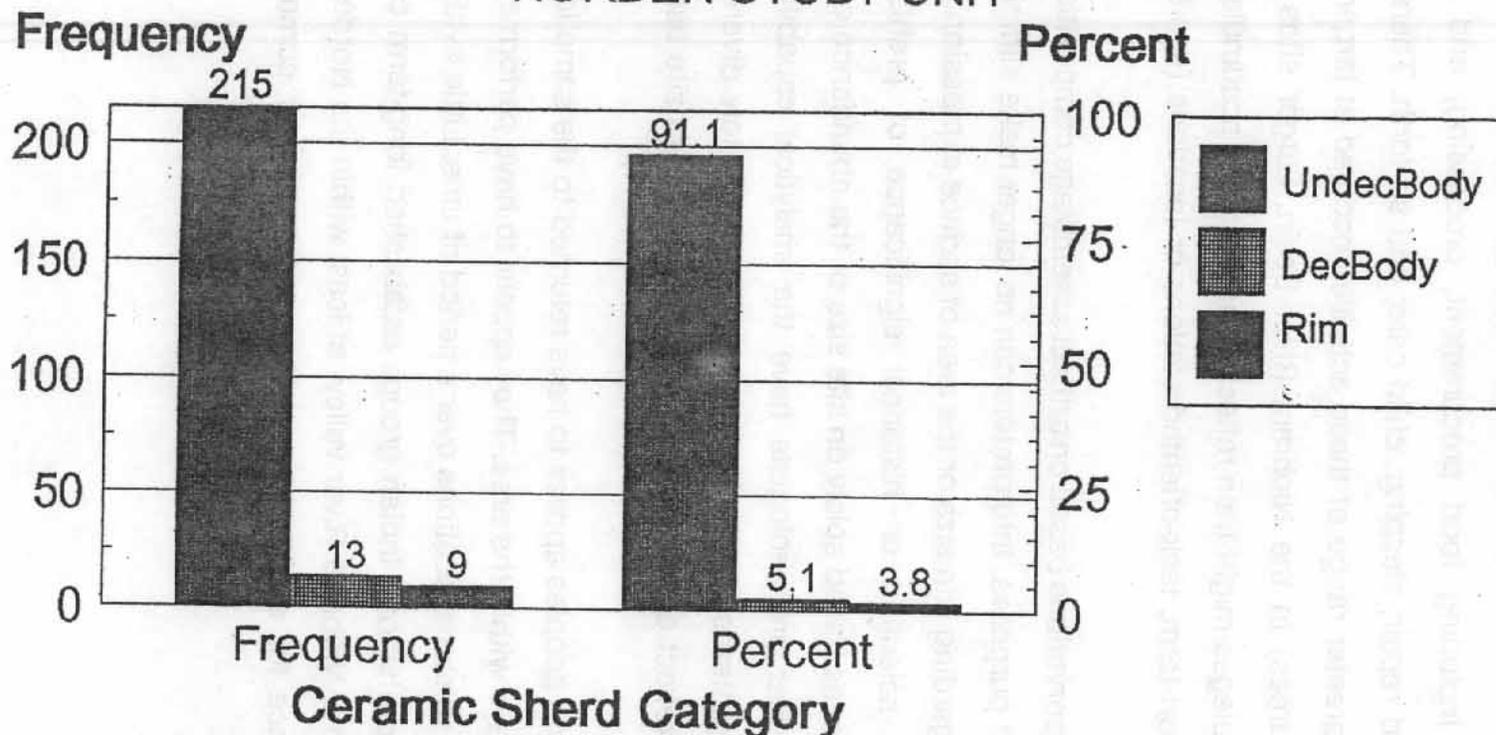
Data from Pepperl and Falk 1983

Figure 25.

# PREHISTORIC CERAMIC ASSEMBLAGE

## CENTRAL NIOBRARA RIVER BASIN

### NORDEN STUDY UNIT



Data from Falk and Pepperl 1983:B62, Table B-16

Figure 27.

Archaeologists have frequently assumed that larger sites represented base camps or residential situations. Given this assumption, they have also assumed that larger sites would then contain artifact assemblages that represented a broad range of daily activities including food procurement, processing, and consumption; tool manufacture and repair; sleeping; child care; and so forth. There is no evidence to suggest that a greater range of these activities occurred at larger sites (reflected by larger surface areas) in the Niobrara River Basin. Larger sites with relatively low diversity assemblages might then reflect an accretion or accumulation of a number of overlapping, short-term, task-oriented stations or locations (see Binford 1978; 1980; 1982).

These observations based on artifact assemblage composition are quite relevant for management purposes. Interpretors can no longer make simple determinations of site function regarding site size or the area of surface expression. They can no longer determine the scientific or historical significance of prehistoric and historic archaeological sites based solely on site size or the abundance of artifacts. They can say, however, that archaeologists have the analytical capabilities to assess site formation and patterns of land use in the past. Large low diversity surface scatters most probably reflect a recurrent or redundant pattern of site use.

Prehistoric peoples appear to have returned to the same location on a number of different forays within the area. They appear to have performed the same kinds of activities at these same locations over a period of time. Little evidence was found that suggests that prehistoric Indian groups established long-term camps or residences within the central Niobrara River valley- at least within the Norden Study Area. There was no evidence for earthlodges, tent or tipi camps, or communal burial area or cemeteries.

## ARCHEOLOGICAL RESOURCES OF THE MISSOURI RECREATIONAL RIVERWAY STUDY AREA

### Introduction

Discussions in the previous sections have documented that there is a great deal of variation between the archeological resources in the two major sections (western scenic and eastern recreational) of the riverway study area. The previous section discussed the nature of the archeological remains in the Niobrara River Valley, specifically the materials recovered during the Norden Project. Although a great number of archeological research projects have taken place in the area of the recreational sections of the riverway, no project matches the Norden Project in terms of area covered, intensity of investigation and quality of analysis. However, using the data collected for the sites within the recreational study area, the general character of the archeological remains can be described.

### Cultural Affiliation

As noted in the previous section, the majority of archeological sites discovered during the Norden Project survey could not be assigned to any specific cultural affiliation due to the lack of diagnostic materials or datable features. In the scenic river study area there are 321 archeological sites of which 244 (76%) are identified only as Prehistoric Native American. Another 27 sites (8%) have an unknown affiliation (Figure 29). In contrast, in the Missouri recreational section of the study area, only 129 (31%) of the 409 known archeological sites have only a Prehistoric affiliation and only another 79 (19%) have an unknown affiliation.

There are two probable explanations for the greater number known affiliations for sites in the eastern portion of the study area. First, many of these sites are multicomponent sites with occupations over a longer period of time. This tends to result in a greater

quantity as well as sometimes depth of deposits at the sites increasing the likelihood of diagnostic materials being present. In other words, the nature of the sites themselves as camps or more permanent habitations rather than the apparent transient use of many of the sites further west along the Niobrara result in a greater ability to associate them with a specific affiliation.

Second, the material culture remains left by groups occupying the eastern portion of the study area are more distinct and have also been more closely studied than those of the western portion of the study area. This should not necessarily be presumed to indicate that different groups occupied the two areas. It is also very probable that this difference in material remains reflects a difference in the use of the two areas. The resources of the western portion of the area are well suited to a general hunting and gathering subsistence while the eastern portion is more suited to horticultural practices. Local groups may have practiced a season round where crops were planted in the spring in the east and then groups moved to the west to hunt and gather wild foods until returning east in the fall to harvest crops. However, it is also entirely possible that the areas were occupied by different groups practicing different subsistence patterns. The current data available does not provide an answer to this question.

### Site Type

The types of archeological sites discovered in the two sections of study area also tend to differ somewhat. There tend to be a greater variety of types of archeological remains in the eastern portion of the study area. Table 6 indicates that several types of sites occur in the east, such as bison jumps, earthworks, mounds, and tepee rings, that have not been found in the western areas. The actual material remains at these sites also vary from east to west. For example, while there are a great number of open artifact scatters in both sections of the study area, the actual types of materials remains at these sites differ between the two areas. The eastern artifact scatters are more likely

to have ceramics (31%) than the western sites (16%). The eastern sites area also more likely to have groundstone tools present (7% in the east and less than 1% in the west).

The nature of these differences are again most likely attributable to the variations in the ways the two areas were used and the amount of time they were occupied. These relate back to the discussions above concerning the types of resources available in the two areas and how they may have been used over time.

### Variations in Site Locations, Types and Affiliations

A variety of patterns in site location, type and affiliation have been noted in the sites of the eastern portion of the study area. Some site types, for example, tend to cluster together in certain areas while other types of sites are widely dispersed. Earth works and mounds tend to cluster along the bluffs of the Missouri river (5 sites) and at the mouths of creeks that feed into the river (8 sites at Indian Hill). Similarly, large village sites were clustered in the Indian Hill area (7 sites) and in the vicinity of Ponca Creek near Ponca State Park (9 sites). There is also a large cluster of 26 sites along Choteau Creek and 24 sites at Sunshine Bottom. In contrast to these clusters, the 33 known burial locations are dispersed throughout the area with no more than 4 clustering together along Medicine Creek and Ponca Creek. Caution should be used in applying any interpretations to these sorts of patterns, however, due to the incomplete nature of the survey of the area. It is entirely possible that these clusters appear not due to some significant prehistoric behavior pattern but due to modern behavior patterns that result in investigations only in those areas.

Also of interest but somewhat less mysterious in nature are the associations seen between certain types of sites and cultural affiliations. For example, earthworks tend to be associated with St. Helena affiliations (9 out of 10 sites) while mounds tend to be related to earlier Woodland occupations (6 out of 8 sites). Village sites also tend to be related to later occupations. Seventeen (50%) of the known village sites area

## RECOMMENDATIONS

~~ARCHAEOLOGICAL~~  
~~AND~~  
~~ALREADY?~~  
~~OR ONLY~~  
~~ARCHAEOLOGICAL?~~  
Falk, Pepperl and Voorhies (1985) identified the research values and priorities of cultural and paleontological resources within the Norden Study Area. They pointed out that 90 sites (46%) were "determined to be of limited (nonfield) research value based on the results of the initial stage of the Phase 2 field evaluation" (detailed field documentation and testing; Falk, Pepperl, and Voorhies 1985:B68). They identified a total of 106 sites that possessed subsurface remains. These sites were then ranked with respect to their research potential (i.e., nature of site content, assemblage composition, site context or location, and site integrity (Falk, Pepperl, and Voorhies 1985:B68). Twenty-two sites that contained buried deposits were then defined as "representing qualities eligible for National Register consideration" (Falk, Pepperl, and Voorhies 1985:B69). A similar process was applied to all sites in the scenic and recreational riverway study areas (Vawser n.d.).

These investigators suggested that these archaeological resources would provide both substantive and methodological contributions to Great Plains archaeology. The substantive contributions would "involve refinement of ideas and assumptions regarding spatial, temporal, and functional characteristics of generalized subsistence activities at a subregional scale ..." (Falk, Pepperl, and Voorhies 1985:B69). The methodological contributions would "involve clarification of key criteria for subregional sampling and assessment of regional settlement (Falk, Pepperl, and Voorhies 1985:B69). These investigators also expected that the Norden Study Area archaeology would provide further information regarding prehistoric and historic Indian adaptations to environmental and cultural transitions that coincided with the boundary between the Central and Northern Plains regions (Falk, Pepperl, and Voorhies 1985:B69).

These 22 Norden area sites were grouped into two archaeological districts (East Middle Creek including four sites; Kuskie Creek including five sites) and 13 individual site locations (Falk, Pepperl, and Voorhies 1985:B74-B112). This discussion of

3. The large area covered by these designated riverways provides a unique opportunity to study regional culture history. As discussed in the section on the temporal and spatial character of the archeological resources in the area, there are many periods of prehistory which are poorly documented in the study area. These leave gaps in our understanding of the interactions between earlier and later occupations of the area and how groups may or may not have influenced each other subsistence practices or otherwise interacted. Study of these sorts of regional concepts should be undertaken, possibly in cooperation with local universities or colleges.

4. A number of sites along the riverway are in danger of being destroyed by erosion or bank deterioration, especially along the Missouri River and associated reservoirs. These sites need to be identified, their significance assessed and stabilization undertaken. This is a project which should be planned and undertaken as soon as possible as sites threatened by these kinds of impacts can completely disappear within a matter of a few months or years.

Very few of the archeological resources within the study area have been evaluated for National Register significance and very few archeological sites in the area are listed on the register. Efforts should be made to identify cultural resources in the riverway that may be eligible for the National Register. Additional investigations may be required at some sites to determine their eligibility before they can be nominated.

A great number of artifacts have been recovered from archeological sites in the riverway during excavations or salvage operations. A inventory of these collections should be undertaken to determine their current location (e.g., universities, colleges, government agencies) and condition. Arrangements for care of the collections should be addressed if necessary.

CAN YOU 5.  
PRESENT  
INFORMATION  
POSSIBLY IN  
TABULAR  
FORM,  
ABOUT NR &  
NR-ELIGIBLE  
SITES?

Anderson, D.

1975 *Western Iowa Prehistory*. Iowa State University Press, Ames.

Anderson, D. C. and H. A. Semken, Jr. (editors)

1980 *The Cherokee Excavations: Holocene Ecology and Human Adaptations in Northwestern Iowa*. Academic Press, New York.

Anderson, D. C. and R. Shutler, Jr.

1978 The Cherokee Sewer Site (13CK405): A summary and assessment. In *Bison Procurement and Utilization: A Symposium*, edited by L. B. Davis and M. Wilson, pp. 132-139. Memoir 14. *Plains Anthropologist* 23(82).

Angus, C. and C. R. Falk

1978 *Cultural Resources Reconnaissance for Three Missouri River Bank Stabilization Projects in South Dakota and Nebraska: Sunshine Bottom, Goat Island, Ionia Bend*. Division of Archeological Research Technical Report 78-13. Department of Anthropology, University of Nebraska, Lincoln.

Anonymous

1953 Site Analysis of the Fort Randal Reservoir, South Dakota. Manuscript on file, National Park Service, Midwest Archeological Center, Lincoln, NE.

1978 *Cultural Resources Reconnaissance of A Proposed Irrigation System in Bon Homme County, South Dakota* Permit No. SD 2sb Oxt 1 001141. U.S. Army Corps of Engineers, Omaha District.

1979 ~~*Cultural Resources Reconnaissance of the Eagle Roost Habitat Bank Stabilization Project, Downstream Fort Randall Dam, South Dakota*. Cultural Resources Investigative Services, Pierre. Submitted to U.S. Soil Conservation Service, Huron.~~

1980 *Cultural Resource Survey Government Townsites Study: Pickstown, South Dakota*. MacDonald & Mack Partnership, Minneapolis, MN. Submitted to U.S. Army Corps of Engineers, Omaha District.

1982 *Environmental Assessment, Brookings - White 230-KV Transmission Line*. South Dakota Archaeological Research Center, Ft. Meade. Submitted to Western Area Power Administration, Golden, CO.

- 1983 *Analysis of Human Osteological Remains from Knox County, Nebraska.* Wichita State University Archaeological Laboratory, Wichita, KS. Submitted to U.S. Army Corps of Engineers, Omaha District.
- Beed, W. E.  
1936 A Preliminary Study of the Animal Ecology of the Niobrara Game Preserve. *Bulletin, Conservation and Survey Division, University of Nebraska* 10:1-33.
- Benn, David W.  
1986 *The Western Iowa Rivers Basin: An archaeological overview. Iowa River Basin Report Series Volume 3. Report No. CAR-677. Center for Archaeological Research, Southwest Missouri State University, Springfield.*
- Berg, R. E.  
1988 An investigation of site vandalism at 25KX30. Disposition form, U.S. Army Corps of Engineers, Omaha District.
- 1989 *A Reconnaissance Cultural Resource Survey of a Proposed Band Stabilization Project in Clay County, South Dakota.* U.S. Army Corps of Engineers, Omaha District.
- 1990a *A Cultural Resource Reconnaissance Survey of an Irrigation Pipeline to be Buried in Charles Mix County, South Dakota.* U.S. Army Corps of Engineers, Omaha District.
- 1990b An investigation of burials at the Scisson Family Cemetery in Greory County, South Dakota. *South Dakota Archaeology* 14:36-92.
- 1991 *A cultural resource reconnaissance of Camp Rosebaum in Union County, South Dakota.* U.S. Army Corps of Engineers, Omaha District.
- Blakeslee, D. J.  
1983 *St. Helena Archaeological Research Project.* Archaeology Laboratory, Wichita State University, Kansas.
- Blakeslee, D. J. and J. O'Shea  
1983 *The Gorge of the Missouri: An Archeological Survey of Lewis and Clark Lakes, Nebraska and South Dakota (Two Volumes).* Archeology Laboratory, Wichita State University, Wichita, KS. Submitted to U.S. Army Corps of Engineers, Omaha District.

*Lewis and Clark Lake, South Dakota and Nebraska.* Professional Service Industries, Soil Systems Division, Oak Brook Illinois. Submitted to U.S. Army Corps of Engineers, Omaha District.

Brodnicki, E. C. and R. E. Pepperl

1981 *An Appraisal of Archeological Investigations Within Ten Eastern Nebraska Watershed Areas: Aowa Creek, Bone Creek, Clear Creek, Cottonwood Creek, Middle Big Nemaha, Mission Creek, North Oak Creek, Rock Creek (Pawnee County), Spring Creek, and Upper Little Nemaha Watershed Districts, Nebraska.* Division of Archeological Research Technical Report 81-03, Department of Anthropology, University of Nebraska, Lincoln.

Brown, K. L.

1982 *A Cultural Resources Survey of the Proposed Indian Health Service Hospital, Rosebud, South Dakota.* University of South Dakota, Archaeology Laboratory, Vermillion. Submitted to Indian Health Service, Aberdeen, SD.

1983 *A Cultural Resources Survey of Three Timber Harvest Areas Within the Rosebud Timber Reserve, Todd County, South Dakota.* University of South Dakota, Archeology Laboratory, Vermillion. Submitted to U.S. Bureau of Indian Affairs, Aberdeen, SD.

Brown, L. A.

1986 The Gavins Point Site (39YK203): An analysis of surface artifacts. *Plains Anthropologist* 13(40):118-127.

Buechler, J. V.

1977<sup>a</sup> *An Archaeological Reconnaissance Survey of Eleven Proposed Construction Locations On the Rosebud Sioux Reservation in Gregory, Mellette, Todd, and Tripp Counties, South Dakota.* South Dakota Archaeological Research Center, Ft. Meade. Submitted to Rosebud Sioux Tribe, Rosebud, SD.

and L. Johnson  
1977 *A Cultural Resources Survey of Four Proposed Irrigation Projects Along Lake Francis Case, South Dakota.* Contract Investigation Series No. UNK. University of South Dakota Archaeology Lab, Vermillion.

1977<sup>b</sup> *A Cultural Resources Survey of Six Proposed Irrigation Projects Along Lakes Lewis and Clark, Sharpe, and Oahe in South Dakota.* Contract Investigation Series No. UNK. University of South Dakota, Archaeology Laboratory, Vermillion.

- 1983 *South Dakota Department of Transportation Materials Pit Survey*. South Dakota Archaeological Research Center, Ft. Meade. Submitted to South Dakota Dept. of Transportation, Pierre.
- Campbell, G. R. (editor)  
 1989 Plains Indian Historical Demography and Health: Perspectives, Interpretations and Critiques. *Plains Anthropologist* Memoir 23, 34(124).
- Canouts, Veletta  
 1994 A database of databases. In *Archeology and the Federal Government*, edited by V. DeCarlo, R. Kundson, J. Osborn and K. Schamel, pp. 20-21. *CRM Bulletin* 17(6).
- Carlson, G. F.  
 1973 Highway Archeological and Historical Salvage Investigations in Nebraska, 1965 to 1968. In *Archeological Salvage and Survey in Nebraska*, edited by G. F. Carlson and R. E. Jensen. Nebraska State Historical Society Publications in Anthropology No. 5.
- 1976 *a* *Archeological Salvage Investigations at Santee, Nebraska*. Nebraska State Historical Society, Lincoln. Submitted to Santee Reservation, Santee, NE.
- 1976 *b* *Prehistoric and Early Historic Sites in North Central Nebraska*. North Central Nebraska Resources, Conservation & Development. Submitted to U.S. Department of Agriculture.
- 1983 *a* *A Cultural Resources Survey of A Proposed Flood Control Project on Antelope Creek in Northwestern Cedar County, Nebraska*. Nebraska State Historical Society, Lincoln. Submitted to Lewis and Clark National Resources District.
- 1983 *b* *A Cultural Resources Survey of the Ballfield Development Project, NPS 31-00680 St. Helena, Nebraska*. Nebraska State Historical Society, Lincoln. Submitted to Nebraska Game & Parks Commission.
- Carlson, G. F. and C. A. Peacock  
 1975 Lithic Distribution in Nebraska. Manuscript on file, Nebraska State Historical Society, Lincoln.
- Carlson, G. F. and T. L. Steinacher\

- Cumming, R. B., Jr.  
 1953 *Appraisal of the Archeological and Paleontological Resources of the Fort Randall Reservoir, South Dakota: Supplement.* Missouri Basin Project, Smithsonian Institution, Lincoln, NE. Submitted to the River Basin Recreation Survey, Region 2, National Park Service, Omaha.
- Darlington, D.  
 1984 *The Cultural Resource Inventory of Federal Lands Proposed for Sale in Cherry County, Nebraska.* U.S. Bureau of Land Management, Casper District.
- Dertier, R.  
 1977 *Cultural Resources Reconnaissance of A Proposed Irrigation Project in Charles Mix County, South Dakota.* U.S. Army Corps of Engineers, Omaha District.
- Falk, C. R., A. J. Osborn, R. E. Pepperl, and M. R. Voorhies  
 1980 *Cultural and Paleontological Investigations Within the Proposed Norden Reservoir Area, Nebraska: An Interim Report.* Division of Archeological Research Technical Report 80-05. Department of Anthropology, University of Nebraska, Lincoln.
- Falk, Carl R. and R. E. Pepperl  
 1983 *Native American Archeological Resources of the Central Niobrara River Valley.* Division of Archeological Research Technical Report 82-10. Department of Anthropology, University of Nebraska, Lincoln.
- Falk, Carl R., R. E. Pepperl, and M. R. Voorhies  
 1985 *Cultural and Paleontological Investigations Within the Proposed Norden Reservoir Area, Nebraska: Final Report.* Division of Archeological Research Technical Report 83-02. Department of Anthropology, University of Nebraska, Lincoln.
- Fenenga, F.  
 1953 *Appraisal of the Archeological and Paleontological Resources of the Gavins Point Reservoir, Nebraska and South Dakota.* Missouri Basin Project, Smithsonian Institution, Lincoln, NE.
- Fenneman, N. M.  
 1931 *Physiography of the Western United States.* McGraw Hill, New York.

- 1982<sup>b</sup> *South Dakota Department of Transportation Materials Pit Surveys: District One, Faulk County; District Two, Codington County; District Three, Minnehaha, Hutchinson, Yankton, Turner, and McCook Counties. Contract Investigation Series No. 38. South Dakota Archaeological Research Center, Fort Meade.*
- 1983 *South Dakota Department of Transportation Materials Pit Survey. South Dakota Archaeological Research Center, Ft. Meade. Submitted to South Dakota Department of Transportation, Pierre.*
- 1985<sup>a</sup> *Cultural Resources Survey of Two Dot Highway 18 Alternative Routes in Todd County, South Dakota. Contract Investigation Series No. UNK. South Dakota Archaeological Research Center, Fort Meade.*
- 1985<sup>b</sup> *Cultural Resources Survey of the Highway 18 Project Between Mission and the Todd/Bennett County Line, South Dakota. Contract Investigation Series No. UNK. South Dakota Archaeological Research Center, Fort Meade.*
- 1985<sup>c</sup> *Cultural Resources Survey of A Dot Materials Pit in Section 34, T97n, R57w, Tripp County, South Dakota. Contract Investigation Series No. UNK. South Dakota Archaeological Research Center, Fort Meade.*
- Hall, R. L.  
1961 *An Archaeological Investigation in the Gavin's Point Area, Yankton County, South Dakota. Museum News 22(7):1-3. W. H. Over Museum, State University of South Dakota Museum, Vermillion.*
- Hanenberger, ~~Ned.~~ and J. Tudehope  
1977 *A Cultural Resources Survey of the Proposed Gym and Parking Lot for the Marty Indian School, Marty, Charles Mix County, South Dakota. Contract Investigation Series No. 61. South Dakota Archaeological Research Center, Fort Meade.*
- Hanenberger, N.  
1980 *The Springfield to Pickstown Survey: An Archeological Reconnaissance of the Missouri River Trench in Southeastern South Dakota. University of South Dakota Archeology Laboratory, Vermillion.*
- Hannus, L. A. E. J. Lueck and R. P. Winham  
1986 *Cultural Resource Investigation of the Historic Fort Randall Post Cemetery, Gregory County, South Dakota. Archeological Contract Series*

- 1980 *The Missouri River: an alliance for national designation.* U. S. Department of the Interior, Denver.
- Hess, J. A. and ~~Maxieca~~ *Maxieca* J. Lutz  
 1980 *Cultural Resource Survey, Government Townsites Study: Fort Pelk, Montana, Pickstown, South Dakota; Riverdale, North Dakota.* Macdonald and Mack Partnership, Minneapolis, MN. Submitted to U.S. Army Corps of Engineers, Omaha District.
- Holen, S.  
 1980 a *Report on Salvage Excavations at 25BD206, the Mellor Site.* Nebraska State Historical Society, Lincoln.
- 1980 b *A Cultural Resource Survey of the New Niobrara State Park, Niobrara, Nebraska.* Nebraska State Historical Society, Lincoln. Submitted to Nebraska Game and Parks Commission.
- Hovde, D. M.  
 1980 a *South Dakota Department of Transportation Gravel Pit Survey, District Four: Bennett, Sully, Trip, and Walworth.* Contract Investigation Series No. 26J. South Dakota Archaeological Research Center, Fort Meade.
- 1980 b *South Dakota Department of Transportation Gravel Pit Survey, Bennett and Todd Counties.* Contract Investigation Series No. 261. South Dakota Archaeological Research Center, Fort Meade.
- 1981 a *South Dakota Department of Transportation Gravel Pit Survey, Districts 1 and 4; Day, Mellette, Roberts, and Todd Counties.* Contract Investigation Series No. 26-0. South Dakota Archaeological Research Center, Fort Meade.
- 1981 b *South Dakota Department of Transportation Gravel Pit Survey, Districts Three and Five, Hanson, Harding, and Union Counties.* Contract Investigation Series No. 26L. South Dakota Archaeological Research Center, Fort Meade.
- Howard, J. H. and R. D. Gant  
 1966 *Archaeological Salvage Investigations in the Gavin's Point Reservoir Area, Lewis and Clark Lake, Nebraska and South Dakota 1963 and 1964.* Archeological Studies Circular No. 11. South Dakota Museum, University of South Dakota, Vermillion.

- 1973      *An Archaeological Reconnaissance of Fort Randall Reservoir Shoreline Areas, South Dakota.* National Park Service, Midwest Archeological Center. Submitted to South Dakota SHPO, Vermillion.
- Koopal, J.  
1977      *Cultural Resources Reconnaissance of A Proposed Irrigation Project in Charles Mix County, South Dakota.* U.S. Army Corps of Engineers, Omaha District.
- Krueger, J. G.  
1982      *The Forest Avenue Historical District, Vermillion, SD.* Submitted to South Dakota State Historic Preservation Office, Vermillion.
- Lanum, P. D.  
1980      *A Cultural Resources Survey of the Proposed Wastewater Projects in the Following Cities: Brandon, South Dakota; Canton, South Dakota; Scotland, South Dakota.* Contract Investigation Series No. UNK. University of South Dakota Archaeology Laboratory, Vermillion.
- Lass, B. L.  
1977      *South Dakota Prehistory: An Overview.* *South Dakota Archaeology* 1:1-24.
- 1978      *Historical Archaeology of the Austin-Whittemore House.* *South Dakota Archaeology* 2:55-74.
- Lawson, M. L.  
1982      *Dammed Indians: The Pick-Sloan Plan and the Missouri River Sioux, 1944-1980.* University of Oklahoma Press, Norman.
- Lazio, J. G.  
n.d.      *Cultural Resource Reconnaissance of A Proposed Irrigation Project, Charles Mix County, South Dakota, Permit No. SD 1088, C. and N. Bultsma.* U.S. Army Corps of Engineers, Omaha District.
- 1977a      *Cultural Resource Reconnaissance of A Proposed Irrigation Project in Charles Mix County, South Dakota, Permit No. SD 2SB OXT 1 1026, Ralph Houska.* U.S. Army Corps of Engineers, Omaha District.
- 1977b      *Cultural Resource Reconnaissance of A Proposed Irrigation Project in Charles Mix County, South Dakota, Permit No. SD 2SB OXT 1 1145,*

- n.d.        The Ferber Site, 25CD10: A Great Oasis Phase Component in the Lower Bow Creek Locality. Manuscript in possession of author.
- Lueck, E. J.
- 1981<sub>a</sub>     *An Extensive Search and Review of the Existing Literature to Identify Historic and Prehistoric Cultural Resources for the Proposed Gregory County Pumped Storage Facility Area, Gregory County, South Dakota.* Cultural Resources Consulting Services, unknown location. Submitted to U.S. Army Corps of Engineers, Omaha District.
- 1981<sub>b</sub>     *A Cultural/Historical Review of the Proposed Gregory County Pumped Storage Facility Area, Gregory County, South Dakota.* Cultural Resources Consulting Services, Unknown Location. Submitted to U.S. Army Corps of Engineers, Omaha District.
- 1988        *A cultural resources evaluation of the Riverside park Development Area at Yankton, in Yankton County, South Dakota.* Archeology Laboratory, Augustana College, Sioux Falls. Submitted to City of Yankton.
- Lueck, E. J. and L. A. Hannus
- 1987        *Monitoring of bank stabilization at the Gavin's Point Site (39YK203) Lewis and Clark Lake, Yankton County, South Dakota.* Archeology Laboratory, Augustana College, Sioux Falls. Submitted to South Dakota Department of Game, Fish and Parks.
- Luoma, G.
- 1975        *Pattee Creek Watershed Channel, Lincoln County, Spring-Bull Creek Watershed Canal, Charles Mix County.* Submitted to U.S. Soil Conservation Service.
- Marts, R. D.
- 1980        *A Cultural Resources Investigation of A Proposed Irrigation Intake Structure, Lake Francis Case Project, Gregory County, South Dakota.* Submitted to the U.S. Army Corps of Engineers, Omaha District.
- Mattes, M. J.
- 1948        *Project Report on Historic Sites in the Fort Randall Reservoir Area, Missouri River, Gregory, Charles Mix, Lyman, Brule, Buffalo and Hughes Counties, South Dakota.* Region 2, National Park Service, Department of the Interior. Submitted to Omaha District, Corps of Engineers, War Department, Omaha.

*Wyoming.* Interagency Archeological Salvage Program, Missouri Basin Project, Smithsonian Institution, Lincoln, NE.

1960 *The Excavation and Investigation of Fort Lookout Trading Post II (39LM57) in the Fort Randall Reservoir, South Dakota.* Smithsonian Institution Bureau of American Ethnography Bulletin 176. River Basin Surveys Papers No. 17.

Miller, M. C.

1972 *Hay Country History.* Centennial Commission. Submitted to South Dakota State Historic Preservation Office, Vermillion.

Mills, J. E.

1960 *Historic Sites Archeology in the Fort Randall Reservoir, South Dakota.* Smithsonian Institution Bureau of America Ethnology Bulletin 176. River Basin Surveys Papers No. 16.

Missouri Basin Project

n.d. *Gavins Point Dam Lewis and Clark Lake: Geology, Paleontology, Archeology, History.* Smithsonian Institution. Submitted to the National Park Service, U.S. Army Corps of Engineers, and the University of Nebraska State Museum. ) *ref*

1965 *Reappraisal of Archeological Sites in the Fort Randall Reservoir, South Dakota.* Smithsonian Institution, Lincoln, NE.

Murray, R. A. and F. J. Dawson

1973 *An Appraisal of the Historic and Archeological Resources of a Corps-owned Tract at Snyder Bend and Winnebago Bend of the Missouri River.* Western Interpretive Services. Submitted to the U.S. Army Corps of Engineers, Omaha District.

National Survey of Historic Sites and Buildings

1963 *Themes II and III Early Indian Farmers and Villages and Communities.* United States Department of the Interior, National Park Service.

Nebraska State Historical Society

1977 *History and Cultural Resources of the Missouri River Valley Rulo to South Sioux City Nebraska.* Submitted to the U.S. Army Corps of Engineers, Omaha District.

Nowak, T. R.

(*Department of Anthropology, University of Nebraska, Lincoln*), edited by A. J. Osborn and C. R. Falk, pp. 55-139.

- 1979 *Cultural Resource Inventory and Assessment for Select Areas Within the Ft. Niobrara National Wildlife Refuge, Valentine, Nebraska: A Final Report.* Division of Archeological Research Technical Report 79-07. Department of Anthropology, University of Nebraska, Lincoln.
- O'Shea, J. M. and J. Ludwickson  
1992 *Archaeology and Ethnohistory of the Omaha Indians: The Big Village Site.* University of Nebraska Press, Lincoln.
- Over, W. H.  
1938 *Archaeology in South Dakota.* University of South Dakota Circular No. 1, Vermillion.
- Owens, D. F.  
1981a Recreation River cultural resources investigations, Meckling, South Dakota Area. Disposition form, U.S. Army Corps of Engineers, Omaha District.  
1981b Cultural resources inspection of a rerouted road for Randal Community Water District, Ft. Randall Dam/Lake Francis Case. Disposition form, U.S. Army Corps of Engineers, Omaha District.  
1981c Cemetery relocations - assessment of St. Phillips Cemetery, Lake Francis Case Project. Disposition form, U.S. Army Corps of Engineers, Omaha District.  
1981d Missouri National Recreational River Project, cultural resources investigation. Volcano Hill area. Disposition form, U.S. Army Corps of Engineers, Omaha District.  
1982a Delbert Nielsen Bank Stabilization Permit (NE 2SB OXT 3 004090) cultural resource evaluation. Disposition form, U.S. Army Corps of Engineers, Omaha District.  
1982b Cost share lakeshore development contract - state of South Dakota - cultural resource assessment of Gavins Point Fisheries. Disposition form, U.S. Army Corps of Engineers, Omaha District.

- Ritter, B. et al  
n.d. Draft. Ethnographic Overview and Assessment. Ms. on file, National Park Service, Midwest Archeological Center, Lincoln, Nebraska.
- Robson, L. B.  
1982 *Tower-Greenwood, South Dakota: Cultural Resource Study, Class II Reconnaissance Inventory.* U.S. Bureau of Reclamation, Upper Missouri Region, Billings.
- Ruple, S. D.  
1977 *An Archaeological Survey of the Chan Gurney Airport Expansion Project.* South Dakota Historical Preservation Center, Vermillion. Submitted to U.S. Federal Aviation Administration.
- 1983 Survey at the site of the James Sonichsen Boat Ramp, Yankton County, South Dakota. South Dakota Historical Preservation Center, Vermillion. Letter dated April 18, 1983 to Mr. Tim Nowak, U.S. Army Corps of Engineers, Omaha District.
- 1984 *An Investigation of and Analysis of Nails from the 1986 Archeological Excavations at Ft. Randall, South Dakota.* Historic Sites Services, Nashville. Submitted to the U.S. Army Corps of Engineers, Omaha District.
- 1988 Report of an archeological examination of a brick kiln in Elk Point, Union County, South Dakota (39UN8). *South Dakota Archaeology* 12:1-15.
- Ryder, K. G.  
1978 *Cultural resources reconnaissance (construction monitoring) of the Gavins Point Unit (39YK203), Lewis and Clark Lake, in Yankton County, South Dakota.* U.S. Army Corps of Engineers, Omaha District.
- Semken, H. A., C. Miller and J. Cordell  
1990 *Inventory of Identified Vertebrates Recovered from Ft. Randall Historic Site, South Dakota (39GR15).* Department of Geology, University of Iowa and Office of State Archaeologist, Iowa City. Submitted to the U.S. Army Corps of Engineers, Omaha District.
- Shay, C. T.  
1978 Late prehistoric bison and deer use in the eastern prairie-forest border. In *Bison Procurement and Utilization: A Symposium*, edited by L. B. Davis and M. Wilson, pp. 194-212. Memoir 14. *Plains Anthropologist* 23(82).

Tolstead, W. L.

1942      *Vegetation in the Northern Part of Cherry County, Nebraska. Ecological Monographs* 12(3):255-292.

Toom, D. L.

1979      *The Middle Missouri Villagers and the Early Fur Trade: Implications for Archeological Interpretation. A Case Study of Post-Contact Technological Change.* Master's Thesis, Department of Anthropology, University of Nebraska, Lincoln.

1992      *Climate and Sedentism in the Middle Missouri Subarea of the Plains.* Ph.D. Dissertation, Department of Anthropology, University of Colorado, Boulder.

U.S. Army Corps of Engineers

1978a      *Cultural Resources Survey of A Proposed Water Intake Facility in Yankton County, South Dakota, Permit No. SD2SB OXT 001009, B-Y Water District.* Omaha District.

1978b      *Cultural Resources Survey of A Proposed Water Supply Pipe in Bon Homme County, South Dakota, Sand Creek Recreation Area.* Omaha District.

1978c      *Cultural Resources Survey of Two Proposed Water Supply Pipes in Yankton County, South Dakota, Lewis and Clark Recreation Area, Midway and McVey Units.* Omaha District.

U.S. Department of Agriculture Weather Bureau

1936      *Climatic Summary of the United States.* Sections 38-39. Washington, D.C.: U. S. Government Printing Office.

Vawser, A.

n.d. *GIS Analysis for Cultural Resources: Niobrara/Missouri National Scenic Rivers, Determining Significance of Cultural Resources for inclusion in Boundary Alternatives.* Manuscript in possession of author, National Park Service, Midwest Archeological Center, Lincoln.

Weaver, J. E.

1965      *Native Vegetation of Nebraska.* University of Nebraska Press, Lincoln.

Wedel, W. R.

→ part of this has been published - see me

~~White, T. E. and P. L. Cooper~~

~~1951. *Appraisal of the Archeological and Paleontological Resources of the Niobrara River Basin, Nebraska.* Missouri River Basin Surveys, Smithsonian Institution, Lincoln, NE.~~

Williams, P.

1976 *A Survey of Archaeological and Historical Resources of the Big Sioux River at Sioux City, Iowa, and North Sioux City, South Dakota Flood and Erosion Control Project.* Iowa State Historical Department Division of Historic Preservation, Iowa City. Submitted to the U.S. Army Corps of Engineers, Omaha District.

Winham, R. P.

1984<sup>a</sup> *Archeological Survey of Selected Areas Along A Proposed Buried Telephone Line Route: Letter Report.* Augustana College, Center for Western Studies, Archeology Lab. Submitted to Clay Union Electric Corp., Vermillion, SD.

1984<sup>b</sup> *Report of A Survey of Part of A System of Proposed Overhead Power Lines for the Turner-Hutchinson Electric Cooperative, Inc. in Hutchinson and Yankton Counties, South Dakota.* Augustana College, Center of Western Studies, Archeology Laboratory. Submitted to Turner-Hutchinson Electric Cooperative, Marion, SD.

1985<sup>a</sup> *An Intensive Cultural Resource Survey of Portions of the Tripp Tap to Utica Tap 69KV Subtransmission Line Relocation in Bon Homme and Yankton Counties, South Dakota.* Augustana College, Center for Western Studies, Archeology Laboratory. Submitted to East River Electric Power Cooperative.

1985<sup>b</sup> *Records Search for Three Proposed Wilderness Access Areas in Hutchinson and Yankton Counties, South Dakota.* Augustana College, Center for Western Studies, Archeology Laboratory. Submitted to South Dakota Department of Game, Fish & Parks, Pierre.

1985<sup>c</sup> *An Intensive Cultural Resource Survey of Proposed Wastewater Treatment Facilities Near Tyndall in Bon Homme County, South Dakota.* Augustana College Center for Western Studies, Archeology Lab. Submitted to City of Tyndall, SD.

1985<sup>d</sup> *An Intensive Cultural Resource Survey of Portions of the Tripp Tap to Utica Tap 69KV Subtransmission Line Relocation in Bon Homme and*

- 1977 *a* *Cultural resources reconnaissance of a proposed irrigation project in Charles Mix County, South Dakota, John Koopal, SD-966. U.S. Army Corps of Engineers, Omaha District.*
- 1977 *b* *Cultural resources reconnaissance of a proposed irrigation project in Charles Mix County, South Dakota, Ralph Dertien, SD-1065. U.S. Army Corps of Engineers, Omaha District.*
- 1978 *Cultural Resources Survey of A Proposed Irrigation Project in Bon Homme County, South Dakota, Permit No. SD 2SB OXT 1 001009, Edward Dreber. U.S. Army Corps of Engineers, Omaha District.*
- Wood, W. R.
- 1956 *Settlement Patterns of the Redbird Focus. Plains Anthropologist 7(3).*
- 1965 *The Redbird Focus and the Problem of Ponca Prehistory. Plains Anthropologist 10(28):79-145.*
- 1974 *Observations on the Archeological Resources of the Missouri Valley Trench Between Yankton, South Dakota, and Bismarck, North Dakota. University of Missouri, Columbia, MO. Submitted to Ultrasystems, Inc., Phoenix, AZ.*
- Wood, W. R. and M. Liberty
- 1980 *Anthropology on the Great Plains. University of Nebraska Press, Lincoln.*
- Zimmerman, L. J. *and T.E. Emerson*
- 1979 *A Cultural Resources Reconnaissance of the Federal Lands on the East Bank of Lake Francis Case, South Dakota, Volume 1 of 2; Section II- Archeological Reconnaissance and Evaluation. University of South Dakota, Vermillion. Submitted to U.S. Army Corps of Engineers, Omaha District.*
- Zimmerman, L.J.*
- 1981 *Monitoring of laying of underground cable for the BonHomme-Yankton Rural Electric Cooperative. University of South Dakota Archaeology Laboratory. Letter dated June 8, 1981 to Ms. Becky Boyd, U.S. Army Corps of Engineers, Omaha District.*
- 1982 *A Cultural Resources Survey of Two Proposed Housing Sites in Santee, Knox County, Nebraska. Contract Completion Study No. 82-1. South Dakota, Archeology Lab, Vermillion.*