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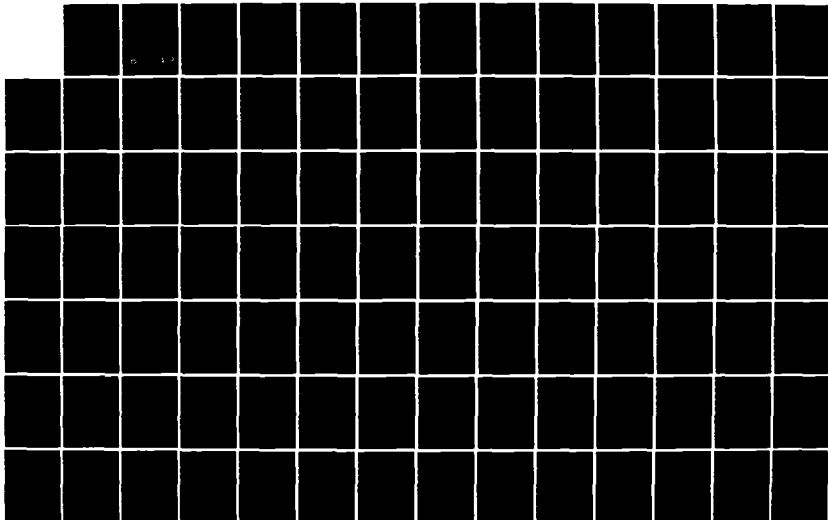
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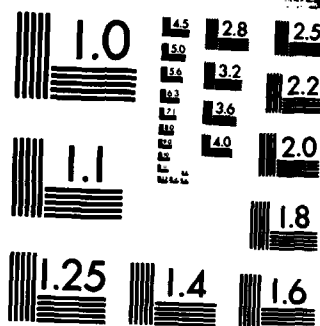
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**Phase I Intensive Cultural Resource Inventory
of Selected Recreation Areas
In the West Portion of Lake Sakakawea, North Dakota
Dunn, McKenzie, Mountrail, and Williams Counties
(Contract No. DACW 45-81-C-0222)**

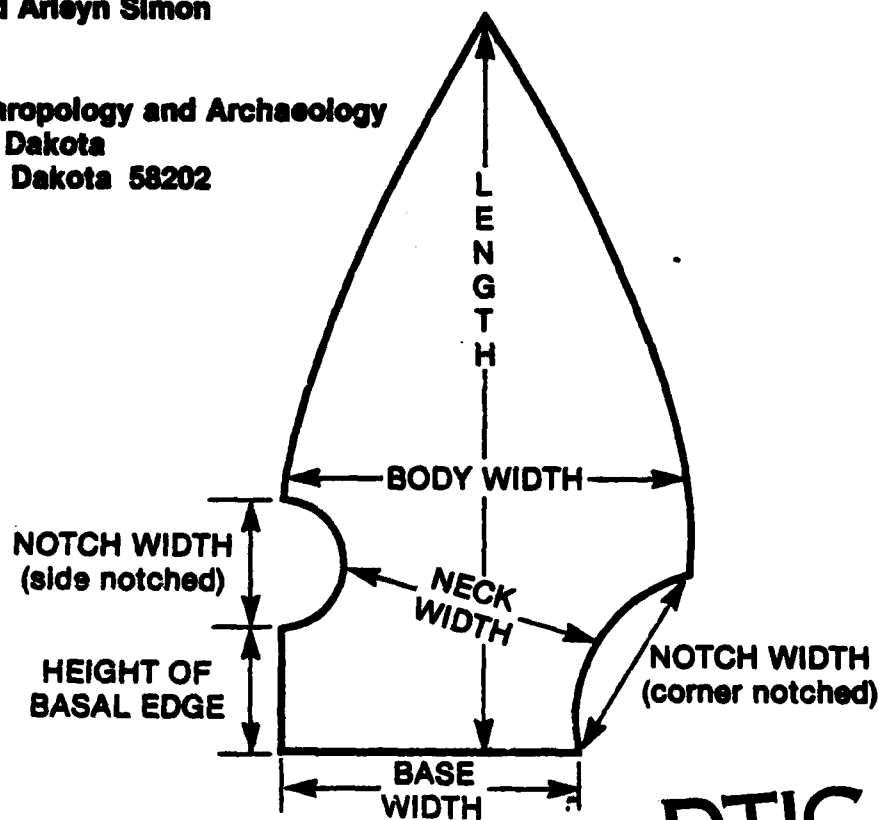
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AD-A153 265

VOLUME I

by
Thomas P. Van Hoy and Randy Nathan
with portions edited by
David D. Kuehn and Arleyn Simon

submitted by
Department of Anthropology and Archaeology
University of North Dakota
Grand Forks, North Dakota 58202



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OF SELECTED RECREATION AREAS
IN THE WEST PORTION OF LAKE SAKAKAWEA
DUNN, MCKENZIE, MOUNTRAIL, AND WILLIAMS COUNTIES, NORTH DAKOTA
(Contract No. DACW45-81-C-0222)

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ABSTRACT

An intensive cultural resource inventory was conducted at 10 recreation areas, totalling 4000 acres along the western portion of Lake Sakakawea (Garrison Reservoir) by University of North Dakota Archaeological Research. The survey was performed between August 12 and November 10, 1981. A total of 26 prehistoric sites, four historic sites, and 23 prehistoric isolates were recorded. Cultural occupations include sites from the Middle Prehistoric to the Historic period. Each of the recorded sites was evaluated in terms of National Register eligibility where possible on the basis of surface evidence. Appropriate cultural resource management recommendations are offered for each site. The results of the survey have been summarized in terms of the surrounding Northwestern Plains prehistory and history.

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The survey crew consisted of Thomas P. Van Hoy (Field Supervisor), Randy Nathan, Sally Montgomery, Scott Richert, and Fred Scott. The laboratory work was performed by Randy Nathan and Sally Montgomery.

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INTRODUCTION

During the period of August 12 to November 10, 1981, a Phase I Intensive Cultural Resources Inventory was conducted at 10 recreation areas located along the western portion of Lake Sakakawea in portions of Dunn, McKenzie, Mountrail, and Williams Counties, North Dakota. The 10 recreation areas are: Lewis and Clark State Park, Tobacco Garden Bay, National Guard Training Area, Hofflund Bay, Four Bears Park, New Town Area (Sanish Bay), Van Hook Area, Parshall Bay, McKenzie Bay, and Charging Eagle Bay (Figure 1). The inventory was conducted by University of North Dakota Archaeological Research, under contract No. DACW45-81-C-0222 with the Omaha District of the U.S. Army Corps of Engineers. The original fieldwork was conducted under the direction of Thomas P. Van Hoy, Assistant Research Archaeologist. All of the recorded sites were relocated and assessed by David D. Kuehn, Associate Research Archaeologist, during the period of August 9-19, 1983. Final report preparation was completed under the supervision of Arleyn Simon, Associate Research Archaeologist.

The 10 survey areas total approximately 4000 acres and in large part consist of prominent bays which receive intensive recreational use. Existing campground and/or picnic ground facilities are present at five of the areas, while an additional four areas have undeveloped recreational facilities. Trailers and cabins are located at three of the areas on lands leased from the Corps of Engineers.

The primary purpose of the inventory is to identify all surface visible cultural resources, and to provide sound management recommendations in light of current federal cultural resource legislation. The following is the final report on the UNDAR cultural resources inventory of the 10 recreation areas in the western portion of Lake Sakakawea.

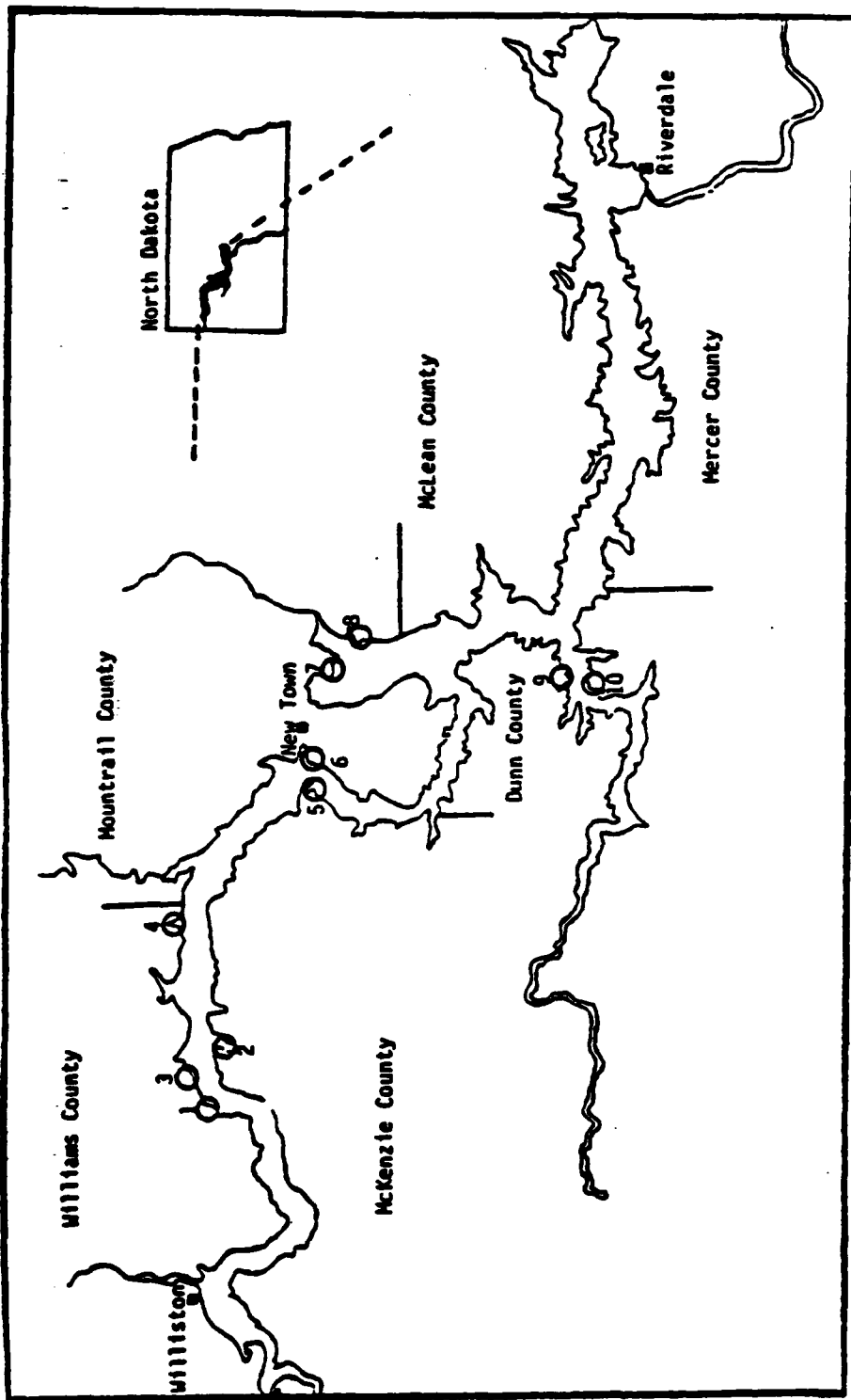


Figure 1. Lake Sakakawea and Survey Tracts.

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|-------------------------------|--------------------|------------------------|
| 1. Lewis and Clark State Park | 5. Four Bears Park | 9. McKenzie Bay |
| 2. Tobacco Garden Bay | 6. New Town Area | 10. Charging Eagle Bay |
| 3. National Guard Area | 7. Van Hook Area | |
| 4. Hofflund Bay | 8. Patshall Bay | |

REGIONAL LOCATION AND ENVIRONMENT

The 10 project areas are situated in a variety of natural settings, including badlands and glaciated grasslands. The following section will outline the general physical setting of the 10 project areas as a whole and individually. Setting descriptions for each project area also are presented in the sections on survey results.

The general project area comprises the approximate western two-thirds of Lake Sakakawea in western North Dakota. Lake Sakakawea was formed by the construction of the Garrison Dam on the Missouri River near Riverdale, ND. The entire area is part of the Great Plains physiographic province (Fenneman 1931). Portions of four physiographic districts are present in the individual study areas. The most common district is the Missouri River district, which is limited to the valley of the Missouri River. Portions west and south of the river valley are included in the Missouri Plateau district, which comprises most of the unglaciated portions of southwestern North Dakota. Portions of uplands located north and east of the Missouri River valley are included in the Coteau Slope district, which forms a narrow strip of rolling to hilly plains immediately west of the Missouri Coteau (Bluemler 1977:3). Two study areas are located in the Little Missouri Badlands district. This district follows the valley of the Little Missouri River and contains extremely rugged, eroded terrain.

The different physiographic districts reflect different geological histories and as a result today exhibit differences in pedology, erosion, topography, flora and fauna. Each of the 10 individual study areas is sufficiently limited in size so that no more than two physiographic districts are represented at a time. All of the study areas contain portions of the Missouri River district, with the exception of the two located in the Little Missouri Badlands district. The additional physiographic districts are limited to upland areas adjacent to either the Missouri or Little Missouri lowlands. Those areas along the north and east side of Lake Sakakawea contain uplands included in the Coteau Slope, while those along the south and west side have adjoining uplands which are part of the Missouri Plateau.

Lake Sakakawea is located in the Williston Basin, a structural and sedimentary basin which forms the western two-thirds of North Dakota (in addition to portions of two other states and two Canadian provinces). In western North Dakota, the Williston Basin is over 10,000 feet thick (Bluemler 1977). These deposits are divided into numerous horizontally bedded formations (Table 1). In the study area, exposed geologic formations are largely limited to the Tertiary sediments of the Fort Union group (Bluemler 1977). The dominant, or most commonly visible, formations of the Fort Union group are the Bullion Creek and the Sentinel Butte formations. The Bullion Creek formation is composed of beds of shale and clay with lenses of sandstone and lignite (Kuehn 1982). The Sentinel Butte formation overlies the Bullion Creek and is similar in composition, however it is darker and more gray in color (Petters 1956:11). The soft clays and sandstones of these formations have been severely eroded in many portions of the study area resulting in rugged breaks or badlands. These badlands, which are composed of steep buttes, narrow ridge systems and deeply dissected drainages, are present along the walls of the Missouri River valley and along the valley of the Little Missouri.

The Tertiary formations are capped with aeolian deposits of Holocene age in many upland areas throughout western North Dakota. These windblown sediments are analogous to the Oahe formation as defined by Clayton et al. (1976). The Oahe formation consists of four distinctive members: Mallard Island (oldest), Aggie Brown, Pick City, and Riverdale (youngest) (Clayton et al. 1976). The four Oahe formations were deposited during varying climatic conditions during the Late Pleistocene and Holocene. Examination of these members may provide tentative information on paleoenvironmental conditions and temporal placement. Distinctive paleosols, formed during cool-moist periods, are present in the Aggie Brown and Riverdale members (Clayton et al. 1976).

Most of the region south and west of the Missouri River escaped the glaciation of the Pleistocene. The areas north and east of the river were very heavily glaciated. Glacial till is scattered throughout the low-relief plains and glacial features are evident. Common glacial landforms include terminal and ground moraines, kames, eskers, and meltwater channels (Bluemler 1977).

Table 1. Geologic formation of North Dakota during the Quaternary through Triassic periods.
(Hainer 1956, Blumle 1973 Ed Series 9, 1977 Ed. Series 11).

Age	Era	Period	Epoch	Main rock types in southwestern North Dakota	Geologic formation	
.01	Cenozoic	Quaternary	Holocene	Silt, clay, sand	Alluvium	
2			Pleistocene	Glacial sediment, silt, clay	Glacial drift	
12		Tertiary	Pliocene	sand, silt, gravel	Pre-pleistocene gravels	
25			Miocene	sandstone, limestone		
40			Oligocene	silt, sand, limestone		
55			Eocene	clay, sand, shale	Golden Valley	
70			Paleocene	silt, clay, sand, lignite	Sentinel Butte Bullion Creek Tongue River Ludlow, Cannonball	Fort Union Group
	Mesozoic	Cretaceous		Layers of silt, clay and sand near the top; Shale in middle, lower most cretaceous rocks are sand	Hell Creek Fox Hills Pierre Niobrara Carlisle Greenhorn Belle Fourche Mowry New Castle "Muddy" Skull Creek Fall River Fuson Lakota	Montana Group Dakota Group
135						
		Jurassic		Shale, limestone, siltstone, some red-beds and evaporites	Morrison Sundance Piper	
180						
		Triassic		Shale, siltstone, sandstone	Spearfish	

North Dakota's climate has undergone two major changes since the last glacial retreat. The spruce-aspen forest which covered western North Dakota at the end of the Wisconsin glaciation was initially replaced by tall grass prairie. Later, when the climate became warmer and drier than it is today, western North Dakota was a short grass prairie (Bluemle 1975). This warm, dry period (the Altithermal drought) took place between 7000 and 2500 B.P. Following the Altithermal the climate became cooler and wetter, much like that of today (Bluemle 1975).

Presently, the climate of western North Dakota has been described as cool temperate semi-arid. The area is characterized by fluctuating temperatures which vary from subzero readings during the winter months to over 100° during the height of summer. Record temperatures include a -60° at Parshall on February 15, 1936 and 121°F at Steele on July 6, 1936 (Jensen 1974:2).

North Dakota has a continental climate which is due primarily to its location at the North American geographical center (Jensen 1974:2). The temperature exhibits large daily, day to day, and annual fluctuations. Precipitation is irregular in occurrence and location. The humidity is relatively low, the majority of days are sunny rather than overcast. The climate is also characterized by nearly continuous air movement.

The northeast part of North Dakota has a normal average annual temperature of 37° F while along the southern border it is higher at 43° F (Jensen 1974:2). The coldest month is January with the northeast having an average temperature of 2° F and the southwest part of the state having an average temperature of 17° F. The warmest month is July and again the southern part of the state is on the average warmer at 73° F than the northeast at 67° F. The range of normal average monthly temperatures (between the warmest and coldest months) is 65° in the northeast and 54° in the southwest.

The growing season is closely associated with the freeze-free period in North Dakota (Jensen 1974:7). In the southeast and south-central this freeze-free period averages 130 days, while in the northeast and northcentral it averages 110 days.

Precipitation, which is quite variable, averages about 15 in. per year. This amount has varied from 9.88 in. in 1936 to 23.95 in. in 1915 (Lehmer 1971). Two-thirds of the moisture normally comes in the form of rainfall during the warm weather months (Omodt 1968).

In the southwestern portion of the state (Dickinson area) measurable precipitation occurs on an average of 90 days per year (Jensen 1974:13). In contrast the northwest portion of the state (Crosby area) receives a measurable amount of precipitation (0.01 inch or more) on an annual average of 67 days.

According to Jensen's (1974:48, Figure 54) summary of North Dakota climate (for the years between 1931-1960) McKenzie, Dunn, and McLean Counties are within the west central climatological division of North Dakota and Williams and Montrail Counties are in the northwest climatological division. The study area of the present project is approximately 2000 ft AMSL (Jensen 1974:20, Figure 1). The following paragraph summarizes climatological differences between the eastern portion of the study area and the western portion.

For the survey area along Lake Sakakawea, the annual mean temperature is 40° F in the eastern portion and 41° F in the western portion (Jensen 1974:20, Figure 2). The January mean temperature is 8° F east and 9° f west (1974:21, Figure 4). The July mean temperature is also slightly warmer in the west with 71° F compared to 70° F in the east (1974:24, Figure 10). Extreme high temperatures in the east have been 114° F and 110° F in the west (1974:28, Figure 17). Extreme low temperatures have been -54° F in the east and -50° F in the west (1974:28, Figure 18). The mean length of freeze-free period days is 120 in the west and 130 in the east (1974:31, Figure 23). The annual mean precipitation in inches is 13-14 for the west and 15-16 for the east (1974:41, Figure 41). This summary illustrates that although the western portion of the study area has relatively warmer temperatures annually and seasonally, the eastern portion of the study area has slightly higher rates of annual precipitation and a longer freeze-free period.

During the survey project, which commenced in early August and concluded in early November, the extremes of North Dakota weather were encountered. Hot, humid days were common in August. Grass and forest

fires in Canada and the Rocky Mountain states provided a smokey haze throughout the survey area. The temperatures dropped considerably and by early October the days were frequently cold and windy. Although no significant accumulation occurred, blowing snow and below freezing weather hampered the survey for several days. In late October the weather moderated. The survey was concluded without much inconvenience from the weather.

Survey conditions were quite favorable during the fieldwork portion of the project. A major factor which contributed to the success of the on-the-ground survey was the relatively low pool level of Lake Sakakawea which resulted in shorelines being exposed and pedestrian access to areas which would have otherwise been islands. The low pool level was in part due to the drought of the preceding year and little snowfall over the winter months. Vegetation was not as dense nor or as high as it would have been had the preceding season been moist rather than dry. This relatively low development of ground cover aided in examination of the surface. All exposed cutbanks and trails, deflated areas and any other exposed surfaces were closely examined in addition to the standard survey examination of each study tract.

Lehmer (1971) has described the vegetation of the Middle Missouri River area in terms of the four physiographic zones which run parallel to the river. These zones, the Missouri Plateau or uplands, breaks, terraces and floodplain were utilized in different ways by the native people who exploited the resources available. Stewart and Stewart (1973) offer a detailed description of nine ecosystems identified in the southwestern part of North Dakota. This system was used in describing the present project study tracts. A brief synopsis of these ecosystems is presented below.

The Bottomland Ecosystem includes all land occupied by rivers and streams and their annual floodplain. Alluvial deposits include sand, silt, scoria, lignite, sandstone and mixed gravels. Flora species of this ecosystem include trees and other woody and herbaceous vegetation. Cottonwoods (Populus deltoides), junipers (Salix interior and Juniperus communis), are examples of woody plants. Grasses include western wheatgrass (Agropyron smithii), green needlegrass (Stipa viridula), big bluestem (Andropogen gerardi) and dwarf sagebrush

(Artemisia frigida). Needle and thread grass (Stipa comata) is also common.

The terrace ecosystem is composed of sandy loams, loams, silt loams, silts and an assortment of clays, consists of former river bottoms and floodplains that are presently situated adjacent to, but higher than the present bottomlands Ecosystem. Common vegetation of terrace ecosystems include a predominance of blue grama (Bouteloua gracilis), western wheatgrass (Agropyron smithii), needle-and-thread grass (Stipa comata), and/or prairie sandreed (Calamovilfa longifolia). Dwarf sagebrush (Artemisia frigida) may occur in limited areas.

The toe slope ecosystem includes those areas on gentle concave lower slopes or in swales. This includes slumps, earthflows, and soil creep accumulations. Soils in this ecosystem developed from alluvial and colluvial desposits, including dark loams ranging in depth from four to 20 inches. Vegetation consists primarily of western wheatgrass (Agropyron smithii), green needlegrass (Stipa viridula) and big bluestem (Andropogen gerardii). Buffalograss (Buchloe dactyloides) is also present, although to a lesser extent.

The scoria ecosystem is characterized by rounded, moderately steep hills with intervening sags or drainage ways and low knobs of scoria outcrop. Soils include silt loams and loams underlain by older layered, water-deposited clays. Colors vary from reddish brown to brown. The flora is mixed and is dependent on the topographic position. Wheatgrass (Agropyron smithii) needle and thread grass (Stipa comata) and blue grama (Bouzeloua gracilis) are common.

The badlands ecosystem consists of very steep broken lands dissected by major rivers, streams, ephemeral drainages. Sandstone, siltstone, scoria, lignite seams, bentonite clays and limestone are common deposits in the area. Large areas, mainly steep slopes, are barren of vegetation. Flora that is present includes juniper (Juniperus communis) on the northwest and northeast facing slopes and western wheatgrass (Agropyron smithii), blue grama (Bouzeloua gracilis), and dwarf sagebrush (Artemisia frigida) on the lower, more gentle slopes.

The upland grassland ecosystem is identified by "hilly uplands interspersed by rounded hills with steeper-sided knobs of sandstone, siltstone, silty shales, and clay stone bedrock" (Stewart and Stewart

1973). Soils include silts, loams, clays, soft shales, and loamy fine sands deposited by streams. Vegetation consists primarily of little bluestem grass (Andropogon scoparius). Found in association with bluestem are needle and thread grass (Stipa comata) and prairie sandreed (Calamovilfa longifolia). Western wheatgrass (Agropyron smithii), blue grama (Bouteloua gracilis), green needlegrass (Stipa viridula), and big bluestem (Andropogon gerardi), are found on the thicker soils.

The rolling grassland ecosystem is characterized by undulating and long sloping uplands. Clayey deposits, varying in texture, make up the soils. Some soils are sandy and others glacial. Vegetation is quite diverse changing with the texture of the soil. Plant communities common to this ecosystem are primarily dominated by wheatgrasses, green needlegrass (Stipa viridula), and big bluestem (Andropogon gerardi). Western wheatgrass (Agropyron smithii) and little bluestem (Andropogon scoparius) may also dominate. Co-dominants with the latter may be prairie sandreed (Calamovilfa longifolia) and threadleaf sedge (Carex filifolia). Blue grama (Bouteloua gracilis) may also be present.

The hardwood draw ecosystem occupies narrow drainages and minor draws. Intermittent and ephemeral streams supply the moisture which is effectively retained in the underbrush. The soils are variable, ranging from sandy loams to loams. Plant communities in this ecosystem may include both overstory and understory complexes or a simple overstory of buffaloberry with an understory of shrubs and trees. A green ash complex is most common on north or east facing slopes. Greater diversity of plant species is characteristic of the coulee and draw bottoms.

The fresh water marsh ecosystem. The fresh water marshes occupy large, prominent depressions. The water in these semi-permanent wetlands is somewhat brackish. Vegetation includes broad-leafed cattail and hard stem bullrush. Areas of saline accumulation have stands of salt tolerant grasses.

The study area includes all these ecosystems excluding the bottomlands, toe slope, scoria and rolling grasslands. The bottomlands are present but are inundated by Lake Sakakawea. The majority of the sites in the area were found in the badlands, upland grassland, and terrace ecosystems. More detailed descriptions of each survey tract are presented in the survey results sections.

The survey area is characterized by a wide variety of wildlife species. The Little Missouri Grasslands area, which is located south of the study area, currently contains approximately 252 species of wildlife including whitetail and mule deer (Odocoileus virginianus), antelope (Odocoileus hemionus) and coyote (Canis latrans) (Stewart & Stewart 1973). The environment of the Lake Sakakawea survey area is also represented by wetland species including a variety of rodents and snakes, birds and fishes (Stewart & Stewart 1973; Martin 1973).

During early historic times the predator species of wolf (Canis lupus), grizzly bear (Ursus horribilus), and mountain lion (Felis concolor) existed within the area under study. As a result of man's activities these animals left the area in the late 1800's and early 1900's. Unconfirmed sightings of mountain lions within the Little Missouri drainage have been reported during the last five years. Other important animals present in the study area during prehistoric times include bison (Bison bison), elk (Cervus elephus), and bighorn sheep (Ovis canadensis). The nearby badlands were a favorite wintering location for bison (Loendorf 1977).

The various survey tracts within the Lake Sakakawea study area have several geologic deposits present. The following discussion describes the geologic formations for each survey tract. More detailed descriptions are presented under each survey tract in the survey results sections.

The National Guard and the Lewis and Clark survey tracts are located farthest north and west on the Lake within the general survey area. The Bullion Creek formation is exposed along the Missouri River valley in these study areas. The formation is characterized by yellow brown silts, sands, clays, sandstone and lignite, as well as river, lake, and swamp sediments. The formation dates from the Paleocene and is approximately 200 m thick (Clayton 1980).

The Sentinel Butte formation, which was also deposited during the Paleocene, is exposed above the Bullion Creek formation in the survey tracts. The Sentinel Butte formation is comprised of grey brown silt, sand, clay, sandstone, and lignite formed from river, swamp and lake

sediment (Clayton 1980). This formation may be 200 m thick. Both survey tracts have a limited amount of badlands topography within their boundaries.

The Tobacco Garden Bay and Hofflund Bay tracts consist of Bullion Creek formation deposits, glacial sediments, and recent alluvium (Clayton 1980). Hofflund Bay was formed by the inundation of the mouth of Beaver Creek. The Bullion Creek formation is exposed at both the Tobacco Garden Bay and Hofflund Bay tracts. In addition, the Tobacco Garden tract has a covering of glacial sediments further inland from the lake. These sediments were deposited between the pre-Wisconsinan and Holocene. The soil consists of thinly scattered glacial sediments (clays, silts, sands, pebbles, and a few cobbles and boulders) deposited over and slightly modifying the non-glacial topography existing before the last glacial advance. The deposits vary in thickness to a maximum of 30 m.

The remainder of the survey project area is located on the north-south portion of Lake Sakakawea. The Four Bears survey tract which is located on the west side of the lake contains uncollapsed river sediment to the north and Bullion Creek formation deposits to the south (Clayton 1980). The river sediment was deposited between the Holocene and pre-Wisconsinan. These sediments are moderately well sorted with cross-bedded sand and plane-bedded gravel. The sediments which may be as thick as 30 m are normally found on the gently rolling plains and terraces dissected by braided channel scars which characterize the northern portion of the Four Bears tract.

The New Town survey tract is located on the east shore of Lake Sakakawea, directly across from the Four Bears tract. Sentinel Butte formation deposits are exposed along the shoreline while glacial sediments (Clayton 1980), which were also present in the Tobacco Garden Bay tract, are exposed in the inland areas.

Glacial sediments that characterize the Van Hook survey tract, are different from the glacial sediments described above. These sediments at the Van Hook tract were also deposited between the pre-Wisconsinan and Holocene include unbedded and unsorted mixtures of clays, silts, sand, and pebbles, in addition to cobbles and boulders (Clayton 1980). These sediments differ from those previously described due to the extent

to which they modified the topography. The topography formed by these collapsed and draped sediments has partially covered and obscured the topography which preceded the last glacial advance.

The Parshall Bay survey tract lies directly across the bay from the Van Hook tract. Glacial sediments similar to those present at the Tobacco Garden Bay tract are exposed throughout the Parshall Bay tract (Clayton 1980).

The McKenzie Bay tract is located in Dunn County on the Fort Berthold Reservation. The soils of this tract are those of the Sentinel Butte formation which was deposited during the Paleocene (Clayton 1980). These sediments include the grey brown silts, sand, clay, sandstone and lignite formed from river, lake and swamp sediments (Clayton 1980). Badlands terrain is common in this area.

The final tract, Charging Eagle Bay, is also located in Dunn County on the Fort Berthold Reservation. Formations present include the Sentinel Butte on the inland areas and undivided Quaternary and Upper Tertiary sediments along the shoreline (Clayton 1980). These deposits consist largely of river sediments which include Upper Quaternary terrace sediment gravels composed of subangular pebbles and cobbles. The latter is locally derived material including concretions, sandstone, and sili-cified wood. Other sediments are of possible Pliocene to Middle Quaternary age and originated from the Black Hills or Rocky Mountains. These deposits include clays, silts, sand and gravel characterized by rounded pebbles and cobbles of quartzite. Porphyry is also present. These sediments may be up to 100 m thick.

The physical environment and location of physiographic features affected both prehistoric and historic land use patterns. The geologic background, ecosystems, and past and present land use vary somewhat from one survey tract to another. The general study area has been described in this section. More detailed descriptions of each survey tract are presented under the survey results sections.

EVALUATION AND DISCUSSION OF PREVIOUS WORK

Literature Search

A literature search was performed prior to the fieldwork portion of the project. The search was conducted by Lawrence L. Loendorf, Chairman of the Department of Anthropology and Archaeology at the University of North Dakota, and Lori Orser Weston, Archeological Research Assistant. The results of the literature search provided information on previously designated sites in the project area. The state files, site lead files, and architectural site files maintained by the North Dakota State Historic Preservation Office (NDSHPO) were the primary source of the literature search. Several sites and site leads were also referenced in the supplement to North Dakota Data which is attached to the Archeological Inventory, Missouri River Reach Between Fort Benton, Montana and Sioux City, Iowa (Adamczyk 1975). The files and library of the Department of Anthropology and Archaeology, University of North Dakota were also utilized.

Two categories of site locations were identified; those located within the survey tracts and those located outside of the survey tracts. No additional research beyond the literature search was conducted for those sites which are located outside of the survey tracts. Consequently no further information other than the available site descriptions and evaluation can be supplied. Those cultural resources identified from the literature search to be located in the designated survey areas are described and evaluated in the present report. These sites discussions have been organized into the sections for the designated survey tracts. Many of the sites which appeared in the literature search results are also discussed in Previous Investigations and Historic Summary. A summary of the literature results organized by survey tract follows.

For the Lewis and Clark State Park survey tract there was a total of six previously recorded sites recorded. All of these sites were prehistoric. Not all the reported sites were within the designated survey tract.

Three sites were present in or near the southwestern portion of the survey area (32WI5, 32WI10, and 32WI15). All three are sites which contain tipi rings, the diameters of which range in size from 12-25 ft. None of these sites were relocated during the present survey. This may be the result of several factors: the sites are likely beyond the survey boundaries based on the site form sketch maps; the sites may have been covered or destroyed by erosion; the legal locations of the sites may be incorrect; and/or the site may have been disturbed by farming. Because the sites could not be relocated in the field, no further comments concerning them may be made.

Three additional sites were reported for the southern portions of the Lewis and Clark State Park survey tract (32WI6, 31WI7, 32WI42). 32WI6 has been described as an occupational site containing scattered flint and pottery. 32WI7 was also recorded as an occupation site which exhibits flint and pottery. 32WI42 was recorded as a lithic scatter in association with a possible tipi ring.

The reported legal locations of the sites indicate that 31WI7 completely overlaps the southern half of 32WI42. Further, 32WI6 seems to be located directly north of the eastern half of 32WI7. The close proximity of the site boundaries may indicate the existence of a single, much larger site rather than three smaller, individual sites.

The (NDSHPO) files for 32WI6 and 32WI7 contain only excerpts from Kivett and Wedel (1948) and do not contain sketch maps nor site forms. Therefore although the existence of a single large site is a distinct possibility, no definite determinations can be made because of the absence on necessary information (i.e., precise legal locations, sketch maps and verbal descriptions of the site locations). Resurvey of these areas is not possible because of the perennial inundation of 95% of the designated location of 32WI6 and 75% of the designated location of 32WI7. In addition the locations of these sites were beyond the defined survey boundaries for the present project.

At the Tobacco Garden Bay survey tract there were two previously recorded sites. One was historic and the other prehistoric. The prehistoric site was within the survey tract but the historic site was beyond the present project boundary.

32MZ144, an historic homestead, was recorded in 1979 by the U.S. Forest Service. Because the site is not within the boundaries of the Tobacco Garden Bay Area it was not resurveyed. As a result, no further comments nor evaluations can be made.

32MZ406 is identified as a prehistoric campsite. Johnson (1976) incorrectly placed its location. The site was relocated on November 9, 1981 as part of the Tobacco Garden Bay survey. It was found to be in essentially the same condition as when Johnson recorded it in 1976. The only cultural material found in association with the site was located on the beach areas. These areas are severely eroded, a factor which contributes to the poor integrity. Intact areas may likely exist north of the beach.

The National Guard Area had no previously reported sites within the survey boundaries. Three sites leads based on the Thad Hecker files (1938) indicate the presence of prehistoric campsites in the vicinity of this study area. According to the NDSHPO records no official site forms have ever been assigned to these locations. All three prehistoric campsites are beyond the survey boundaries and consequently were not relocated in the present survey.

The Hofflund Bay Area had no previously reported sites within the present project boundaries. Three prehistoric campsites were reported to be in the vicinity, but beyond the actual survey boundaries. These site leads (Hecker 1938) have never been assigned official site numbers. Since the three locations are beyond the present survey area, they were not relocated.

The Four Bears State Park area had no previously reported sites in the literature search. No prior surveys have been conducted in this particular area. In contrast, the New Town area, east of the Missouri River (Lake Sakakawea), has had numerous previous archeological investigations.

The New Town Area has twelve previously recorded sites. Of these, two are paleontological, eight are prehistoric and two are historic. Six are located beyond the present project boundaries and six are within the study area.

The original Smithsonian Institute River Basin Survey reported a large number of sites in and around the New Town survey area. Other surveys have subsequently recorded more sites. The sites located adjacent to the survey area will be described first.

Six sites are identified as being outside of the survey tract. Four of these sites, 32MN4, 32MN17, 32MN202 (Buffalo Head Site), and 32MN203 (Triple Creek Site), are recorded as occupation sites. 32MN232 is recorded as a lithic scatter and 32MN233 was reported to be a pre-historic campsite. The sites are individually described below. All of the sites are located north of the survey tract, except for 32MN17 which has been inundated by Lake Sakakawea.

Kivett recorded site 32MN4 on July 27, 1947 for the River Basin Survey. Metcalf relocated the site by map study on April 29, 1952, in a different section. Kivett describes it as being on the left bank of the mouth of the Little Knife River, south of the scenic highway on a second terrace above the river. Metcalf's correct legal location appears to correlate with the location description. The site had been cultivated and cultural material was scattered over a 100 yard area. Cultural material included pottery, flint chips, two lead bullets, broken stone and animal bone.

Site 32MN17 was recorded by Kivett on August 11, 1947, for the River Basin Survey. On April 29, 1952, Metcalf revised the legal description. The site area is now inundated. Material recorded for the site include: pottery, worked flint, animal bone, and obsidian chips.

T. W. Haberman from UNDAR recorded 32MN202 on June 2, 1974. The site is "along the beach and around the bend, north of Moe site" which is at least $\frac{1}{2}$ mile north of survey area. Bison skeletons are eroding out of cutbank with cultural material including a knife, knife base, core and a few flakes of KRF.

Site 32MN203 was recorded by UNDAR personnel on June 2, 1974. This site is along the beach north of 32MN202. This site is outside of the survey area by at least $\frac{1}{2}$ mile. Cultural material observed at the site include KRF and bison bone.

UNDAR personnel, on June 6, 1974, recorded site 32MN232, a lithic scatter. Cultural material was located on the Old Sanish golf course which is $\frac{1}{8}$ mile north of the survey tract.

In August, 1973, UNDAR personnel recorded site 32MN203, a prehistoric campsite. The site is located on a small knoll approximately 100 m north of survey tract directly east of the Old Sanish golf course. Material collected at the site included 13 KRF flakes, one pink quartzite shatter, two chert flakes, and one possible granite hammerstone.

The NDSHPO files provided information on five sites within the New Town survey tract. In addition, a sixth site found to be in the association with three other previously designated sites has been included in the following discussion.

32MN10 is a lithic scatter which Marvin Kivett originally recorded in 1947 as part of the Smithsonian Institution River Basin Survey. He incorrectly placed its legal location. The site was relocated and the corrected legal descriptions have been forwarded to the North Dakota State Historic Preservation Office. Kivett recorded cultural material consisting of flint chips and worked flint eroding out of 50 feet of road. In 1950, G. Hubert Smith visited the site while on a research contract with the National Park Service. He collected one projectile point and eight stone fragments from the edge of an eroded bank 100 feet south of the Verendrye Monument. The site was relocated on August 14, 1981 by the UNDAR-West crew when lithic debris was found in the eroded slopes of the ridge and the deeply eroded two-track trail which passes through the center of the site.

The Verendrye Monument is located in the survey area. This site has been incorrectly located on Regional Environmental Assessment Program (REAP) files. The monument was originally a National Monument, but was later declassified and removed.

Located to the north of Crow-Flies-High Butte is the old Sanish townsite. Originally recorded in the REAP files the site is presently inundated by Lake Sakakawea, although several foundations could be seen in shallow water near the beach.

Two invertebrate fossil locations recorded in the REAP files are located in the vicinity. The first could not be relocated in the current project. The second is located outside of the survey area, but is included in this section because of its relationship with other (REAP) sites in the area. The location of this site indicates it is now inundated by Lake Sakakawea, consequently it could not be relocated.

The last site to be addressed in this area is 32MN101 (Moe Site). The site was originally recorded by Dr. Fred Schneider (UND) in 1973. Schneider described it as a multi-component site with occupations from Paleo-Indian through the Historic period. The site was relocated on August 18, 1981. It is continually being eroded by wave action from Lake Sakakawea and the majority of the site is gone. The eastern periphery appears to be the only portion of the site that is relatively undisturbed. Unfortunately, this was the least intensively occupied area of the site. The site is still being actively collected by artifact collectors, however, the existing material is usually found on the beach and lacks good context.

The Van Hook Area had three previously reported cultural resource areas. Two were prehistoric and one historic.

Hecker (1938) reported two prehistoric campsites in the Van Hook area. These could not be relocated in the field. The legal locations may be inaccurate among other factors. The site leads have not been given official site designations.

The historic site is the old Van Hook townsite. This was relocated in the field. Foundations and some standing structures are present. The townsite is adjacent to, but not within, the present project boundaries.

The Parshall Bay Area has not been the subject of any previous cultural resource inventory projects. No historic nor prehistoric sites are on file for this survey tract.

The McKenzie Bay Area had no previously recorded sites on file within the project boundaries. One prehistoric site, 32DU16 is in the vicinity southwest of the survey tract. The site is an occupation and workshop area with flakes eroding from a terrace. The site was recorded by Metcalf on September 25, 1950. The site is perennially inundated by water from Lake Sakakawea.

The Charging Eagle Bay Area had no prior cultural resource inventories. No site forms nor site leads are on file for this survey tract.

Previous Investigations

Archeological investigations in North Dakota until recent years have been focused on the Missouri River Trench. The presence of large earthlodge villages known since Euro-American contact has dominated the interest of archeologists throughout the twentieth century. The construction of the Garrison and Oahe Reservoirs and the threatened flooding of these sites was initially addressed by development of the River Basin Inter-Agency Salvage Program. The program was organized by the Smithsonian Institution through funding from the Bureau of Reclamation and the National Park Service with assistance from the Corps of Engineers. The purpose of the program was to locate and evaluate the important sites.

The most visible of these sites were the earthlodge villages, consequently they received the most intense examinations. In the Garrison Reservoir, Marvin Kivett directed the first surveys in 1947. In 1950 excavations commenced on Rock Village (Hartle 1960; Lehmer et al. 1978). Several other sites on the southern portion of the reservoir received attention including: Heart Village, Nightwalker's Butte in the Bull Pasture and Nightwalker's Butte in the Badlands (Caldwell and Smith 1962). Star Village was the last Arikara village and was near Like-a-Fishhook Village. The inhabitants of Star Village joined the Mandan and Hidatsa at Like-a-Fishhook Village, the last earthlodge village. Investigations at Star Village were reported by Metcalf (1963a). The work at Like-a-Fishhook and the associated trading posts of Fort Berthold I and II have been reported by Smith (1972).

Historic sites were also inventoried (Mattison 1955) and several investigated including Fort Stevenson (Smith 1960) and Fort Berthold. Kipp's Post, a small trading post near the White Earth River in Mountrail County, was investigated and reported by Woolworth and Wood (1960, 1962). A historic period village, 32MZ21, location has been investigated and reported by Malouf (1963). The village was near the New Town survey tract and was occupied by a dissident group under the leadership of Crow-Flies High.

In addition to the late sites mentioned above several smaller sites are listed by Metcalf (1963b). Malouf (1951) excavated three sites now

covered by Lake Sakakawea in Mercer County on the southern side of the Missouri River. All of the sites were considered to be late period campsites although one had a nonceramic component. The Evans site first investigated by Garrett (1952) was tested further by Schneider and Kinney (1978) and produced Late Prehistoric and Woodland materials. The site was interpreted as a late summer to late fall base camp.

Other Woodland sites include a site near Williston reported by Wood (1956). The report was primarily a description of the ceramics and chipped stone artifacts. Wood and Johnson (1973) reported the High Butte site, a Plains Woodland/Besant occupation and mound complex below Garrison Dam. The site was placed in the middle of the Plains Woodland period with a radiocarbon date of A.D. 350 $\pm$ 140. The site may have ties with the eastern woodlands, as demonstrated by the ceramics, and ties with the north and west, as demonstrated by the Besant projectile points.

Surveys conducted in recent years include those reported by Haberman and Schneider (1975) and Leaf (1976). Both surveys were conducted by the University of North Dakota for the National Park Service. Segments of shoreline and adjacent uplands were examined. Recommendations were made for future survey techniques and site protection. Several sites were recommended for nomination to the National Register. Haberman and Schneider (1975:110) noted the lack of Late Prehistoric period sites on the mid-level terraces and upper slopes of the Trench. They also noted the under-representation of Woodland ceramic bearing sites throughout the valley and note that many of those sites are located in areas where small streams cut the valley slopes (1975:115). Both surveys located numerous small sites generally described as lithic scatters. This type of site was generally overlooked by previous surveys that concentrated on larger and presumably more important sites.

A small scale survey was conducted by Dennis Johnson, a University of North Dakota student, for an Honor's Thesis research program. The survey (Johnson 1976) was conducted in McKenzie County from Tobacco Garden Bay along the shore to the west. His findings were similar to the other surveys except that he located more historic sites.

The remaining archeological investigations include the excavation of two extremely important sites in the upper portion of the reservoir.

The Moe site (32MN101) was initially recorded by Marvin Kivett in 1947. It is located at the northwest end of the New Town survey tract. Investigations were conducted in 1973 and 1974 by the University of North Dakota under the direction of Fred Schneider (1975). The site was extensively impacted by wave action and the investigations were oriented to determine how much of the site remained and to salvage hearths visible in a cutbank. The major part of the site was found to be destroyed. Diagnostic artifacts were recovered from the beach indicating that the site was multicomponent ranging from Paleo-Indian to Historic. The work at this site has stimulated further investigations by Schneider, culminating in a report on blade technology attributed to the Paleo-Indian period at the Moe site (Schneider 1982a). The Moe site was the first site in North Dakota with a documented Paleo-Indian occupation and Schneider has followed that with an analysis of extant collections (1982b). Several hundred Paleo-Indian projectiles have now been documented. Indications are that the locations are centered on the Missouri Trench, although that may be an artifact of the last glaciation destroying the earliest sites in the eastern part of the state.

The second major site excavation in this portion of Garrison Reservoir is the work of University of North Dakota Archaeological Research at the Mondrian Tree site (32MZ58). The site is located near the confluence of the Yellowstone River. Initial shovel probing commenced in 1979 reported by Simon (1979) and formal testing continued into 1980 (Roberson 1980). This was followed by mitigation excavation. An interim report summarizing the findings has been presented (Toom 1981). The site is a deeply stratified multicomponent occupation area. The occupations range from the Middle Archaic through the Historic periods. It is anticipated the investigations will contribute to an understanding of the Middle and Late Plains Archaic occupations on the Missouri River.

In general the work carried out in the Missouri River valley over the last 40 years has progressed as archeology itself has developed. The early work was not problem oriented, although some treatment of research questions was approached. The synthesis of data from the River Basin era produced an initial volume by Lehmer (1971) oriented primarily to the late occupations.

The surge of energy development in the form of oil and gas exploration in western North Dakota has resulted in many investigations on lands previously unexplored for cultural resources. Several hundred sites have been recorded and many tested as the result of cultural resource management programs on the Little Missouri National Grasslands and other federally administrated lands since the mid 1970s. Temporally diagnostic artifacts have been recovered and several radiocarbon dates have been generated from features which are indicative of Middle Prehistoric period to Historic period occupations at a variety of site types. A few major investigative projects such as Anderson Divide (Simon et al. 1982) and Cinnamon Creek Ridge (East et al. 1981) have contributed to the development of a cultural and environmental sequence for the Little Missouri drainage. Other major investigations such as at the Mondrian Tree site (Toom and Gregg 1983) have contributed to the interpretation of the prehistoric sequence in the northwestern portion of the North Dakota.

The results of investigations of the history and prehistory of the study area are presented in the following overviews. The results of the present study may then be considered against the backdrop of the cultural chronology of the study area, and on a larger scale, the Northwestern Plains regional prehistoric record. In this was the results of these previous studies, may in conclusion, be used to augment a synthesis of the cultural-environmental sequence of the present project study area.

Prehistoric Summary

The survey tracts lie within the Little Missouri River and Missouri River drainages. As part of the Northwestern Plains, the drainages offered a variety of resources to prehistoric inhabitants. Climatic and topographic conditions probably affected the availability and use of materials over time (Kuehn 1981). Archeological studies, a recent phenomena in northwestern North Dakota, are just beginning to define the chronological and adaptive sequence.

The Little Missouri drainage is considered within a dual transitional context. It presents a geographical transition between the tall

grass prairie to the east of the Missouri River and the short grass prairie to the west. This area also presents a cultural transition between the Plains villages along the Missouri Trench to the east and the bison-hunting nomads to the west.

Former prehistoric chronological studies have ignored the Little Missouri and the upper Missouri in North Dakota treating this area as a periphery of other subareas such as the Middle Missouri. Several syntheses have been written concerning chronological sequences for the Northwestern Plains (Mulloy 1958; Reeves 1970; Syms 1977; Frison 1978), however all are specific to subareas. One cannot take a chronological sequence or a paleoecological reconstruction from one and directly apply it to another study area. The Northwestern Plains is an area of physical and cultural diversity in both historic and prehistoric times.

In one of the first studies of the Little Missouri, Loendorf (1978) outlined four general temporal divisions: the Early Prehistoric period, 12,000-8000 B.P. (10,000-6000 B.C.); the Middle Prehistoric period, 8000-1500 B.P. (6000 B.C.-A.D. 500); the Late Prehistoric period, 1500-170 B.P. (A.D. 500-1780); and the Historic period, 170 B.P. to present (A.D. 1780 to present).

Time spans given for each are used to group data and indicate each period's estimated duration. It is recognized that diffusion of technologies and materials, as well as migrations of groups, have influenced the local prehistory. Influences could have come from any direction.

General temporal divisions are utilized in the following discussion as sufficient data has yet to be generated with which to define phases. Within this context recently generated data from the study area will be discussed in comparison to data from the surrounding plains (Figure 2).

Early Prehistoric Period

The Early Prehistoric period contains the earliest discovered evidence of human populations in the Northwestern Plains. Distinctive lanceolate points such as Clovis, Folsom, and Plano were used along with scrapers, choppers, and knives (Wormington 1957). The Paleo-Indian tradition subsistence strategy was based on hunting supplemented by gathering, use of the spear and atlatl. Mulloy (1958:209) suggests camps were small, composed of limited groups of people and occupied for

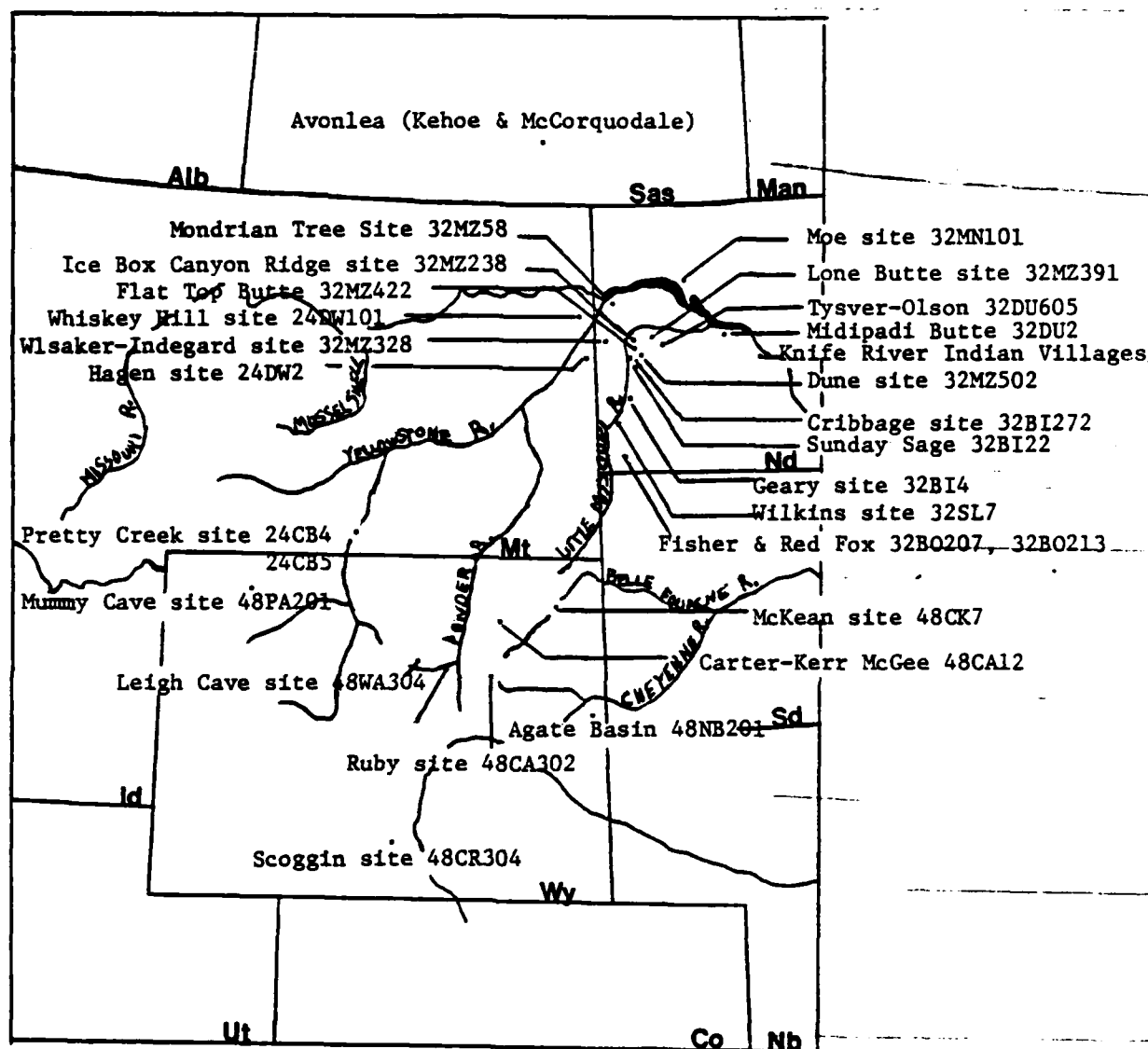


Figure 2. Selected archeological sites referenced in text from the Northwestern Plains.

short periods; there may have been occasional use of perishable shelters.

Frison (1978:22, 27) recognizes the pre-Holocene and early Holocene as possibilities for the existence of pre-Clovis occupations. Folsom points have been documented from the Carter-Kerr McGee site near Gillette, Wy., and date from 11,000-10,600 B.P. No intermediate forms between Clovis and Folsom have yet been reported from the Northwestern Plains (1978:30-31).

Late in the Paleo-Indian tradition, a larger variety of projectile point types appeared (Frison 1978:31-32). Agate Basin and Hell Gap points date from 10,500-10,000 B.P. These are followed by Alberta Projectile points (9500-9000 B.P.) and the Cody complex which includes Scottsbluff and Eden projectile point types (8800-8400 B.P.) (1978:32-34). Parallel oblique flaked projectile points such as Pryor Stemmed, Lovel Constricted, James Allen, and Angostura are represented. The Frederick complex (8400 to 8800 B.P.) and Lusk complex (7900 B.P.) are also present (1978:34, 37). The terminal date for the Paleo-Indian period in Wyoming is placed at ca. 8300 B.P.

The southwestern portion of Manitoba, north of the study area, was clear of the Late Wisconsin ice mass by 13,000 B.P. Glacial Lakes Agassiz and Souris were formed by the ponded meltwater and placed geographic limitations on the range of prehistoric hunters until 7000 B.P. Early Holocene fauna included mastadon and/or mammoth, *Bison occidentalis*, horse and muskox (Pettipas 1970:5-12). Surface evidence has produced Clovis and Midland projectile points; Plainview, Hell Gap, Agate Basin, and later Alberta and Cody points occur more frequently in surface collection material than earlier Clovis and Folsom points (1970:14-16).

Pettipas (1970:16-18) notes that collected paleo materials from Manitoba are predominately Swan River Chert followed by Knife River Flint (KRF) and Limestone Chert. The presence of KRF indicates that Paleo-Indians several hundred miles north of the study area had knowledge of the KRF quarries in westcentral North Dakota and had obtained quantities of the material either through trade or direct travel.

The best documented Paleo-Indian tradition evidence from North Dakota comes from the eastern shore of Lake Sakakawea. Schneider's

(1975) investigation of the Moe Site (32MN101), produced the most data. Projectile points recovered from the surface of the site included two Clovis and five Folsom points. Middle Prehistoric and Late Prehistoric period diagnostics were also recovered. A heavy reliance on KRF was evident for all time periods. Schneider also noted that scrapers and perforators made on blades of KRF may be diagnostic of the Paleo-Indian tradition (1975:26-30).

In a recent survey of collections throughout North Dakota, Schneider (1982) documented 192 Paleo points. KRF comprised 77% of the projectiles. Schneider suggests that more large pieces of high quality flint were available during the Early Prehistoric period than in subsequent prehistoric periods. Preliminary trends concerning the distribution of Paleo-Indian diagnostics throughout North Dakota were posited: 89% of the points are from west of the Missouri Coteau; Paleo points are concentrated in the Missouri River valley and adjacent vicinity; fluted points tend to be concentrated in the west, while Plano points have been found throughout the state.

To date, no Clovis or Folsom sites have been found or reported within the Little Missouri drainage. It is probable that these site types are present and only more surveys and time are needed before they are located. Another possible explanation for the lack of recorded Paleo materials in that portion of the study area is that much of the Early Prehistoric period landscape has been eradicated.

Paleo-Indian tradition materials have been reported from areas adjacent to the drainage. Fluted points of heavily patinated KRF were found in a field on the Little Beaver Creek drainage, north of Beach, ND (Davidson 1982:personal communication). A Folsom point of KRF was found with other Early Prehistoric period artifacts near Rhame, ND (Wolfgram 1979:personal communication). Late Paleo points of KRF have been reported from the Rainy Butte area east of the drainage (Gardner 1981:personal communication). An Agate Basin point was reported from an eroded terrace about a mile from the Little Missouri River in McKenzie County. It remains puzzling that Paleo-Indian tradition artifacts are so scarce within the drainage itself, while they do occur in the surrounding countryside.

Paleo-Indian complexes may have persisted in the southern Canada Plains longer than in Wyoming. These complexes were likely present in western North Dakota until 8000 B.P. (6000 B.C.) or later. Environmental factors would have directly influenced the adaptations of these prehistoric peoples. As no sites of the Early Prehistoric period have yet been recorded or excavated in the Little Missouri drainage, the period of transition from Paleo-Indian to Archaic adaptations is totally unknown. A date of 8000 B.P. (6000 B.C.) is posited as a midpoint for this transition in the study area since environmentally it has more in common with Wyoming than Manitoba. Archeological evidence will be necessary to define this change in the material culture sequence.

Middle Prehistoric Period

The Middle Prehistoric period in the Northwestern Plains is marked by the establishment of the Plains Archaic tradition. The use of smaller projectile points and increased procurement of vegetal materials characterize the subsistence pattern. The Pleistocene megafauna had become extinct forcing hunters to pursue smaller game species. The transition from the Paleo-Indian tradition to the Archaic tradition began with Folsom. During the Plano phase many adaptations are not significantly different from Plains Archaic adaptations. The primary distinction is made on the basis of projectile point style, in particular the Archaic use of side-notching.

The Archaic lifeway persisted for at least 6000 years on the Northwestern Plains. Unlike the early portion of this tradition, considerable data is available for the middle and late portions. The Archaic tradition is divided into three parts (early, middle, and late) to facilitate the presentation of material in the following discussion.

The early Plains Archaic tradition is generally recognized as covering between 8000 to 6000 B.P. (6000 to 400 B.C., corresponding to the Altithermal climate period). Mulloy suggested that some Middle Prehistoric period sites may have only become attractive after the Altithermal and then continued to be attractive until Historic times (1958:208-209). A major change in projectile point types took place during this time, but the use of plano-convex snubnosed end scrapers, choppers, graters, manos and grinding stones and retouched flakes con-

tinued through the Middle Prehistoric period. Bones were often worked into tools in addition to the lithic tool kits. Small nomadic bands moved over the plains living in caves or in the open in perishable shelters (1958:209).

Frison (1978:40-41) has shown that the hypothesis of a cultural hiatus from the Northwestern Plains may not hold true for different subareas. Evidence has been found for groups occupying areas of greater topographic relief, such as the mountain foothills. The lack of evidence from the open plains may be due to erosional and depositional sequences.

Previous to test excavations at the Tysver-Olson site, 32DU605 (Kuehn, 1982), no radiocarbon data was available from the Little Missouri study area for the early Plains Archaic tradition. The site is located approximately five miles west of the Killdeer Mountains. Dates of 5345 ± 110 and 4985 ± 100 B.P. were obtained from two deeply buried horizons. Recovery of a large side notched projectile point similar to those collected at Pretty Creek, 24CB4 and 5 (Loendorf et al., 1981) and Mummy Cave 48PA201 (Wedel et al., 1968) support the early radiocarbon dates.

Information revealed at 32DU605 contributes hypotheses as to how the area was affected during the Altithermal period. If the area was characterized by a severe drought at that time, it is possible that the drainage and associated badlands may have presented a hospitable environment.

The middle Plains Archaic tradition is marked by the development and extensive spread of the McKean complex throughout the Northwestern Plains. The extensive spread of this complex and the density of sites from this time period may be partially attributable to a change to more favorable climatic conditions.

In Wyoming, Frison (1978:53-56) dates the middle Plains Archaic tradition from 5500 to 300 B.P. and to 2500 B.P. in the Powder River Basin. Investigations at Leigh Cave, dated at 4000 B.P., provide data on utilization of a variety of plants and nuts to augment game animals in the subsistence base. Bison kills and arroyo traps were also commonly used at this time. Projectile point types include the McKean

lanceolate, basally-notched point and others termed Duncan, Hanna, Mallory, and Yonkee (1978:49-50).

Mulloy (1958:150-151) lists several diagnostic characteristic of middle Plains Archaic tradition complexes; lanceolate projectile points with a variety of bases and notches, gravers, bone game counters, triangular projectile points with large side-notches, long slender knives with corner-notched and concave bases, knives with oblique, square tang hafting elements, choppers, bone tools, stone discs and shell pendants.

Within the McKean complex there are three generally recognized projectile point types: McKean, Duncan and Hanna points. Syms (1970: 137-138) suggests that these three varieties of points may be attributed to three interacting groups. Frison (1978:49-50) notes that the variations may be within one type or represent separate types. Further, the types may also denote different population groups and/or slight temporal differences.

The McKean complex may represent the material technology left by groups of hunters moving down from the mountain foothills at the end of the Altithermal. The McKean site, 48CR7, is located in northeastern Wyoming on the Belle Fourche River. Mulloy's (1954) investigations at the site reveal it to be a multi-component occupation containing many diagnostics and hearth features. In comparing results, Mulloy (1954: 454-455) found similarities between the upper and lower levels at the McKean site and levels I and II at Signal Butte, Nebraska. The McKean lower level and Signal Butte I contained artifacts indicative of early Middle Prehistoric period occupations including the occurrence of lanceolate and side-notched points with concave bases, scrapers, presence of cache pits and unlined or stone-lined hearths. The upper level at the McKean site yielded a radiocarbon data of 3287 ± 600 B.P. (1954: 456).

In his investigations at the Scoggins site, Lobdell (1974:123) found evidence for the contemporaneous occurrence of lanceolate points with concave bases and other lanceolate points with deep side-notches. The study concluded that the latter are a variety of McKean point and that side-notched points are not confined to the Late Prehistoric nor proto-Historic times.

Mallory investigated two Middle Prehistoric period sites at Bowman-Haley Reservoir in southwestern North Dakota as part of the Smithsonian River Basin Surveys in 1964-65. Syms (1969:132-136) summarized the findings at the Fisher (32B0207) and Red Fox (32B0213) sites. The Fisher site produced a McKean point from level 4, however, no radiocarbon date is available for the level. The Red Fox site produced McKean diagnostic points from levels 3, 4, and 5. Level 3 produced a radiocarbon date of 1900 ± 60 B.C. (3850 ± 60 B.P.). Level 4 uncovered a large shallow depression greater than 10 ft. in diameter that had been excavated to a depth of .5-.6 ft. The structural remains were associated with fire pits and a cache pit from which Syms (1969:139) inferred a semipermanent occupation. According to Syms (1969:138), Mallory suggested that plant remains from levels four and five indicate greater moisture in the area than at present.

Fraley (1980) recently completed a study of site distributions in five ecosystems in the Glendive-Wibaux area. Of the 155 sites recorded 97 were lithic scatters. He concluded that early and middle Plains Archaic tradition sites contained a predominance of porcellanite in contrast to late Plains Archaic tradition sites which exhibited a shift to brown chalcedony. The lag deposits of the latter material which occur in the Glendive-Wibaux area are indistinguishable from the poorer grades of KRF found in Dunn County, N.D. Fraley suggests that site placement was influenced by potential for gathering plant resources, which would be greatest at the badland edges where the grasslands and riparian ecosystems intersect.

Simon and Borchert (1981a:54, 56) report a McKean component from the Ice Box Canyon Ridge site, 32MZ38, a cluster of six concentration areas spread over a mile of linear ridgetop. Testing at Concentration One uncovered a shallow, bowl-shaped hearth approximately 30 cm in diameter. A radiocarbon data of ca. 4750 B.P. was obtained from the Little Missouri drainage.

The late Plains Archaic tradition is characterized by a continuance of the Archaic lifeway but a change in technology. Mulloy (1958:211-213) states that there is an increased emphasis on bison hunting including use of arroyo traps. The subsistence pattern continues to rely on

plant gathering and hunting. The population may have been comprised of small groups of nomadic hunters who lived in available caves and rock shelters, but most often in open camps with perishable shelters. Stone circles or tipi rings may be associated with these latter sites.

Within the late Plains Archaic tradition three complexes are generally recognized throughout the Northwestern Plains: Pelican Lake, Avonlea, and Besant. Reeves (1970) states these complexes are present on the Canadian Plains between 3000 B.P. and 1000 B.P. In the Missouri Trench, Ahler (1978) describes a pre-Woodland, Pre-Village, Archaic tradition followed by a later Woodland period. Frison (1978:59, 61) describes sites of the late Plains Archaic tradition in Wyoming as dating from 3500 B.P. to 1450-1750 B.P. Beginning about 3000 B.P., projectile points changed from unnotched or large side-notched to true corner-notched identified as Pelican Lake, although other large corner-notched points continued in use until relatively recent times, ca. 1450 B.P. (1978:58).

Mulloy (1958:209-210) suggests that the small quantities of artifacts at sites indicates small populations and/or brief occupations. There is an increase in use of manos and metates to process vegetal materials. Reeves (1970:160) postulates that the Pelican Lake complex is a continuation of the McKean complex and that there is direct cultural continuity between the two. He also notes the KRF is the predominant lithic material used in Pelican Lake sites in Manitoba and Saskatchewan (1970:161).

The Sunday Sage site, 32BI22, (Simon and Borchert 1981b:104-105) is a multicomponent, but unstratified, stream terrace site in the Little Missouri Badlands which produced late Plains Archaic tradition tools. An earth and stone filled feature was radiocarbon dated at ca. 1680 B.P., however there were no diagnostic tools in direct association due to construction disturbance at the site. A high percentage of projectile points including Mallory, Pelican Lake, and Besant types were present in the tool collection. The site was utilized on a temporary basis by nomadic hunting groups on several occasions. Much fire heated rock was found throughout the cultural layer in contrast to the small

amount of lithic debris. The Sunday Sage site is one of the few stream terrace sites which have been investigated in the Little Missouri drainage.

A late Archaic projectile point was recovered from the Ulsaker-Indegard site, 32MZ328, by Johnson (1981:21-22), however no datable features were uncovered during the testing project. The site is located on a terrace of Bennie Peer Creek, a major tributary of the Yellowstone River. Predominant lithics were porcellanite and KRF.

Simon and Borchert (1981a:57, 59, 67) report a late Plains Archaic component from the Ice Box Canyon site, 32MZ38, which produced a biface fragment and projectile point tip in association with a shallow basin-shaped prepared hearth. The feature produced a radiocarbon date of 2850 B.P. The dated level was primarily KRF lithics and overlay a level containing predominantly porcellanite lithics. A second area of the site produced a component radiocarbon dated at 1825 B.P. (1981a:48-52) associated with a Pelican Lake type point of KRF.

Investigations at the Cribbage Site, 32BI272, (Aivazian 1981) produced radiocarbon dated components. Area A of the ridgetop site produced a predominance of KRF with an associated date of 3250 B.P. (1981:59). Area B produced a date of 2810 B.P. in association with predominantly porcellanite lithics. Aivazian concludes that Areas A and B were probably single occurrence activity areas centered around single shallow firepits (1981:67).

Avonlea type points have been described by Reeves (1970:166) as a later extension of the McKean - Pelican Lake complex. They are described as being contemporaneous with Besant, but do not always occupy the same areas. Joyes (1970:217) has reported bison pounds and jumps in association with Avonlea projectile points.

The distinctive Avonlea points are described by Reeves (1970:163, 166) as either corner-notched, acute shouldered with convex or straight edges or side-notched, obtuse shouldered with convex or straight body edges. The edges may, or may not, be serrated. Ceramics, when present, are fabric impressed, bossed or punctated and vessel forms are conoidal.

Avonlea points are relatively common along the Powder River and Yellowstone River drainages in southeastern Montana (Clark 1980:personal

communication). Reeves (1970:166) contends that Avonlea is present in the Black Hills and northern Rocky Mountain areas but absent from the Besant area of the Middle Missouri. To date, no known specimens of the Avonlea type have been reported for the Little Missouri drainage. Late Archaic tradition points such as Pelican Lake, which generally precede Avonlea and Besant in time, are fairly common.

A Besant bison kill, the Ruby site, near Gillette, Wyoming, was dated at ca. 1750 B.P. by Frison (1978:58, 61-62). The Besant projectile points were described as large, shallow side-notched dart-type points, although a few corner-notched points were present. The site produced evidence of log and post corrals indicative of a highly developed bison hunting complex.

Reeves (1970:168-179) postulates that there is little cultural continuity between Besant and Pelican Lake, but states that Besant contains some similarities to Middle Woodland traditions such as the association of ceramics and burial mounds. Besant peoples evidently had well developed trade and communication networks with the Middle Missouri peoples based on the transportation of significant quantities of KRF to Besant sites up to 600 mi. distant from the quarries (1970:172). Reeves states that Besant was an eastern intrusion onto the Northwestern Plains and that it displaced Pelican Lake over large areas.

The preferential use of KRF as an indicator of Besant is suggested by Joyes (1970:214). Two groups of pottery, Laurel ware and Avery Corded ware, have been identified with Besant projectile points from the Avery site in Manitoba and the component has been dated at 1450 to 1650 B.P. Reeves (1970:164) states that Besant ceramics are more frequent in the Manitoba and Dakota area than farther west. The pottery is described as exhibiting vertical, diagonal or horizontal cording and is occasionally bossed or punctated. Vessel form is often conoidal.

Two types of Besant points have been described (Reeves 1970:162-163). The side-notched atlatl point variety has obtuse shoulders and convex body. Unnotched points exhibiting a straight base and convex body edges may be present. Samantha side-notched arrow points are affiliated with the complex. An initial date of 1550 B.P. is given for the latter.

Several Besant points have been located in the Little Missouri drainage by University of North Dakota archeologists. They have been recovered from excavations at the Sunday Sage site, 32BI22 (Simon and Borchert (1981b) and from the Crosby Creek drainage (Johnson 1981).

A few other late Plains Archaic tradition sites have been investigated in the Little Missouri drainage. East et al. (1982) report three temporary camp sites in the Lone Butte area, one of which (32MZ391) produced a late Archaic projectile point. Diagnostic projectile points such as Oxbow, Duncan, Hanna and Pelican Lake were reported from sites on Cinnamon Creek ridge (East et al. 1981:36). No Plains Archaic tradition radiocarbon dates were reported.

Ahler (1978:10-11) states that toward the end of the Plains Archaic tradition, the Plains Woodland tradition was established on the Missouri Trench from 1950 to 1050 B.P. Material cultural changes which occurred at this time included the introduction of pottery and the establishment of relatively permanent dwellings in small villages. Subsistence continued to center on bison hunting supplemented by gathering and limited horticulture. Sites with mounds and village remains occur along the major rivers of eastern and central North Dakota.

In discussions of the Whisky Hill site, 24DW101, Johnson (1977:39) addresses the relationship between Besant and Woodland tradition on the Northwestern Plains. She points out that different criteria have been used to identify each and that the distinction between the two may not be applicable. In addition, many of the previously held distinctions are based on negative evidence from the western Dakotas, areas largely unexplored archeologically, which gives the false impression of a cultural boundary. The study concludes that Besant projectile points and Woodland pottery are probably different parts of the same material culture, the Plains Woodland tradition (1977:40).

The initial date for the Middle Prehistoric period is tentatively set at 8000 B.P. (6000 B.C.) for the Little Missouri drainage. The Plains Archaic tradition of hunting and gathering predominates until the introduction of Woodland influences signals the beginning of the Late Prehistoric period at ca. 1450 B.P. (A.D. 500). The Little Missouri drainage is rich in Plains Archaic tradition sites and there is no reason to believe this does not continue on the Missouri. During the

middle and later portions of the Middle Prehistoric period the environment must have been particularly inviting to hunters and gatherers since many sites containing components representative of this time period have been recorded and tested in the Little Missouri area. Such investigations have been limited in the Missouri drainage.

Late Prehistoric Period

Mulloy (1958:222) gives 1450 B.P. (A.D. 500) as the initial date for the Late Prehistoric period. There is archeological evidence of Woodland occupations of the Missouri Trench prior to the development of the Plains Village pattern (Wedel 1961:168-169). In southern Manitoba and Saskatchewan Joyes (1970:221) notes that within the Northwestern Plains cultural influences come from the west until ca. 1000 B.P. with subsequent cultural influences coming from the east. Groups moved onto the Plains because the nomadic bison hunting economy offered an attractive alternative to other prehistoric lifeways.

The Plains Woodland tradition is distinguished by two major characteristics, the regular use of ceramic vessels and mound burial ceremonialism (Gregg 1983:199). One or both characteristics may be present at sites from this tradition. The lifeways of these peoples shared many similarities to that of Plains Archaic hunter-gatherers. The development of ceramics affected food preparation, storage, and probably wider changes in societal organization (1983:199). Within the present study area Gregg (1983:200) suggests a temporal range for the Besant complex of ca. 100 B.C.-A.D. 750. The Besant complex is one of several complexes within the Plains Woodland tradition and is the one represented within the present project boundaries. Wood (1956) reports a Plains Woodland tradition site south of the Missouri River in northern McKenzie County (32MZ2). The Midipadi Butte Site (Good and Hauf 1977; Kuehn et al. 1982) is another site along the southern side of the Missouri River which exhibits evidence of Plains Woodland tradition occupation. The Moe site (Schneider 1975) contains evidence of Plains Woodland tradition occupation.

An early Late Prehistoric period horizon exists within the newly named multiple component site, Midipadi Butte, 32DU2. The site is located south and slightly east of the confluence of the Little Missouri

and Missouri Rivers atop a butte on the south shore of Lake Sakakawea, ND. At present, 16 surface depressions are visible on the buttetop, six which have been impacted or are in danger of being impacted as a result of wave action cutting away the base of the butte. The site has been referred to in the archeological literature since 1924. Testing was conducted there in 1950, 1977 and in 1982. The site was attributed to the Woodland tradition as a result of the 1977 testing (Good and Hauff 1977). Results of recent field work indicate the presence of two cultural components, the Knife River phase of the Disorganized variant, Coalescent tradition and the Besant phase, Woodland tradition affiliation (Kuehn et al. 1982).

Frison (1978:69) also gives an initial date of ca 1500 B.P. for the Late Prehistoric period in Wyoming. Common diagnostic artifacts include grooved mauls and bison metatarsal fleshers. Corner-notched points were reduced in size while side-notched and unnotched points became more common. Blade edges of projectile points were sometimes serrated (1978:62). He also notes that ceramic vessels characteristic of Middle Missouri shapes, motifs and technology have been documented along the Yellowstone River drainage and in northwestern South Dakota (1978:67) and attributes this ware to Crow or proto-Crow origins.

Mulloy's (1942) investigations at the Hagen site, located on a terrace overlooking the Yellowstone River, concluded that the site was probably a village with other perishable dwellings such as tipis used in addition to the earth lodge(s). The site is hypothesized to have been occupied by a transitional hunting-horticultural people, of Mandan-Hidatsa-Crow origin, possibly proto-Crow (1942:99-103).

Frison (1978:64) has posited that the occurrence of side and corner notched points together in sites with a variety of pottery types may reflect the presence of a number of cultural groups. He notes that the co-occurrence of side and basal notching in tool collections becomes quite common toward the end of the Late Prehistoric period and into proto-Historic times.

During the latter part of the Late Prehistoric period, ca. 1000 B.P., the Plains Village tradition became established on the Missouri Trench and replaced or included the continuing Plains Archaic and Plains Woodland traditions. According to Lovick and Ahler (1982:54, 55) the

Plains Village tradition (Lehmer 1971:27 - Plains Village pattern) major characteristic was the intensive horticulture which included the propagation of corn, beans, squash and sunflowers along the Missouri River floodplain. Bison hunting and small game and plant gathering augmented the horticultural stockpiles. A summary of the Knife-Heart region complex or taxonomic units for the Plains Village period and the correlation between them and the Lehmer and Bowers terminology are summarized by Lovick and Ahler (1982:54-78). Six prehistoric phases and historic phases are recognized within the Knife-Heart Region (Lovick and Ahler 1982): Clark's Creek phase (A.D. 1000-1200), Nailati phase (A.D. 1200-1400); Heart River phase (A.D. 1400-1710); Scattered Village phase (A.D. 1400-1700); unnamed phase (A.D. 1710-1750); and Knife River phase (A.D. 1750-1861).

The village dwellers utilized a subsistence pattern based on individual and communal bison hunting and horticulture including the raising of corn, beans and squash supplemented by fishing and gathering. The material culture and technology included a variety of stylized ceramic, bone and stone implements and utensils. The sedentary villages of the Mandan, Hidatsa, and Arikara and their predecessors served as trade centers between the nomadic bison hunters to the west and the Woodland cultures to the east.

Several sites in western North Dakota exhibit some evidence of Plain Village occupations or influence. The Mondrian Tree site (32MZ58), the Dune site (32MZ502), the Flat Top Butte site (32MZ422), and the Geary Bison Kill (32BI4) are not typical Plains Village sites in that they are not earthlodge villages along the Knife-Heart-Cannonball regions of the Missouri Trench (Cf. Lovick and Ahler 1982). The sites in western North Dakota represent a different aspect of the Plains Village lifeway. These sites contain evidence of periodic or seasonal occupations by Plains Villagers of the areas west and north of the earthlodge villages where the procurement of a variety of resources as well as hunting game were undertaken.

The Mondrian Tree site, 32MZ58, a stratified multicomponent site located a few miles east of the confluence of the Missouri and Yellowstone Rivers was recently excavated by the University of North Dakota (Roberson 1980; Toom 1981). The site contains several occupations

dating from the Middle Prehistoric period to the Historic period. The final report will be a major contribution to interpretation of the cultural prehistory of western North Dakota.

A short term campsite (Van Hoy 1981:4) in southeastern McKenzie County, 32MZ502, produced a KRF Late Prehistoric projectile point and a few small potsherds. No hearth features or associated evidence of extended use were found.

The Flat Top Butte site, 32MZ422, investigated by Simon and Borchert (1981c:28) is composed of a cluster of five concentration areas along a high grassland ridge. Concentration Two of the site produced side and corner notched projectile points and a few body sherds of plain pottery indicative of multiple occupations during the Late Prehistoric period.

Research by the University of North Dakota (Loendorf et al. 1982) has shown that both bison hunting and possible village horticultural strategies were practiced along the Little Missouri drainage in the Late Prehistoric period. A test performed at the Geary site 32BI4, produced a radiocarbon date of ca. A.D. 1300. The jump was used on at least two major occasions as evidenced by two levels in the bone bed. Two Late Prehistoric side notched points and an unnotched triangular point were recovered from the test units. A pottery sherd was found on the flat above the jump and may indicate a possible Plains Village affiliation. The Wilkins site, 32SL7 (Loendorf et al. 1982), located west and south of Bullion Butte is on a terrace above the Little Missouri River. Pottery from the site, which is thin and well made exhibiting incising and/or cord impressions, bears more similarity to that from the Mondrian Tree site than that from the Knife-Heart area (C. Johnson 1982:personal communication). The site may represent a Plains Village occupation and possibly contains remains of semi-permanent structures.

Bowers (1948) commented on the existence of several pottery bearing sites west of Amidon and south of Medora indicating that Plains Villages groups may have at least temporarily experimented with horticulture and village settlement along the Little Missouri valley. These sites may also represent groups in transition from horticulture to hunting in their movements west. Some Plains Village or transitional groups may have exploited the Little Missouri drainage on a seasonal basis. Simi-

lar sites are unknown on the upper portion of the Missouri drainage. Wedel (1961:160) noted that there is little evidence for village sites on the major Missouri River tributaries, however temporary camp sites suggest use of these rivers as travel routes for hunting, raiding, trading, etc.

The Late Prehistoric period in the Little Missouri drainage is marked by the influences of several traditions. Use of the area by groups participating in the Late Plains nomadic bison hunting tradition continued. During the early portion of the period there were influences from the Plains Woodland tradition (Besant) from the east. Later, the area was used on a seasonal basis by Plains Village groups from the Missouri Trench. Incipient horticulture may have been practiced on the Little Missouri drainage. Some groups probably inhabited the area temporarily in transition to a full nomadic hunting subsistence in the west.

As the villages on the Missouri served as active trade centers, there was probably considerable traffic across the Little Missouri drainage to and from the Yellowstone and Missouri Rivers, both in pre-horse and horse days. The Knife River flint quarries in Dunn County, ND were still in use during the Late Prehistoric period, although in proto-Historic times the influx of metal trade goods largely replaced the use of chipped stone tools.

Seasonality of use of the Little Missouri drainage remains a major question. It is likely that different resources were exploited in different seasons. Ethnographic data is weighted to fall and winter use of the drainage. Horticultural people were probably busy with planting and tending crops in the spring and summer seasons. It may be that nonhorticultural groups used the Little Missouri area in warm as well as cold season.

By the mid-1700's life in the study area was under rapid change following the introduction of the gun from the east and the horse from the south (Loendorf 1978:12-14). The Missouri villages prospered in the extensive trading which took place for guns, horses, bison meat, hides and horticultural products.

Bower's (1948:164-166) work has documented oral traditions concerning Plains Village use of the Little Missouri drainage. Seasonal use of

the badlands terrain by Missouri River groups very likely extends back into prehistoric times. In prehorse days, younger married people would travel up streams or over land and cross into the Little Missouri drainage for the purpose of hunting and curing meat. Eagles and mountain sheep were also sought. These trips were often made in the late summer and often the party would remain on the Little Missouri through the winter. Mandan groups may have wintered as far away as the headwaters of the Little Missouri which would place them in the northern Black Hills of northeastern Wyoming (1948:167-168).

During Historic times, Lowie (1963:4-5) places five Siouan linguistic family members within the study area: Mandan, Hidatsa, Crow, Dakota and Assiniboiné. In 1858, Denig (1961:xxvi-xxvii) reported Mandan, Hidatsa and Arikara villages near the confluences of the Knife and Little Missouri with the Missouri. The Assiniboiné, Crow and Arikara were along the lower Yellowstone. The Dakota were recent occupants of the upper Little Missouri drainage on a permanent basis despite the fact that the land was reserved for the Mandan, Hidatsa and Arikara by the Fort Laramie Treaty of 1851 (1961:93-94). Gregg (1983:54-55) states that the basic characteristics of both Mandan and Hidatsa groups developed from the Mississippian/Oneota cultures of northern Iowa and southern Minnesota (ca. A.D. 1000-1300). Many of the societies' characteristics developed on the northern Plains resulting from interaction among various groups. The historic Mandan culture emerged about A.D. 1500 as a result of influences of the trade and contact with pedestrian nomads and sedentary village dwellers. As early as A.D. 1550 (Gregg 1983:56) the Hidatsa may have arrived on the Missouri.

Historic Summary

The study area consists of 10 recreation areas located along the western portion of Lake Sakakawea in portions of Dunn, McKenzie, Mountrail and Williams Counties, North Dakota. The recreation areas are on both the north and south sides of Lake Sakakawea, the westernmost being Lewis and Clark State Park and the easternmost being Parshall Bay (Figure 1).

The Missouri River was the focal point for activity in the region until the latter part of the nineteenth century (Mattison 1955:5). "The early history of the...area primarily involves direct and indirect interaction with semisedentary horticultural-hunter-gatherer Plains Village tradition tribes and their fixed settlements along the Missouri River Trench." (Rylance and Rylance 1983:513). In addition, until completion of the railroad through the state in 1882 the primary transportation through and within the area was the river (Rylance and Rylance 1983:526). The river was used for transportation during some of the military campaigns and later became the means for commercial steamboat travel through the area (Rylance and Rylance 1983:524, 529). Although many of the areas of historic activity located near the river are presently inundated by Lake Sakakawea it is reasonable to expect that there was "intensive use of riverine and upland resources in the study area" (Hanson 1983:11) and that some of these remains would still be present.

Following is a brief discussion of the major topics of the history of the general study area. The purpose of the discussion is to provide a basic visualization of the major events and changes which undoubtedly have affected earlier and current social and economic trends in the area.

The first expedition into the upper Missouri region was the La Verendrye expedition which was for the purpose of establishing a fur trade and initiating exploration to the west (Rylance and Rylance 1983:513). He arrived at the Mandan villages on December 3, 1738. His sons did some exploration to the southwest four years later. As stated by Rylance and Rylance (1983:514) the primary influence the white man had on the Indians of the upper Missouri River during the last half of the eighteenth century was twofold: "First, the Indian acquired the horse. Second, Euro-American communicable diseases, including smallpox, swept through the Arikara, Mandan, and Hidatsa."

The British through the Northwest Co. and the Hudsons Bay Co. were the first to establish a commercial interchange with the Indians of the upper Missouri (Rylance and Rylance 1983:515). Although the Spanish tried to interfere with the British monopoly, it was maintained well into the 1800's. John Evans, part of the James MacKay expedition, did reach

the Mandan Villages in 1794, but the attempt did not realize many gains for the Spanish on the upper Missouri River.

The Lewis and Clark expedition, initiated by President Thomas Jefferson as a result of the Louisiana Purchase of 1803, reached the Mandan villages at the end of October, 1804. The purpose of the expedition was to explore the areas to the west of the Missouri River and to promote "America" to the Indians (Rylance and Rylance 1983:516). During the spring of 1805 the Lewis and Clark expedition set out north along the Missouri River. The Lewis and Clark expedition provided Americans with detailed descriptions of the Indians and environment which sparked interest in the area for the next half century (Rylance and Rylance 1983:517).

In 1807 Manuel Lisa, Missouri Fur Company, established a fort a few miles north of the Knife River. During the period 1807-1812 this trade effort was successful in upsetting the British trade monopoly on the Missouri River (Rylance and Rylance 1983:518).

In the mid 1820's, James Kipp, Columbia Fur Company, merged with the American Fur Company creating a monopoly in the fur trade which lasted until the 1860's (Mattison 1955:6). This monopoly did not go unchallenged. Many opposition posts such as Fort William and Fort Atkinson were established to compete with the American Fur Company (Mattison 1955:6). "By the late 1850's and early 1860's it was apparent that what had once been a thriving industry was now doomed" (Mattison 1955:6). By the late 1880's the fur trade was virtually at an end.

In addition to these men many individual men also traveled through the area to trap and trade west of the Missouri. These men include Francis Chardon (who built Fort James - later changed to Fort Berthold), James Clyman, Alexander Culbertson, Thomas Eddie and Charles Larpenteur (Rylance and Rylance 1983:519).

In the early nineteenth century with lessened numbers because of disease and attacks by the Sioux, the Mandan and Hidatsa moved up river with the Arikara to a village near Fort Clark. In 1845 the Hidatsa established Like-A-Fishhook village. The other two tribes joined them later and collectively these three groups are referred to as the Three Affiliated Tribes. In 1851 the Three Affiliated Tribes signed the Treaty of Fort Laramie which granted them the land west of the Missouri

between the Heart and Yellowstone Rivers. This treaty was later changed many times and greatly reduced in acreage. The white encroachment took place during the establishment of the Minnesota (1849) and Dakota (1861) Territories and the discovery of gold in Montana and Dakota territories in 1862. After this, steamboat travel up the Missouri increased and wagon trains began crossing the area (Rylance and Rylance 1983:520).

Numerous military campaigns against the Sioux took place in the latter half of the nineteenth century. The conflict originally began after the slaughter of whites in Minnesota by the Santee Dakota in 1862. "The army could not, and did not, separate peaceful Sioux from those Santee involved in the Minnesota massacre." (Rylance and Rylance 1983:521). The following battles in 1863 and 1864 were at Big Mound, Dead Buffalo Lake, Whitestone Hill and Killdeer Mountains. In all these cases the battles involved not only Indian warriors but women and children were present and attempting to flee. The Indians were on the losing side of all these conflicts. In addition to hunting down the Sioux the military expeditions were also to establish military forts. Fort Rice, 1864, was the first military fort in what is now North Dakota. By 1867 many Sioux moved to the reservation near Devils Lake (Fort Totten). Another major battle of the period took place in 1876 between Custer and the 7th Cavalry and the Sioux at the battle of the Little Big Horn. The Indians did not come out on the losing side of this battle (cf. Rylance and Rylance 1983:520-26). The Sioux were finally overcome by the American military in the early 1880's (Mattison 1955:8). The military forts became less important after this.

The completion of the railroad through the Dakota Territory in 1882 greatly increased white settlement in the area (Loendorf et al. 1976:60). In the early part of the twentieth century branch lines were built to accomodate transportation of goods from various small towns throughout the state.

The Great Dakota Boom of 1878 to 1890 saw a rapid increase in population in eastern North Dakota but had little effect in the western portion of the state (Rylance and Rylance 1983:530). North Dakota became a state in 1889.

Ranching is what brought the earliest settlers into western North Dakota (Rylance and Rylance 1983:532). Open range ranching failed due to overstocking the land, extremes in weather, a nationwide depression

and lawlessness and the influx of small rancher-farmers (Rylance and Rylance 1983:532). Ranching remained but with the modifications of raising feed to subsidize stock, keeping the cattle nearer to farm buildings and raising a hardier breed of cattle (Rylance and Rylance 1983:532).

Homesteading in western North Dakota did not occur in significant numbers until the end of the nineteenth century (Loendorf et al. 1976: 60). Factors that influenced settlement were "the presence of free homestead and inexpensive railroad lands," and "the presence of the railroad branch lines in the region that linked rural areas with larger eastern markets." (Perry 1984:7). Farming was difficult due to the abundance of very small farms in the semiarid environment but diversification enabled some of the farms to survive (Rylance and Rylance 1983: 533). Towns, generally located along the railroad, formed in response to the growing number of farms (Rylance and Rylance 1983:534). These small towns flourished in the early part of the twentieth century. Portions of the Fort Berthold Indian Reservation were some of the last areas to be opened to settlement. At this time the towns of Van Hook (1914) and Sanish (1915) were established (Mattison 1955:9). Rylance and Rylance (1983:535-6) describe the development of North Dakota history during the following period.

"Robinson (1959) has suggested six themes in the development of North Dakota history into the 1960's: remoteness, dependence, radicalism, economic disadvantage, too much mistake, and adjustment. There was a great distance between North Dakota and the political and economic centers of the nation and this remoteness fostered a dependence which had the effect of making North Dakota the equivalent of a colonial province of the chief centers. Both remoteness and dependence created exploitation, whether it came from the "grain trusts" in the Twin Cities or the big "banking houses" in the East. Radicalism became the means by which North Dakotans combated this colonial exploitation, most notably by the creation of the Nonpartisan League in 1915. The fourth theme, that of economic disadvantage, resulted from the semiarid climate in combination with predominance of agriculture in the state's economy and the resultant years of poor production. Immigrants emigrated and the area was depopulated. Once the first wave of original settlers left the semiarid grasslands, those who remained faced the existence of too many towns, too many churches, and overinvestment in general. The initial heavy cost per capita had been a mistake. The economic demands on

limited incomes resulted in gradual abandonment of capital laden facilities. The gradual adjustment or retrenchment from these economic conditions carried North Dakota history into the 1960's (Robinson 1959)."

For rural North Dakota the depression began in 1921. "The twenties were bad the thirties were worse." (Rylance and Rylance 1983:537). The influencing factors were low grain prices and drought conditions. Attempts were made by William Langer, then governor of North Dakota, and the legislature to alleviate the crisis by a grain embargo, a moratorium on foreclosures, and a beef embargo. These efforts did little to counter the economic severity of the depression. The New Deal brought federal dollars into North Dakota but it wasn't until the beginning of World War II that farmers had a good market and price for their crops (Rylance and Rylance 1983:538).

Both lignite and oil and natural gas reserves in the state have added to the economic base. The first successful oil well in North Dakota was drilled near Tioga in 1951 (Robinson 1966:459). Oil discoveries at this time were deep and expensive and there were no refineries in the area making the oil less competitive due to the high cost of transportation. This was somewhat remedied by the construction of refineries and pipelines in the state but by 1958 the amount of drilling decreased due to high costs and a surplus of oil on the market. In 1972-73 the oil boom began again due to the discovery of a rich oil field in McKenzie County and the Arab oil embargo of 1973 (Rylance and Rylance 1983:539-40).

In western North Dakota there is an immense area of surface minable lignite coal. The lignite which had been noted and used by the earliest explorers was first commercially mined in the late nineteenth century, primarily by individuals, although there were some large operations also. Both underground and strip mining techniques were used. Again a primary obstacle was the high cost of transportation. The industry grew from 1900-1920 but declined during 1920-1940 due to the discovery of oil and natural gas and the depression. But it was during this time that the steam shovel for strip mining was developed which made the industry safer and more productive and profitable (Rylance and Rylance 1983:542). Although coal mining in the state is increasing, problems with coal

development currently include concern over "mineral and surface rights, too many coal electrification and gasification plants, adequate reclamation and cultural resources." (Rylance and Rylance 1983:542).

Although talk of using the Missouri River for irrigation took place as early as 1905, plans for the large earthen dams and subsequent diversion of the river did not begin until 1935. "The plan incorporated all the dreams: irrigation, flood control, hydroelectric power and navigation." (Rylance and Rylance 1983:541). In addition the project could provide recreational areas. In 1947 work on the Garrison Dam began. The development of recreational areas and tourism, although relatively new, is an additional area of economic diversification (Perry 1984: 12-13).

Two historic townsites are located adjacent to survey areas. The first is the old townsite of Sanish (meaning "Real People" in Arikara) (Mattison 1955:52). The town of Sanish is located in the Fort Berthold Indian Reservation. The area in which Sanish was located was reserved as coal land until an Act of Congress of August 3, 1914 which reclassified this area as agricultural land (Mattison 1955:52). In 1915 this land was opened to settlement. "By the end of 1916, Sanish had a population of 394." (Mattison 1955:52). The town supported two newspapers and four livery barns and operated a fleet of three boats and two barges. By 1950 (population 507) the people living in Sanish were predominately Scandinavian (Mattison 1955:52). The entire town site of Sanish was inundated by Lake Sakakawea, although during the present survey the water level was low and several foundations could be discerned in the shallow water near the edge. The second townsite is that of Van Hook. The town "was named by Fred Van Hook who piloted a group of surveyors when the Fort Berthold Indian Reservation was opened to settlement." (Mattison 1955:46). As Van Hook's trade would be greatly affected by Lake Sakakawea an Act of Congress on October 13, 1949 authorized funds to Van Hook for resettlement. "A site, designated as "New Town" until a more appropriate name is selected, has been laid out in SW $\frac{1}{4}$ Sec. 17, T 152 N, R 93 W by the U.S. Army Corps of Engineers for the inhabitants of Van Hook and Sanish." (Mattison 1955:46). The original Van Hook townsite began when a few merchants and settlers squatted on the land early in 1914. A post office was established in the same year

and the railroad constructed a branch line to the town. The town grew rapidly and generally maintained a population between 3-400. The people were predominantly German and Scandinavian.

Other sites of interest in the general study area include the following. The site of Fort Maneury in the SE $\frac{1}{4}$ of Section 34, or the SW $\frac{1}{4}$ of Section 35, T150N, R92W. Little information is available regarding this trading post and archaeological surveys in the area have been unable to locate any remains. Although Rufus Stevenson reports a post which was a stage stop on the Fort Stevenson-Fort Buford trail at the place indicated as the site of Fort Maneury. Stevensons father, Adlai, was a member of the Crow-Flies-High's band. (Mattison 1955:47).

The Verendrye National Monument area which is located on Crow-Flies-High Butte is located within the New Town survey area. The Verendrye Monument was established in June of 1917 and comprised 253.04 acres. As mentioned in the discussion of the New Town survey area the Verendrye Monument was declassified and removed and a monument in honor of Crow-Flies-High currently is on the butte. Crow-Flies-High was "the leader of the seceding group of Gros Ventres... who had a village several miles to the northwest of the town of Sanish." (Mattison 1955:51).

The Verendrye Bridge located in SW $\frac{1}{4}$ of Section 13 and NW $\frac{1}{4}$ of Section 14, T152N, R93W was the third bridge across the Missouri in North Dakota. Prior to inundation by Lake Sakakwea the bridge was salvaged (Mattison 1955:53).

Crow-Flies-High Indian village was located in the NE $\frac{1}{4}$ of Section 34, T153N, R93W. Mattison (1955:53) describes the events surrounding the conception and subsequent abandonment of the village.

"Crow-Flies-High was the leader of a seceding band of Gros Ventres known as the "Huskies." At one time he had aspirations to become chief of the Gros Ventres at Fort Berthold. When another, in about 1869, was elevated to the chieftainship, he, together with a band of his own people and a number of Mandans, withdrew from Like-A-Fishhook Village. For many years they lived a nomadic existence in the vicinity of Fort Buford. They subsisted by supplying fuel to Missouri River steamboats, by deer hunting and selling skins. As the supply of game diminished and steamboat travel on the Missouri decreased, the condition of these Indians became worse. For several years they lived in Crow-Flies-High village which is close to but outside the Fort Buford Reservation. They were finally escorted by a military detachment to the agency in

1894 and were given lands in the vicinity of Shell Creek. Crow-Flies-High died during the winter of 1899-1900. All that remains of the old village are evidences of some of the old cellars."

The name Tobacco Garden probably came about as a result of the reeds which grew there. Both the Sioux and Assiniboine name for these particular reeds and tobacco were the same. A woodyard was located at Tobacco Garden in 1869. Near Tobacco Garden Creek there was a small battle between Sioux and whites due to repeated violations of treaties by the whites and corrupt handling of annuity goods by government agencies (Mattison 1955:55-56).

In addition to the historic areas mentioned above there are other historic sites such as post office locations, Lewis and Clark campsites, woodyards, trading posts and Indian campsites in the general vicinity of the study area. As previously indicated the Missouri River was the focal point for activity in the region until the latter part of the 19th century (Mattison 1955:5). Areas adjacent to the river are rich in historic period sites and contain data significant to an understanding of major historic trends in North Dakota.

RESEARCH GOALS

The purpose of the Phase I Inventory at selected recreation areas in the west portion of Lake Sakakawea, as outlined in the scope-of-work, was to identify all cultural resources within defined boundaries and to assess the resources in terms of National Register eligibility, potential impacts, and future work requirements. These recommendations are made in light of present and anticipated recreational utilization of the ten designated areas and with consideration given to the dynamic erosional history of the Garrison Reservoir. In addition to these basic goals, the UNDAR inventory effort has several additional research and management objectives.

The initial step in the inventory process was to perform a records search and literature review. The goal of this phase of the project was to identify any and all relevant Historic and Prehistoric sites within the survey tracts prior to the initiation of the fieldwork phase. The record search and literature review were performed by Lawrence L. Loendorf and Lori Orser Weston. The state files, site lead files, and architectural site files maintained by the North Dakota State Historic Preservation Office (NDSHPO) were the major source of the literature search. The UND Anthropology/Archaeology Departmental Library was also utilized as was literature available elsewhere. The results of this literature search have been summarized under EVALUATION AND DISCUSSION OF PREVIOUS WORK and the results are discussed for each individual survey tract in the survey results sections which follow.

Once identified through the literature search and fieldwork, sites were evaluated in terms of their temporal and formal dimension. Temporal assessment is an attempt to place the site within a context of time, through the use of established cultural chronologies and named cultural groups. Within the constraints of surface data, the temporal dimension is largely dependent upon the presence of diagnostic artifacts (e.g. projectile points and ceramics). Site type and function are the primary criteria for the study of formal dimension. Again, while severely limited by surface data only, formal site characteristics were interpreted through the study of observed and collected artifacts, surface visible features, and site setting.

The basic management objectives of the survey effort centered around assessment of site integrity and potential impacts. Integrity evaluations were formed by considering a number of factors including present and past land use, recreational development, and erosion. The extent of site damage was recorded as was the potential for future impact. The topographic setting of the study areas are subject to cutbank erosion initiated by Lake Sakakawea wave action. As a result, erosion has been observed to be the major cause of adverse impacts in the project areas. The extent of erosional damage was carefully recorded and recommendations concerning future safeguard measures are presented for all affected sites in the individual study area sections.

Field Methods

The project surveyed 10 separate tracts throughout the western portion of Garrison Reservoir. These survey tracts varied in types of ground cover as well as topography. To examine these varying areas survey techniques were tailored to maximize coverage of exposed areas. As noted in previous University of North Dakota surveys (Haberman and Schneider 1975; Leaf 1976), sites are continually being exposed and eroded by fluctuating water levels and associated wave action. Accordingly, the beachlines were examined thoroughly at all survey tracts. Normal procedure entailed a surveyor walking the waterline with another examining adjacent cutbanks and buried soil horizons. When the beach area (waterline to cutbank) was very wide the central area was examined by an additional walkover. Most of the survey tracts had relatively narrow beach exposures which did not necessitate this third transect.

After the completion of the beachline survey, the surveyors intensively inventoried the upland and terrace areas. The surveyors examined roads, trails, blowouts and other erosional features whenever possible. Intervals of 5-10 m were maintained between surveyors as the terrain permitted. Erosional features were examined individually. Two-track trails were examined with one surveyor examining each track. Site 32WI50 was examined through the use of shovel probes to determine the amount of erosion at the location.

When a site was located the area was examined by walking closer intervals to determine site boundaries, locate surface features and note diagnostic materials and lithic raw materials. Site limits were defined on the extent of surface visible cultural material and topographic variables. The sites were plotted on USGS 7.5' topographic maps. In addition to the usual mainland areas two small islands at McKenzie Bay were reached by boat. Two islands also exist at Charging Eagle Bay during normal pool levels. With the low water levels in the fall of 1981 land bridges were exposed and a boat approach was not necessary.

In addition to the sites, a number of isolated finds were recorded. An isolate has been arbitrarily defined as having less than six items per hectare not in primary context. Several historic sites were recorded during the project. Separate historic site forms provided by the North Dakota State Historic Preservation Office were used for recording these sites. Detailed sketch maps showing the dimensions of dugouts and foundations and the locations of other features were drawn in the field. Modern recreational dwellings, i.e., cabins and trailers, were not recorded.

Laboratory Methods

The material observed and/or collected during the survey was noted on the site forms in categories of lithics, ceramics, bone and historic material. Chipped stone debris was identified as to source material and stage of manufacture. Formal tools have been identified through comparison to diagnostic forms generally recognized throughout the region. Projectile point measurements were taken, where possible, including length, width of base, width of the body, neck width, notch width, and height of basal edge. Ceramics were separated into rim and body sherds. Rim sherds were analyzed according to form and decoration. Body sherds were examined for surface treatment and temper. Faunal materials were noted at several sites, but in all cases the items were too small and fragmented to be identified.

Upon completion of the analysis a temporal framework was assigned to the occupations at as many sites as possible. Appropriate site and isolate forms were completed and forwarded to the North Dakota State

Historic Preservation Office in Bismarck. Official site numbers were assigned.

The recovery and analysis of artifacts was not the intent of this project. As stated in the scope of work for the project the contractor was instructed to "...pick up and retain only those artifacts necessary to the contractor to determine the cultural component or components in a particular site". Further, in the discussion of what is to be included in the report the scope of work reads that the report should contain a "review of the artifacts collected". Such a tabulation of artifacts or a review of collected materials has been included with the various site descriptions. Artifact drawings of diagnostic tools are included with the site forms. Future researchers who want to learn about the time periods a site was occupied will have the drawings for their review.

A more detailed description of the laboratory analyses and definition of terms follows. Results of the analysis are discussed in each site description under the survey results sections and also in the synthesis of the project presented in the CONCLUSIONS.

Tools are divided into patterned and unpatterned tools. The working definition of a tool used in this study is those artifacts in which the artisan modified the shape of the original raw material in such a way that stylistic variation as well as functional and technological variation is expressed in the morphological variation of the tool. Patterned tools included projectile points, bifaces, and end scrapers. Projectile points are patterned bifacially worked items with or without hafting elements. They may include ones which are unnotched, unstemmed; side notched; corner notched; stemmed; basal notched; or fluted. Bifaces are patterned relatively thinly worked, compared to cores, and exhibit continuous or discontinuous bifacial flaking around the tool perimeter. These may include knives - patterned cutting tools, that may or may not display hafting elements, and drills - in which the entire tool is bifacially worked. End scrapers are patterned tools where the working edge has been unifacially modified, and a relatively steep angle is exhibited. The dorsal side may or may not have been worked, and may or may not have been hafted.

Unpatterned tools are artifacts in which tool morphology is largely an expression of the original morphology of the raw material piece from

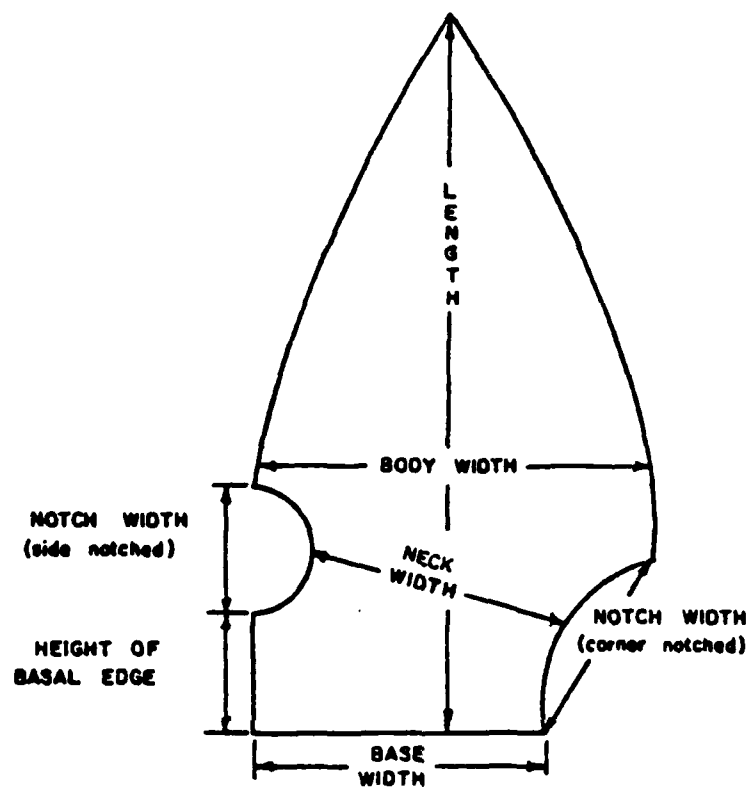
which the tool was made. Flake bifaces are unpatterned bifacially worked tools; flake unifaces are unpatterned unifacially worked tools; graters are unpatterned tools with one or more unifacial bits; spokeshaves are unpatterned tools with one or more unifacial notches; a composite tool is unpatterned and combines any two or more of the above; and utilized flakes are flakes which have been modified through use with no apparent intentional retouch.

Nonfinished tools are blanks or lithic items at an initial stage of the reduction process. A rough form from which a number of finished tools can be made describes this category. Preforms are lithic items in a medial stage of reduction, and will be further reduced into a specific tool.

Cores are pieces of raw material from which flakes have been removed. The flakes will be utilized to produce tools while generally the core will be discarded after it has been exhausted. Bipolar cores are a product of split pebble or cobble technology in which hammer and anvil stones are both used. The impact area is marked by a highly crushed edge or point, crushing is possible at both ends. Nonbipolar cores exhibit randomly flaked edges. Tested material is a chunk of raw material with one or more flakes removed, it is not a formal core. Modified chunks may be tools of indeterminate use, edges may have been unifacially or bifacially modified.

Choppers and cleavers are unpatterned relatively large minimally modified tools which may have been unifacially or bifacially worked. Other nonflaked stone tools which may have been formed by pecking or grinding are grooved mauls, manos, metates, abraders and hammerstones. The latter may be a large cobble or a pebble of hard material (quartzitic or granitic) used to remove flakes in stone tool manufacture.

Diagnostic projectile points were measured according to the system defined by Forbis (1960). Because this format is widely accepted in the Northwestern Plains, the point measurements from this study can be compared to those of other regional collections. Figure 3 shows the measurements that were taken. Detailed measurements compiled from this system include: length, body width, neck width, notch width (NW), and average height of the basal edge (HBE), (Figure 3). Forbis (1960:87,90) originally used these indices to further differentiate between side notched point clusters within a deeply stratified site. These measure-



$$\text{BASE-BODY INDEX} = \frac{\text{BODY WIDTH}}{\text{BASE WIDTH}} \times 100$$

$$\text{HBE-NW INDEX} = \frac{\text{HEIGHT OF BASAL EDGE}}{\text{NOTCH WIDTH}} \times 100$$

Figure 3. Measurements for projectile points (Forbis 1960).

ments are used as the basis for calculating the base-body index, height of basal edge-notch width index (HBE-NW), estimated length-width ratio, and notch shape. The base-body and HBE-NW indices offer the advantage of minimizing individual variation in measurement and making the results of individual studies comparable (1960:87,90). The base-body index is computed by dividing the average body width by the average base width and multiplying by 100. The HBE-NW index is derived by dividing this average height of the basal edge (HBE) by the average notch width (NW) and multiplying by 100. The material types, patination, and side or corner notched types were also noted by counts and percentages. The relationship of base width to body width was considered. If the base and body widths were less than 1 mm different, they were considered equal. Otherwise they were noted as wide (base wider than body) or narrow (body wider than base) and numbers and percentages for each group figured for the cluster from each tract. The base-body index computations may have three outcomes: 100 the base is wider than the body; 100 the body is wider than the base; = 100 the base and body are equal widths. Forbis (1960:90) found that the height of the basal edge-notch width index (HBE-NW) was one of the most reliable chronological indicators. This is figured for each cluster by dividing the average HBE by the average NW and taking the answer multiplied by 100. A resulting figure 100 indicates that the HBE is greater than NW. A number 100 indicates that the NW is greater than the HBE. At the Old Women's Buffalo Jump the upper member had a HBE-NW index of 147 while the lower member had a HBE-NW index of 43.

The relationship between the HBE and NW was further examined. Three possibilities exist for each point: later times are indicated by HBE = NW, intermediate times by HBE = NW, and earlier times by HBE = NW.

Another factor used for differentiating projectile points is notch shape (Forbis 1960:93). Notch depth is determined by subtracting the neck width from the greatest body width and dividing by two. The notch shape is termed acute if the resulting notch depth is greater than the notch width, or shallow if the width is greater than the depth.

The basal shape index is figured by assigning a value of +1.00 to points with convex bases, 0.00 to points with straight bases, and -1.00 to points with concave bases. The values for points in each sample are

totalled and divided by the number of points in that sample. The sample number should be noted when using the averages.

The length-width ratio for each projectile point was obtained by dividing the length by the body width. The ratio for each cluster was obtained by dividing the average length by the average body width.

A descriptive approach to raw material type was chosen in an attempt to avoid inaccuracies possibly implied by general labels like chert, jasper, or agate. Grain structure, degree of translucency, homogeneity of inclusions, and color were chosen as differentiating properties. Material types were determined based on combinations of these properties. Certain raw materials were identified by relatively widely recognized names, for example KRF, porcellanite, and petrified wood. Major lithic categories are described below. These were based on visual attributes and limited understanding of formation processes.

Chalcedony: This label is used to describe homogenous cryptocrystalline silicates that range from clear through white to faintly tan. Other chalcedonies are described separately according to their properties. Chalcedonies have a fibrous microstructure. Except when covered with patination, they are translucent. Patination is smooth and even, mottled, or rough textured. It may reveal a wood grain pattern.

Cryptocrystalline Silicate: This is a structurally oriented description of chert and chalcedony groups. Cryptocrystalline silicate materials may be translucent or opaque, with or without inclusions; mottled, banded, patterned, or homogeneous; and come in a wide range of colors. Fractures are conchoidal.

Antelope Quarry Chert: This material ranges from relatively homogeneous opaque cryptocrystalline silicate to fine grained silicified material with fossiliferous and grainy inclusions. Shared attributes include an opaque, dull, red-to-brown color and marginally workable properties. Thomas East with the University of Pittsburgh has analyzed it for a report being prepared for publication. He has identified the fossils as *metasequoia* and snail. The material has also been called metaquartzite and silicified peat (Thomas East, personal communication April 12, 1983). Dr. Michael Beckes (personal communication 1982) has identified a potential quarry for the material, Antelope Quarry, in westcentral McKenzie County, ND.

Knife River Flint: The category of KRF includes translucent to semi-translucent light brown to dark brown cryptocrystalline silicates, both homogeneous and mottled. Dendritic inclusions from off-white to dark brown are responsible for the mottling. These inclusions may be in layers, lenses, or sparsely scattered. Being a cryptocrystalline silicate, it fractures conchoidally, except where affected by bedding planes.

Patination ranges from white to tan and varies in pattern. It can be smooth textured and evenly colored, mottled, wavy, or rough textured. Patination affects translucency.

When burnt, KRF apparently tends to turn dull grey or dark brown and develop a "china glaze" cracked surface. It becomes more opaque. Quarries are located along the Knife River and Spring Creek in what is now Dunn and Mercer counties in westcentral North Dakota.

Limestone Chert: Materials in this category range from porous fossil-containing limestone with workable properties to smooth opaque cryptocrystalline silicates. The predominant colors in the collection are off-white and yellow. Both are mottled with black or brown speckled rings and other shapes. Some flakes show a gradation from limestone to chert. Some flakes, where broken, show an interior that is darker and more fine grained.

Moss Agate: Also known as Yellowstone agate, this category describes clear to translucent grey chalcedony with dendritic black inclusions. These appear as mossy shapes or black speckles. This material patinates similarly to plain chalcedony except that dendritic speckles near the flake surface interrupt the patination. The primary source is the Yellowstone River valley.

Obsidian: This is volcanic glass, translucent to varying degrees. The obsidian in this collection is black. Most of it is homogeneous, although some pieces were grey and black banded and others contained inclusions.

Petrified Wood: This includes agatized, opalized, and silicified wood. It describes wood when the organic materials have been replaced by silicates. The structure is cryptocrystalline and maintains a wood grain appearance to varying degrees. Color and translucency vary.

Porcellanite: This is shale baked in association with coal burns. It is opaque. Most often it is a dull even grey. Other colors are black, yellow, brick red, maroon, and brown. Porcellanite tends to have an interface type of cortex. Vitreous porcellanite has a glassy lustre caused by hotter temperatures during the formation process (Rogers and Lee 1923:83).

Quartzite: This is a metamorphosed silicate; grain size ranges from large to very fine grained. There is a wide range of colors. In this collection, cortex, when present, tends to be a water, or glacially, worn surface.

Silicified Sediment: This category describes fine grained sedimentary material. It is opaque and may be subtly banded. Colors vary.

Tongue River Silicified Sediment: This sedimentary material is very fine grained and has a slight glitter. The only color in this collection is a mottled tan/grey.

Vitrophyre: Also known as ignimbrite, this volcanic glass is porphyritic which means it contains larger crystals in a matrix that is glassy.

Patination was observed on some chalcedony, petrified wood and KRF in the collection. Schmalz (1960:46-48) defines it as a chemical solution of quartz crystallites from the material itself, especially occurring in an alkaline environment in the presence of soil carbonates. Warm temperatures accelerate the rate of patination. Ahler (1977:96) identified exposure to the elements, particularly sun light, as the critical variable. The pattern of differential patination, complete patination on one face and none on the other, appears to support the theory that exposure is at least partially responsible. Evidently patination reveals more about deposition in the area than age of a tool or a collection.

LEWIS AND CLARK STATE PARK AREA

Introduction

Lewis and Clark State Park comprises a linear portion of the northern Lake Sakakawea shoreline (Figure 4). Two prominent creeks, Gamache and Short, flow into Lake Sakakawea in the study area. The inundated mouth of Gamache Creek forms a broad bay which is now used as a boat ramp and sheltered marina. Eroded Missouri River breaks are present in the park area, exposing the Tertiary members of the Fort Union group. Flat, low-lying terraces formed since the Wisconsin glaciation, are present along most of the shoreline. The terraces exhibit alluvial gravel lenses and deposits of the wind-blown Oahe formation. Many of the terraces have been eroded by wave action resulting in exposed vertical cutbanks. At several areas, these eroding banks have been stabilized by riprap. This is especially true around the mouth of Gamache Creek. The terraces in general have very well developed soil deposits, well over two m thick in places. Therefore, the potential for deeply buried cultural deposits throughout most of the park area is considered good. Past land use was heavily concentrated around Missouri River travel and utilization, the fur trade and military activity. The area was the site of a 19th century trading post. Present land use is recreation oriented, with extensive campground, picnic area, and marina development.

Previous Investigations

Eight previously reported sites are on file for the Lewis and Clark State Park tract. Three are present in Section 3, T153N, R98W; 32WI5 was a tipi ring site located on July 16, 1947 by Kivett as part of the Smithsonian Institution River Basin Survey (SIRB); 32WI10 was another tipi ring site located on July 17, 1947 by Kivett as part of the same project; 32WI15 is a third tipi ring site (U.S. Bureau of American Ethnology Bulletin No. 185).

Section 2, T153N, R98W had two previously reported sites. An occupational site (32WI6) is referenced in Appraisal of the Archeolo-

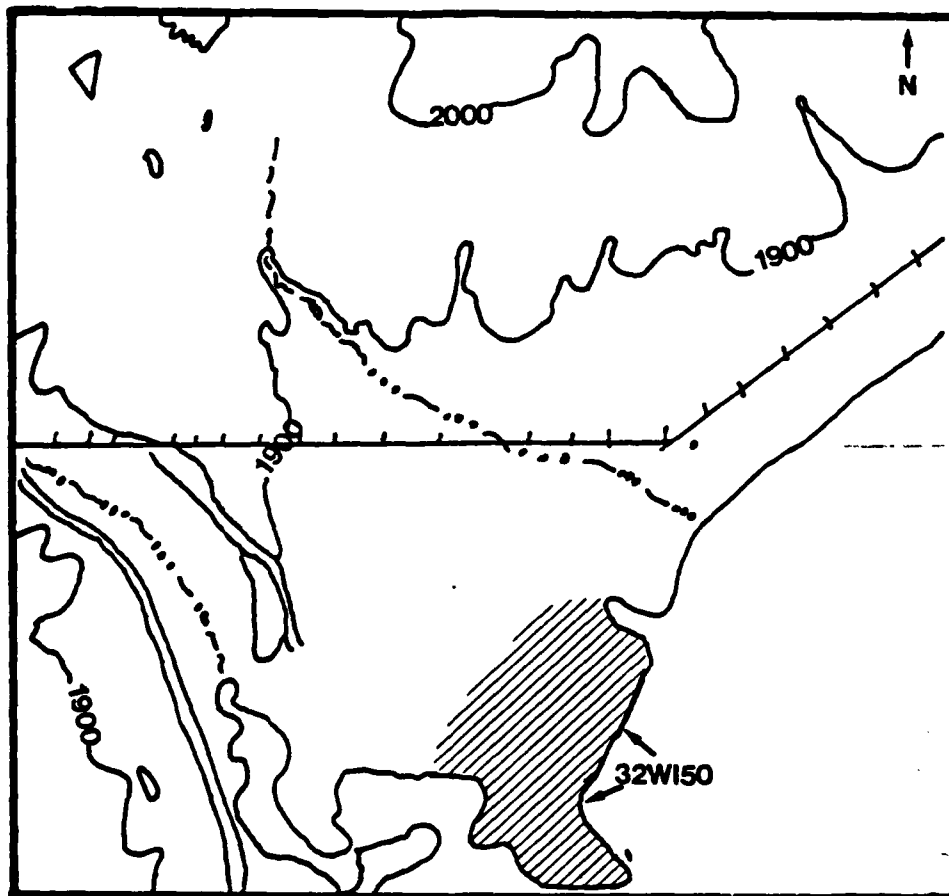
gical and Paleo Resources of Garrison 1953. The second (32WI42) was also present in Section 11, T153N, R98W along with 32WI7. The former was a lithic scatter in association with a possible tipi ring. The latter was described as an occupational area with worked flint and pottery fragments.

The folders from 32WI6 and 32WI7 in the NDSHPO manuscript collection contain a two page excerpt from Kivett and Wedel (1948:24 and map), as no site forms are available from the original recording of the sites.

Cultural Resources

32WI50 L&C-1

Site Description. The site was originally recorded as a lithic and historic debris scatter located along the beach at the southwestern edge of the Lewis and Clark campground. A large number of ceramic, lithic, and historic debris was observed in the low, normally inundated beach area southeast of a low terrace. In addition to 32WI50, a second site, 32WI60, was recorded on the low terrace to the northeast. During a revisit to the site on August 15, 1983, it was observed that both sites appear part of a larger site encompassing the southeastern portion of the entire terrace (Figure 5). Flaking debris and fire cracked rock was observed eroding out of the terrace at the base of the upper humic "A" horizon (ca. 20 cm below the ground surface). The exposed material was present from the site 32WI60 area southwest around the margin of the terrace, into the area designated as 32WI50. In addition, numerous small flakes were observed north of the beachline from 32WI50, in a small trail immediately south of the southernmost paved road in the campground. This indicates that a site is present across the entire terrace south of the camping areas and parking lots. For these reasons, site designation for 32WI60 has been eliminated and the site is now combined with 32WI50. The portion of the site observed to have historic debris, which was south of the present shoreline now under water, may reflect the location of the Adams Brothers Trading Post, reported to exist in the area (occupied during the late 1800's) (Henry Duray, personal communication 1981; 1984). The new designation for site 32WI50 now includes the (inundated) trading post, as well as the intact pre-



Map Key:
 Contour line=~~~~~
 Improved road=——+——
 Seasonal water=.....
 Site area= ///
 Survey area= - - - - -

Figure 5. Map of 32WI50.

historic site situated on the terrace. The total area of the site is roughly 140,000 sq. m. Elevation is 561 m AMSL.

The Adams Brothers Trading Post was a small enterprise established and operated by local ranching brothers. It was in operation only a few (two-three) years during the first few years of the railroad. The Adams Brothers traded goods and commodities with the Indians for hides. This information was related to the UNDAR crew by Henry Duray who was Park Manager at Lewis and Clark State Park in 1981. His information had been obtained from two residents of the area who had recalled the existence of the site. One was Albert Garamache (now deceased) who had remembered the past and could also remember when as a young boy the Indians were gathered and camped along the river (in the study area) prior to being moved onto the reservation. The second informant was Charlie French (in his 80's at the time of writing) who is presently a resident of Epping, ND. Mr. French also recalled the Adams family and the trading post location. The Adams Brothers trading post is written up in a section of the Williams County history book.

Cultural Material. Artifacts collected during the 1981 inventory include 11 pieces of grit-tempered cordmarked and plain pottery, three unnotched triangular projectile points (one KRF, one porcellanite), one porcellanite graver, three KRF side notched projectile points, five KRF corner notched projectile points, one KRF drill, one KRF drill base, two KRF unifacially worked flakes, four KRF tertiary flakes, one quartzite projectile point tip, seven bifacially worked flakes (KRF and porcellanite), 13 scrapers (11 KRF, two porcellanite), three chunks of raw material, one historic pipe bowl fragment, two glass bottle bottoms, and two fragments of historic plate ware. During the resurvey of 1983, no cultural material was observed on the beach due to high water level. Approximately 15 KRF flakes, three bone fragments and two pieces of fire cracked rock were observed, but not collected, from the exposed terrace cutbank between the area originally designated as 32WI50 and the area originally designated as 32WI60. In addition, approximately 25 very small KRF tertiary flakes were observed and not collected from a worn trail north of the original 32WI50 area.

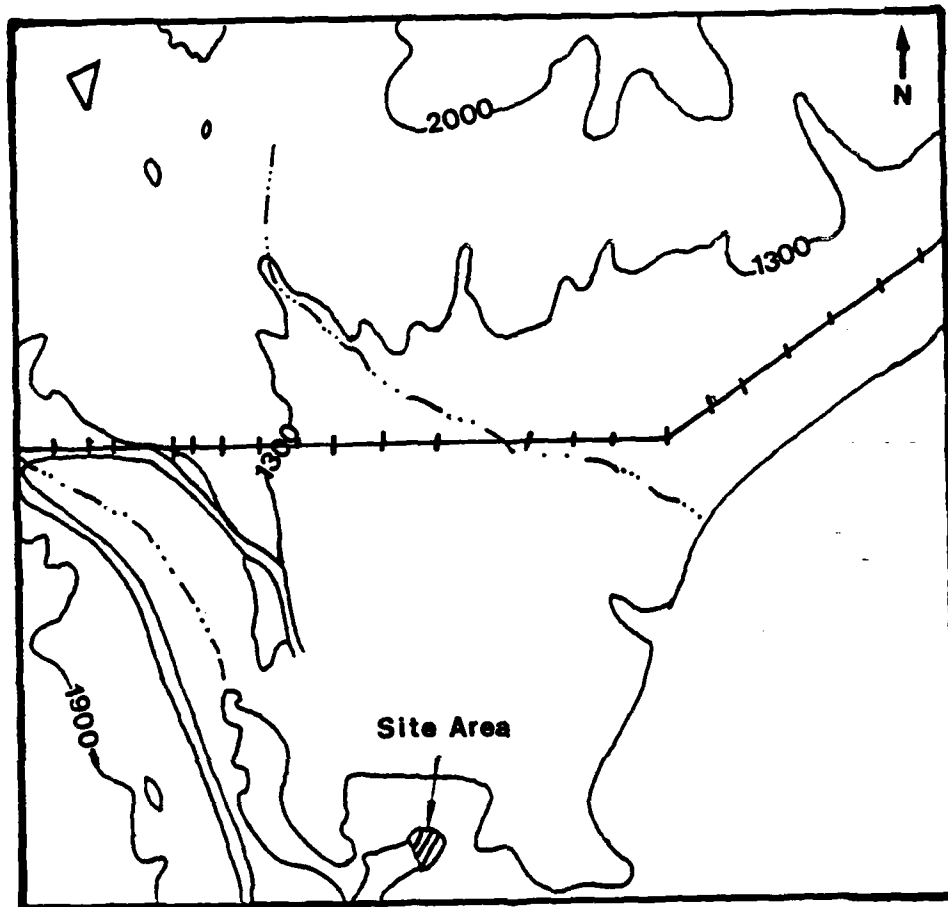
Discussion. Site 32WI50, as amended, represents a multiple component site from the Middle Prehistoric to the Historic period. The

site may contain predominantly inundated remains of a 19th century trading post, as well as an occupation/campsite of the Plains Village tradition. Recent investigations indicate that the site is much larger than originally thought, encompassing an area of approximately 140,000 square meters. Much of the site appears buried from 0-20 cm beneath the terrace surface. While cutbank erosion, rototilling, and campground maintenance activities have impacted the site, much of it appears undisturbed with intact cultural material.

Recommendations. It is recommended that the site be evaluated for eligibility to the National Register of Historic Places as soon as possible. The testing should systematically cover the flat, intact terrace portion of the campground area (largely south of the pavement and trailer spaces) and should include the now inundated beach area which produced the large amount of material recovered in 1981. This should be accomplished when the reservoir pool level is sufficiently low to permit testing. In the interim, it is recommended that no ground disturbing activities be permitted in the site area. The potential impact to the site from continuing cutbank erosion is a factor of concern, as the erosion is continuing at the present time. If the recommended NR evaluation testing is not conducted within a reasonably short period (one year), it is further recommended that the exposed cutbank be stabilized with riprap. It must be stressed, however, that such stabilization should be conducted without disturbance to the intact cultural deposits.

32WI51 L&C-2

At the present time a large rock jetty extends from the marina area east well into the bay present at the mouth of Gamache Creek. This rock jetty appears to have been constructed on top of a breakwater peninsula. The site topographic plot indicates that this breakwater peninsula is now covered by the large rock jetty (Figure 6). Cultural material at the site indicated multiple components, ranging from the Plains Archaic to the Late Prehistoric. The site appeared to be extremely disturbed by shoreline stabilization projects and water erosion. The site area is 5,574 sq. m. Elevation of the site is 567 m AMSL.



Map Key:
 Contour line= ~~~~~
 Improved road= ===
 Seasonal water= - - - - -
 Site area= ▨
 Survey area= + + + + +

Figure 6. Map of 32WI51.

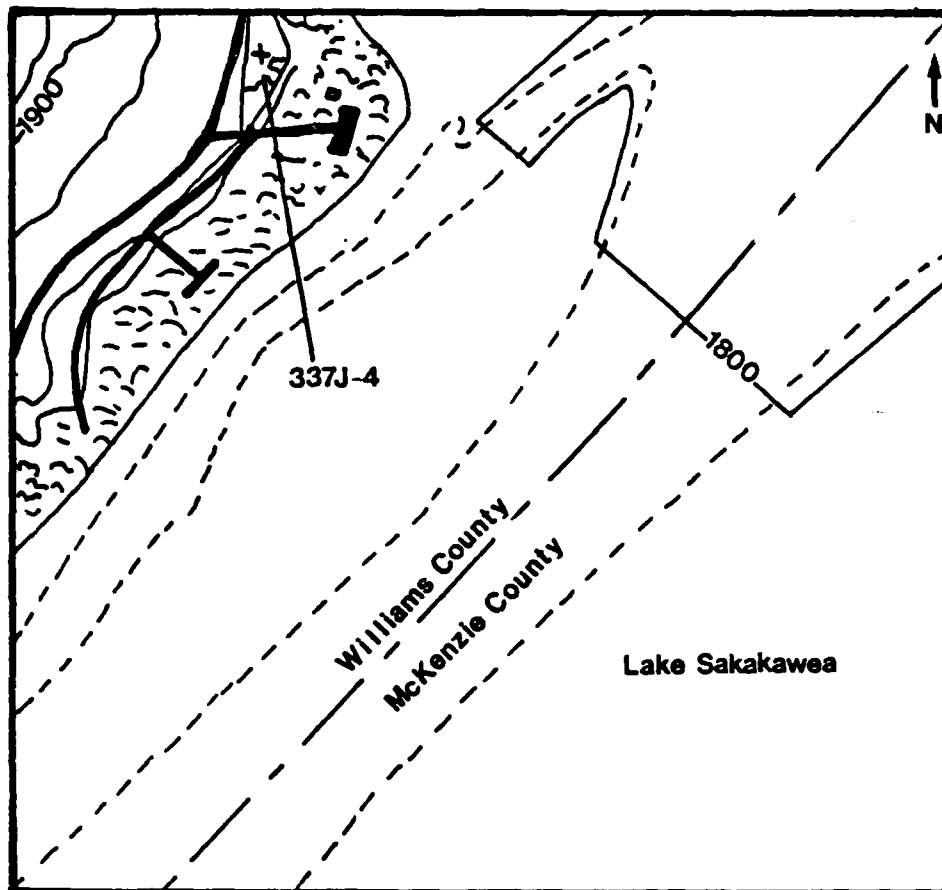
Cultural Materials. Artifacts collected during the survey included four end scrapers (one jasper, one brown chalcedoney, two KRF), one KRF biface fragment, one worked KRF flake, four unworked KRF flakes, and one porcellanite flake.

The examination of the lithic collection at Lewis and Clark State Park aided in identification of the temporal affiliations of the site deposits. Mr. Henry Duray, Park Superintendent in 1981, indicated that the items are safely stored at the park where they are displayed for interested persons and used in educational programs. Mr. Duray indicated that the collection has accumulated over the years by visitors finding items and turning them in to park personnel, or by park personnel confiscating the items from active collectors at the park. The availability of the collection aided the description of the cultural resources, particularly this site.

Recommendations. The site was originally evaluated as lacking in integrity due to serious adverse effects. At the present time the site appears completely destroyed by the construction of a large rock jetty. For these reasons no further archaeological work is recommended, as the site does not appear to be eligible for nomination to the National Register of Historic Places.

32WI61 L&C-4

Site Description. The site was originally recorded as a lithic scatter located on top of a small knoll southeast of the marina (Figure 7). Cultural material was observed in areas reseeded and previously tilled. No cultural material was observed in undisturbed areas. The site was relocated on August 15, 1983. At that time two red porcellanite flakes were observed in a sodfree area along the east edge of the knoll, immediately above the terrace cutbank, which has been extensively covered with riprap. The terrace cutbank could not be investigated due to the riprap, nor could the beach area due to high water levels. The site area appears partially disturbed by landscaping and maintenance activities, but it also appears to retain intact soils. Future impact to the site by bank erosion has been prevented by the placement of the riprap. The site area is 100 square m. The elevation of the site is 605 m AMSL.



Map Key:
 Seasonal inundated=~~~~~
 Contour line=~~~~~
 Improved road=———
 Park facilities=□
 Old River channel=———
 Site=✕

Figure 7. Map of 32WI61.

Cultural Materials. Artifacts recovered during the 1981 inventory include eight flakes, representing KRF, chert, chalcedony and obsidian. Artifacts observed during the 1983 investigation consist of two flakes of red porcellanite.

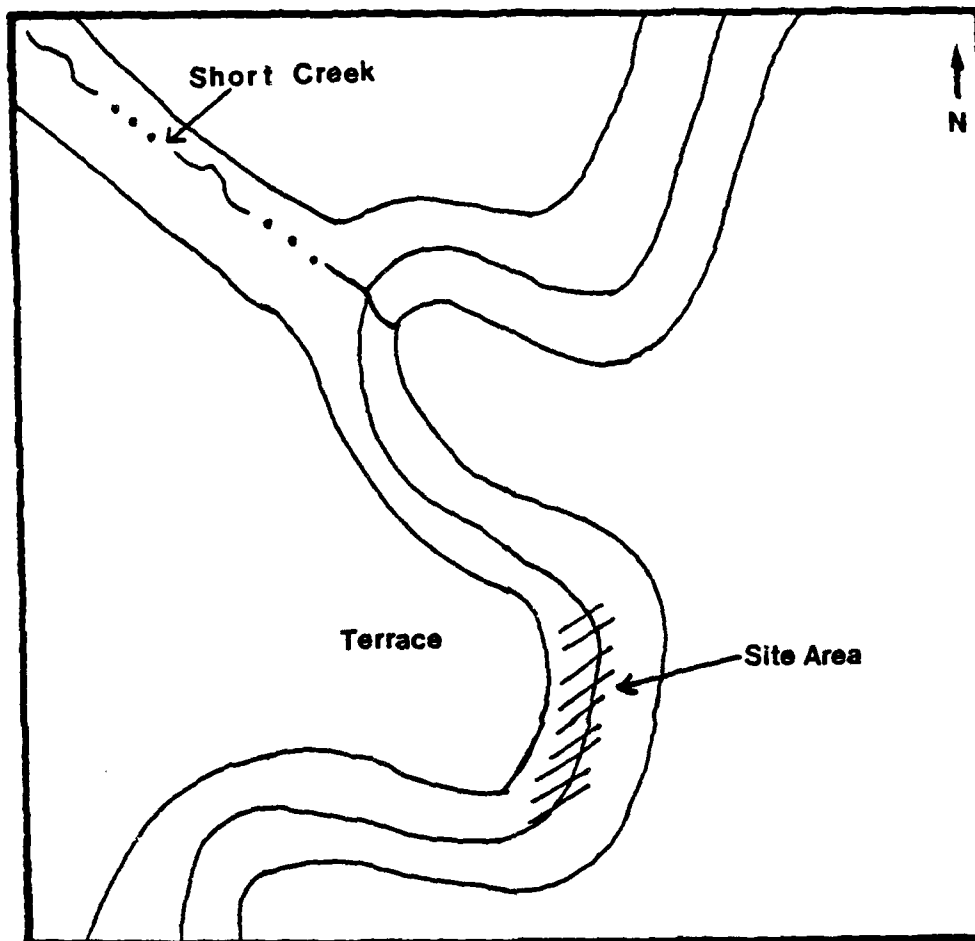
Discussion. Site 32WI61 is situated on a small knoll southeast of the present marina, near a weather station and picnic table. The small knoll appears to retain intact soils, and therefore may contain an undisturbed cultural horizon. While the site has been impacted by landscaping and maintenance activities, there is reason to suspect that it still retains integrity.

Recommendation. A program of National Register testing is recommended. The testing should be conducted in the undisturbed portions of the knoll area. In the interim, it is also recommended that no further ground disturbing activities be permitted in the site area.

32WI72 L&C-5

Site Description. Originally recorded during the 1981 inventory as isolate i337J-1, this area has now been given site designation (Figure 8). According to the policy established during other current UNDA research projects (including the Northern Border Pipeline Project), an isolate consists of less than six artifacts, not located in primary context. Any artifacts observed in primary context, and having intact soils and cultural deposits are designated as sites. 32WI72 certainly deserves site designation as one end scraper, one quartzite spall, one piece of porcellanite shatter, and a burnt object were recovered from a buried soil lens in an exposed cutbank. The material was found above the Lake Sakakawea shoreline, a short distance from the mouth of Short Creek. Other than erosional impacts from wave action, the area is relatively undisturbed. The area contains moderate to good soil deposition and may contain additional buried cultural materials. The newly completed site form for 32WI72 is included in Appendix A. The site area is 10 sq. m. Elevation is 570 m AMSL.

Cultural Materials. As previously described, the original inventory resulted in the recovery of one agate end scraper, one quartzite spall, one piece of porcellanite shatter, and one piece of unidentified burnt material.



Map Key:
 Short creek=
 Site area= [hatched box]
 Contour line= ~~~~~

Figure 8. Map of 32WI72.

Discussion. Newly designated site 32WI72 is situated on a flat terrace above Lake Sakakawea, near the mouth of Short Creek. The site contains intact soils and is fairly undisturbed, except for an unknown amount of erosion along the cutbank.

Recommendations. It is recommended that a program of subsurface testing be conducted in the site area, for the purpose of evaluating the site for potential eligibility to the National Register of Historic Places. It is also recommended that no ground disturbing activities occur in the site area prior to the testing. Similarly, if testing is not conducted within a reasonable time period (ca. one year), stabilization of the eroding cutbank is also recommended.

Isolates

1. A single projectile point, identified as Agate Basin, Paleo-Indian. The specimen was recovered along the beach at the extreme southwestern edge of the mouth of Gamache Creek. The beach area was underwater at the time of the 1983 reinvestigation, therefore, additional information could not be recovered. The projectile point appears to have been out of context with the original location unknown. It is possible that the specimen eroded out of the low terrace immediately north of the shoreline. This possibility can not be substantiated without testing.

Summary

A total of four cultural resource sites were identified for the Lewis and Clark State Park survey tract. An additional six locations (Table 2) were compiled from the literature search. Of these six, three prehistoric sites (tipi rings) could not be relocated in the field and are most likely beyond the survey tract boundaries. The remaining three prehistoric sites (two exhibited worked flint and pottery and one exhibited a lithic scatter and tipi ring) are definitely located beyond the survey boundaries.

None of the six sites identified from the literature search are within the present project boundaries, consequently it is recommended that no further consideration be given to these sites as part of the

Table 2. Summary of previously recorded cultural resources of the Lewis and Clark State Park survey tract.

Site Number	Site Type/Temporal Affiliation	Comments
32WI15*	tipi ring site prehistoric	could not be relocated may be beyond survey and/or impacted
32WI10*	tipi ring site prehistoric	could not be relocated may be beyond survey and/or impacted
32WI15*	tipi ring site prehistoric	could not be relocated may be beyond survey and/or impacted
32WI16**	occupational site prehistoric worked flint and pottery	directly north of east half of 32WI42 95% of legal description area inundated
32WI17**	occupational site prehistoric worked flint and pottery	overlaps southern part of 32WI42 75% of legal description area inundated beyond survey boundaries
32WI42**	lithic scatter possible tipi ring prehistoric	32WI6 and 32WI7 may be part of this site, close proximity of locations beyond survey boundaries

* most likely beyond present survey boundaries.
 ** definitely beyond present survey boundaries.

cultural resource management program of the Lewis and Clark State Park area.

The four sites identified during the cultural resource inventory (Table 3) of the Lewis and Clark State Park tract do need to be further considered as part of the cultural resource management program for that area. All sites are prehistoric with the exception of 32WI50 which also contains an historic component. The sites were considered in terms of potential to yield important information on prehistoric and historic lifeways, integrity of the deposits, adverse impacts which have already occurred to the site deposits, ongoing or future impacts, and scheduling of any appropriate future investigations. It is then possible to prioritize the sites in terms of cultural resource management goals. The results are given below and are relative to the known cultural resources of the Lewis and Clark survey tract.

1) 32WI50 is the most complex site at this survey tract, containing both prehistoric and historic components. The prehistoric component is situated on a terrace which is undergoing active erosion from the reservoir. A testing program to identify cultural and temporal affiliation, activity areas, and datable features is recommended in the near future because of the active erosion at this location. The results of such a testing program may have two outcomes: the site may be found to be largely intact and to contain significant remains; or the site may be found to be largely eroded away and/or lacking in significant remains. If the former outcome is the case then plans may be made to protect the site from further erosion or to excavate the site to recover the data. If the latter outcome is the case then no further cultural resource investigations would be warranted for the prehistoric component of 32WI50 and this part of the site may be deleted from the priority list.

The historic component of 32WI50 may be dealt with separately from the prehistoric component. The physical remains of the Adams Brothers Trading Post are partially intact and are visible at low pool level, otherwise the location is inundated. It is recommended that, on a year and season when the pool level of Lake Sakakawea is low, this location should be mapped and photographs taken of any structural remains and associated features. The site function and history has been documented

Table 3. Summary of newly recorded cultural resources for the Lewis and Clark State Park survey tract.

Site Number	Site Type/Temporal Affiliation	Comments	Recommendations
32WI50	Prehistoric occupation area lithics and ceramic debris	located on terrace, intact deposits, some shallow surface distur- bance	erosion along cutbank, stabilization if testing is not feasible in near future
	Historic Adams Brothers Trading Post	remains visible at low pool level, inundated	Historic Research, photography at low pool level and mapping if possible
32WI51	Prehistoric occupation area Plains Archaic to Late Prehistoric	extremely disturbed by shoreline stabili- zation (jetty) and water erosion	destroyed by impacts, likely not NR eligible, no future work
32WI61	Prehistoric lithic scatter	some intact soils partially disturbed by landscaping and maintenance	presently stabilized from erosion, testing in future, no further ground disturbance
32WI72	Prehistoric lithic scatter	intact, relatively undisturbed soils	stabilize cutbank, NR testing

in the Williams County History book, what is lacking is adequate documentation of the physical location and features. This may be accomplished under favorable low pool level conditions.

2) 32WI72 is a prehistoric lithic scatter which exhibits relatively intact, undisturbed soils. As such the potential of this site to yield important information concerning prehistoric use of the study area is likely high. Undisturbed soils are a primary factor in differentiating the prehistoric cultural and environmental sequence in multicomponent sites. Site 32WI7 is presently being eroded by Lake Sakakawea. Testing is recommended to determine the number and type of components in the site deposits and whether the deposits contain the quality and quantity of cultural materials to interpret prehistoric use of the site. Should the site deposits be shown to be significant by the testing results, it may then be decided whether to protect the site from erosion or excavate the deposits. Should testing results indicate that the site deposits are not significant, no further investigation nor protection of the site deposits would be warranted.

3) 32WI61 is a prehistoric lithic scatter which has some intact soils. Part of the site has been disturbed by landscaping and area maintenance activities. The site area is presently stabilized from erosion. It is recommended that at the present time the site should be protected from further surface disturbance. Should erosional forces and/or recreational area construction pose an adverse effect to the site at some future point, it should then be tested to determine the significance of the deposits and further decisions for additional investigations made at that time.

4) 32WI51 is a prehistoric occupation area which has been severely impacted by erosion and by shoreline stabilization. A rock jetty had been constructed over the site. Since the site has been disturbed and lost integrity due to the impacts it is doubtful any NR eligible deposits remain. No further work is recommended for this site.

TOBACCO GARDEN BAY AREA

Introduction

Tobacco Garden Bay recreation area is situated primarily along a bay formed by the inundation of Tobacco Garden Creek (Figure 9). The bay, located along the south side of Lake Sakakawea, is approximately 3600 m long, and is ca. 750 m wide at the mouth and 20 m wide at the southern end, where the normal narrow channel of Tobacco Garden Creek resumes. The project area includes portions of the Lake Sakakawea shoreline adjacent to the mouth of the bay along the east and west. The topography of the study area includes flat, inundated valley bottom, high terraces above Lake Sakakawea (formerly Missouri River), low terraces above Tobacco Garden Creek (especially along the Tobacco Garden Creek valley). Soils are a combination of alluvial (Holocene) deposits, and aeolian wind blown sediments of the Oahe Formation. Erosion in the adjacent uplands has exposed the Tertiary sediments of the Fort Union Group. Large eroding cutbanks are present along the north and east ends of the study area. These cutbanks offer excellent exposures of the Oahe Formation, especially along the northeast portion. Several paleosols are evident in the cutbanks, reflecting cool and moist periods during the Holocene (Clayton et al. 1976). Previous land use concentrated along Missouri River utilization and agriculture (homesteads in project area). Present land use consists of recreation cabins and trailers located in project area and nearby agriculture.

Previous Investigations

Two previously recorded sites were on record for the Tobacco Garden Bay tract. An historic homestead, 32MZ144, was recorded by the U.S. Forest Service in 1979. The site is located beyond the boundaries of present study tract and so was not relocated. Consequently, no evaluation is made as part of this project. A prehistoric campsite, 32MZ406 was recorded by Johnson in 1976. The original legal location is incorrect. The site was relocated on November 9, 1981 as part of the Tobacco Garden Bay area and the legal location subsequently corrected.

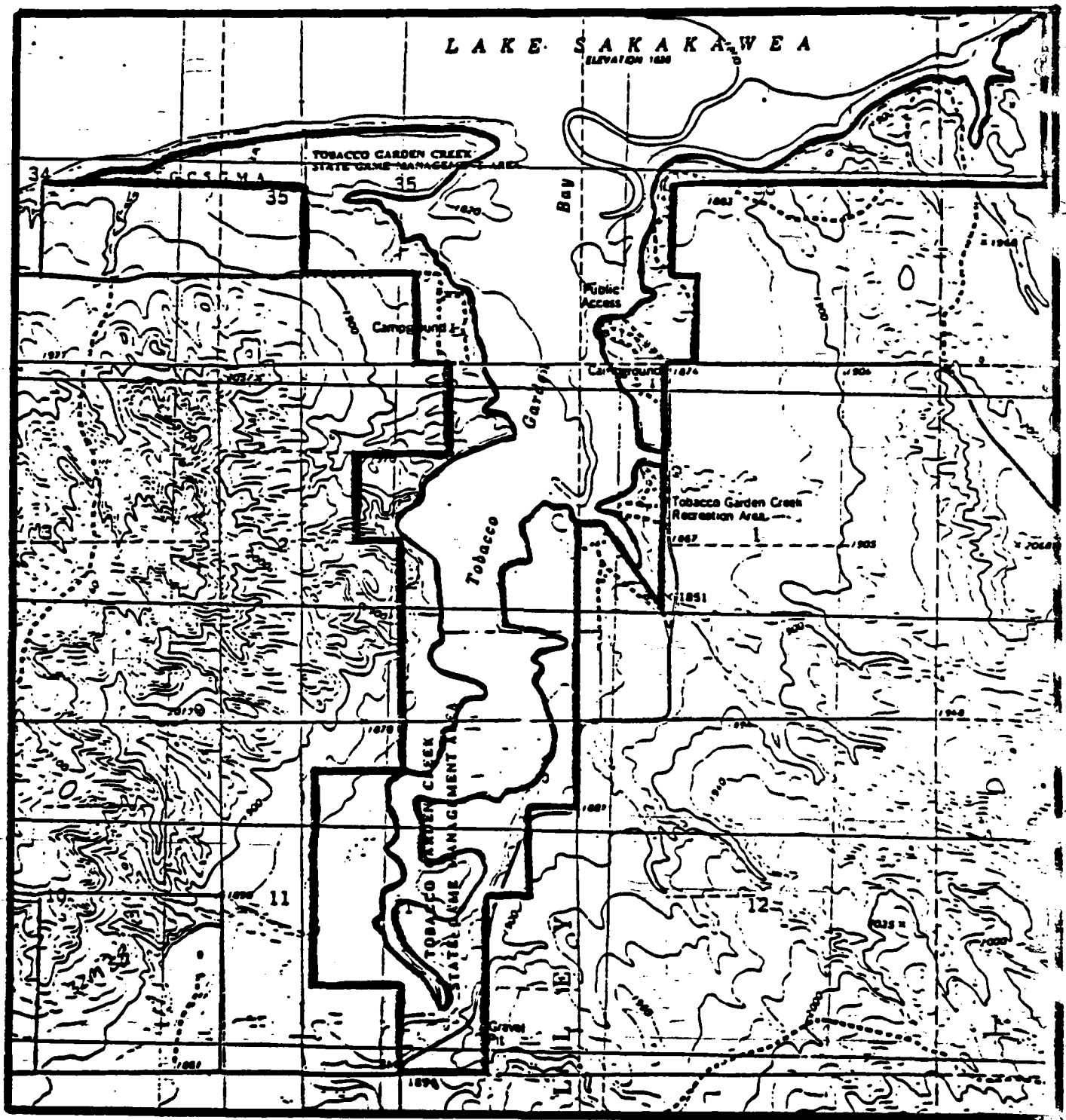


Figure 9. Tobacco Garden Bay area.

The only cultural materials located were along the beaches. The severe erosion of the site location is the major factor in its lack of integrity. An intact area remains north of the beach, this area retains its integrity.

Cultural Resources

32MZ598 TGB-1

Site Description. The site is an historic homestead located on a gradual northslope overlooking a small inlet of the lake (Figure 10). All structures have been removed from the site. Visible features at the site include a house depression, a cobblestone foundation of an out-building and a smaller circular depression (probably a well). A scattering of historic debris surrounds the features. This site was relocated on August 10, 1983, and was observed in the same condition as reported above. The site covers 2,500 sq m. Elevation is 1860 ft AMSL.

Cultural Material. Crockery, metal, and other historic debris were observed in the site area, but not collected. All standing structures have been removed from the site. The cobblestone foundation is approximately 4 x 4 m in size. The house depression is approximately 4 x 5.5 m in size and is slightly rectangular in shape with a small alcove visible along the west side. No building materials were observed in association with the depression.

Discussion. A deed search conducted at the McKenzie County Courthouse indicates that the site was homesteaded by Samuel A. Landers and his wife, Bertha M. Landers. The homestead was claimed on June 22, 1910 under provisions of the Act of Congress of May 20, 1862 "To secure Homesteads to actual Settlers on the Public Domain" and supplemental acts (Book of Deeds Vol. 14, p. 593, McKenzie County Courthouse, Watford City, ND). On October 24, 1921, Samuel A. Landers sold Lots 1, 2, and 3, E $\frac{1}{2}$ NW $\frac{1}{4}$, W $\frac{1}{2}$ NE $\frac{1}{4}$, NE $\frac{1}{4}$ SW $\frac{1}{4}$, Section 31, T154N, R96W to his wife, Bertha M. Landers for a sum of \$100. The land was free of encumbrances except for a mortgage of \$1000 (Book of Deeds, Vol. 24, p 512, McKenzie County Courthouse, Watford City, ND). Mr. Landers signed with his mark, an X.

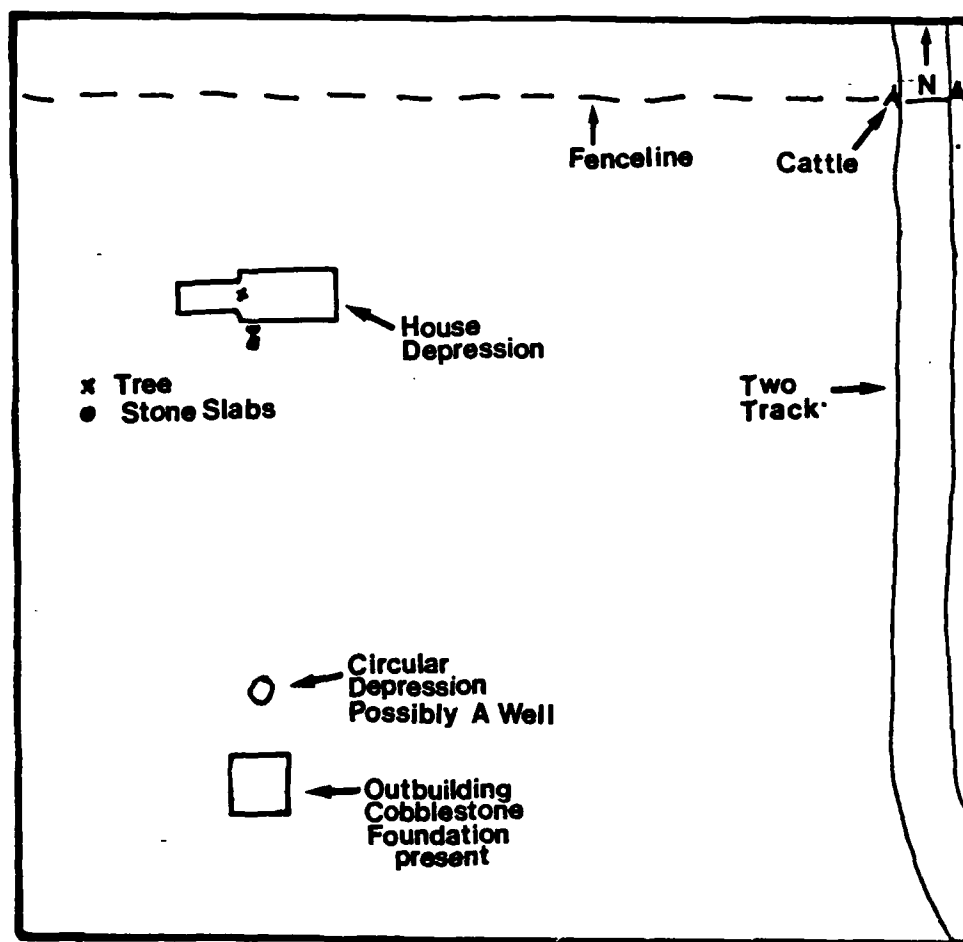


Figure 10. Map of 32MZ598.

Map Key:
 Fenceline= - - - -
 Cattle= A
 Two-track= //
 House depression= 
 Tree= x
 Stone slabs= •
 Circular depression= 
 Outbuilding cobblestone= 

On December 7, 1935 a Sheriff's Deed was filed against Bertha Landers and her husband by Sheriff George C. Fox to the Provident Life Insurance Company. George C. Fox was Sheriff of McKenzie County and the State of North Dakota. The Provident Life Insurance Company was in Bismarck, ND. According to county records (Book of Deeds 92, p 622, and Book 39, p 428, McKenzie County Courthouse, Watford City, ND) the land of S.A. Landers, as an individual and as the administrator of the estate of Bertha M. Landers, deceased, was sold at Public Auction to the Provident Life Insurance Company for \$989.12.

On May 12, 1938, the Provident Insurance Company of Bismarck (F.L. Conklin, V.P. and H.B. Beach, Secretary) sold these lands to the U.S. government for a sum of \$1,043 (Book of Deeds 42, p. 182, McKenzie County Courthouse Watford City, ND). There have been no further transactions of record for the portion of the section containing the homestead remains since 1955, nor between 1938 and 1955.

A census record search was performed at the North Dakota Heritage Center for the Samuel and Bertha Landers family by Sally Montgomery Dockter. The records for McKenzie County for the years of 1905, 1915, and 1925 were checked. The family is not mentioned in the earliest year, but is in the latter two. The Landers had a total of ten children according to the 1915 Census: May, Ethel (0-5 years), John, Sofhrani, Ester, Vern, Verl, and Deihl (5-20 years), and Frank (20-60 years), Clarence was born between 1915 and 1925. In the 1925 Census Samuel was 53 and Bertha was 50. They had four children living at home with them at that time. Clarence was 11, Ethel was 13, May was 16, and Frank was 36.

Recommendation. The site has been adequately recorded and documented. Under existing criteria, the site does not appear to be eligible for nomination to the National Register of Historic Places. No standing structures remain, and little information is available concerning original construction techniques. The site does not appear unusual for the time period represented (1910-1934). In addition the site was not the home of any individual or event considered significant from a local or regional perspective. Therefore, no further work is recommended for the site.

32MZ599 TGB-2

Site Description. Site 32MZ599 was originally recorded as an historic homestead consisting of one standing log barn, three cement slabs, and a barbed wire fence (Figure 11). In addition, a second historic site, 32MZ600 was recorded approximately 90 m northwest of 32MZ599. This site consists of a cement basement and partial foundation, a wooden outbuilding, a well, and historic debris. After the sites were relocated on August 10, 1983 it was apparent that both recorded sites are part of one larger farmstead. Therefore, site number 32MZ600 was eliminated and both are now included as 32MZ599. The site area is 3,600 sq. m. Elevation of the site is 1850 ft AMSL.

Cultural Materials. Observed but not collected cultural materials consist of: barbed wire, scrap metal, the chassis of a Model-T ford truck, the remains of a McCormick reaper, wagon parts, and round headed nails. Very dense vegetation cover obscured most of the ground surface.

Discussion. As amended, site 32MZ599 consists of the remains of a farm homesteaded by Martin Iverson. According to a deed search conducted at the McKenzie County Courthouse, Iverson received the land on June 5, 1911 and owned the property until November 30, 1949, when the land was taken for the construction and establishment of the Garrison Dam and Reservoir. The partially standing log structure may represent the original homestead site, while the cement basement and foundation represent a house built later, after the wide spread use of concrete. The log structure measures 5.5 m north-south by 10 m east-west. The south wall is approximately 1.8 m in height and contains a single doorway in the middle, lined with lumber. The west wall is approximately 1.4 m in height and contains two small windows lined with 2 x 4's. The north wall is approximately .9 m in height and the east half is collapsed. The east wall is approximately 2 m in height and contains three small windows lined with 2 x 4's. The roof of the structure is completely missing. Numerous round headed nails were observed imbedded in the logs, which were saw cut into a square notched pattern at the corners. The poured cement basement measures 5 m north-south by 4 m east-west, and contains a small alcove or entrance way along the north side. The house itself has been dismantled and removed from the premises. Historic debris, including barbed wire and lumber are scat-

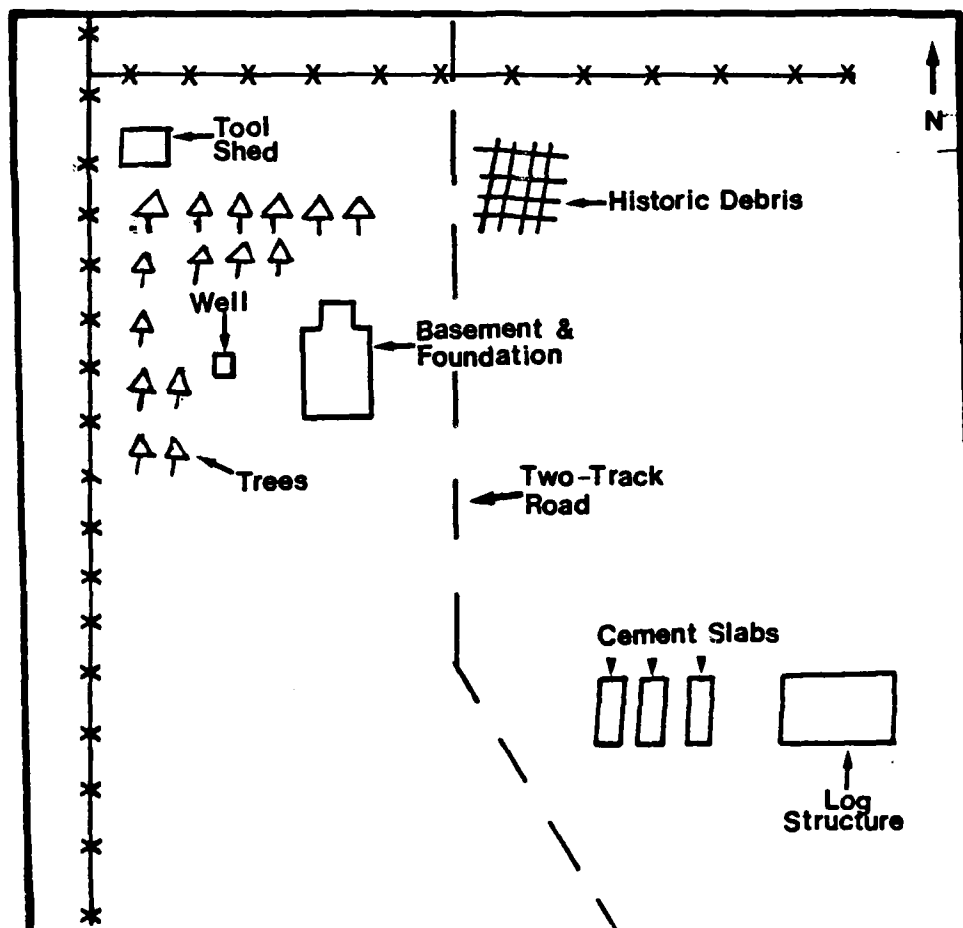


Figure 11. Map of 32MZ599.

Map Key:

- Tool shed= 
- Well= 
- Trees= 
- Historic debris= 
- Basement & foundation= 
- Two-track road= 
- Cement slabs= 
- Log structure= 

tered in the bottom of the basement. A collapsed wooden clapboard building, possible toolshed, is located ca. 40 m northwest of the basement. The structure is missing two walls, and was apparently moved off of a 3 x 4 m wooden foundation located 3 m to the northwest.

Recommendation. The Iverson farm, 32MZ599, has been adequately recorded and documented. While the walls of a log barn remain partially standing, the architecture of the structure is not unique or unusual for the time period. The remainder of the farm is largely lacking in integrity, with the remaining buildings torn down or otherwise removed from their original location. The site was not occupied by individuals considered important from the aspect of regional or local history. Therefore, it is recommended that the site is not eligible for nomination to the National Register of Historic Places. No further work is recommended for the site.

32MZ601 TGB-4

Site Description. The site consists of a lithic scatter located on a high terrace at the extreme northeast corner of Tobacco Garden Bay (Figure 12). Cultural material was observed in an unimproved dirt road next to a plowed field during the original inventory in 1981, and during a resurvey of the area conducted on August 10, 1983. No material was observed outside of the road bed, however, very extensive cutbanks were investigated along the west edge of the site. The site is bordered by cutbanks along the north and west, while a plowed field borders along the east, and a downhill slope of the terrace borders the site on the south. The site contains good soil deposition, as evidenced by examination of the cutbanks. The site area is 9,144 sq. m. Elevation of the site is 579 m AMSL.

Cultural Materials. Artifacts collected during the 1981 inventory consist of two unifacially worked flakes of KRF and porcellanite. In addition, 11 flakes of KRF and chalcedony, and one corner notched projectile point were also recovered. During the 1983 reinvestigation approximately 12 flakes of KRF, chalcedony, porcellanite and petrified wood were observed but not collected. Also observed were several pieces of fire cracked rock and one fragmented mammal bone.

AD-A153 265

INTENSIVE CULTURAL RESOURCE INVENTORY OF SELECTED
RECREATION AREAS IN THE (U) NORTH DAKOTA UNIV GRAND
FORKS DEPT OF ANTHROPOLOGY AND ARCHAEOLOGY

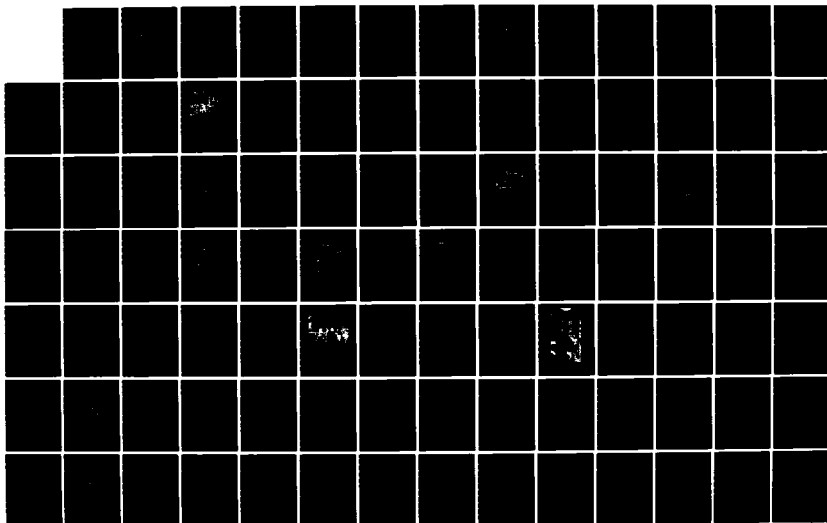
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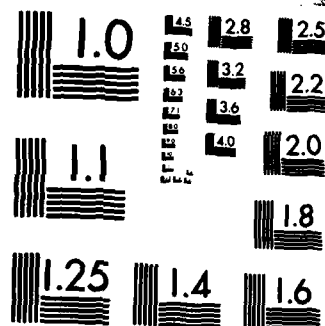
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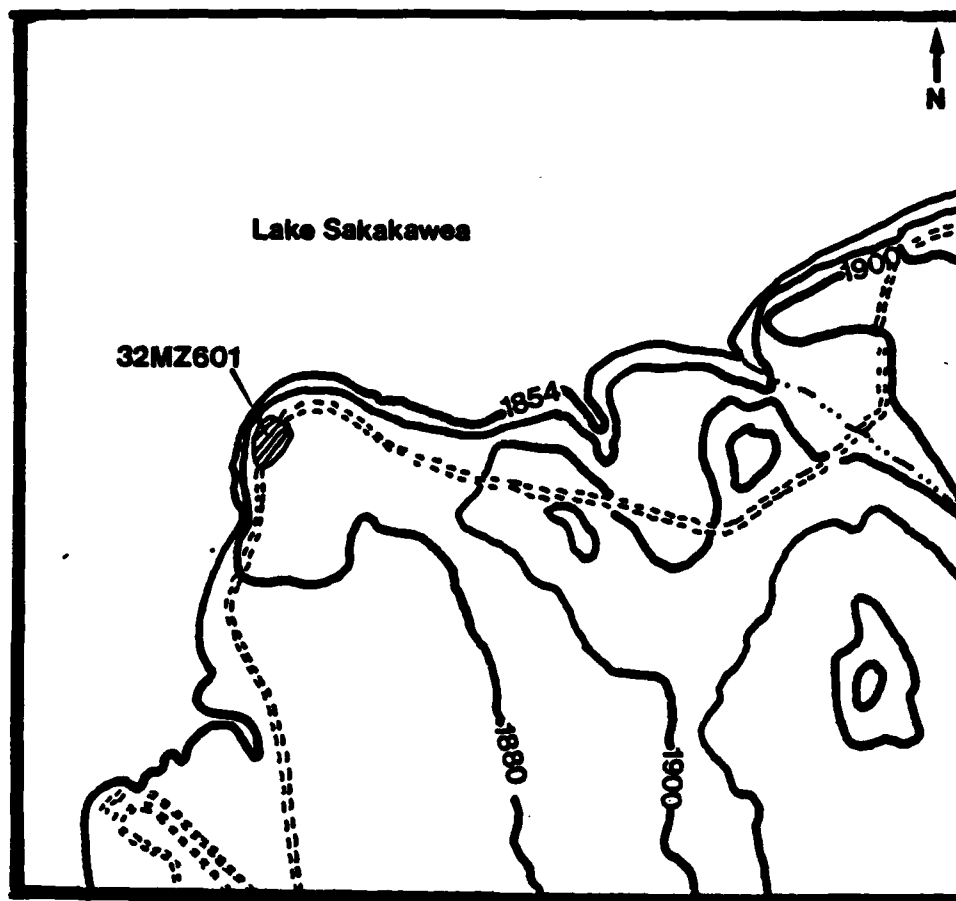
T P VAN HOY ET AL. 1983 DACH45-81-C-0222

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Map Key:
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 Two-track road=- - - -
 Seasonal water=.....
 Site area=⊙

Figure 12. Map of 32MZ601.

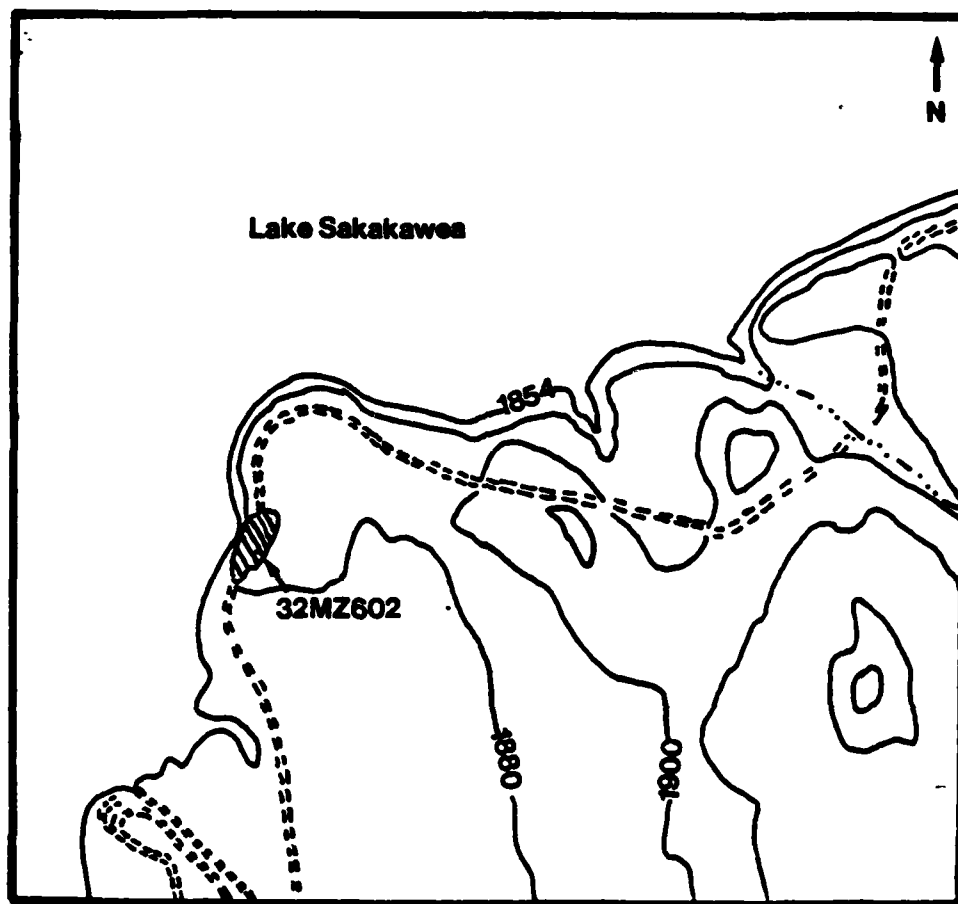
Discussion. Site 32MZ601 contains good potential for intact, buried cultural resources. The terrace on which the site is located has very deep soil accumulations and may contain deeply buried cultural deposits. The site has been, and is continuing to be, very severely eroded by wave action. This erosion is greatly reducing the total surface area of the terrace, and as a result, is reducing the site area as well. A fairly large portion of the terrace remains intact, however, and may contain significant cultural materials.

Recommendation. It is recommended that a testing program be initiated as soon as possible in order to evaluate the site for potential eligibility to the National Register of Historic Places. This testing should concentrate on the uneroded portion of the terrace. If the site is eligible to the National Register, the continuing erosional damage is not in compliance with Federal cultural resource legislation. Therefore, the testing program should be conducted as soon as possible. If not, the impacting edge should be stabilized to prevent further impact to this potentially significant site.

32MZ602 TGB-5

Site Description. The site is situated on the same high terrace above Tobacco Garden Bay as site 32MZ601, but approximately 120 m to the south (Figure 13). As with 32MZ601, most of the cultural material at the site was observed in an unimproved road bed. During the 1983 re-investigation a single projectile point was observed protruding out of a large crack along the extreme western end of the terrace. The crack represents a large segment of the terrace that is about to erode into the bay. The site contains extensive cutbank exposures along the west edge which were examined with negative results. In spite of extensive erosion, a large area of intact terrace remains in the site area. The site area is 750 m Sq. The elevation is 573 m AMSL.

Cultural Materials. During the 1981 inventory a total of 10 KRF flakes, three porcellanite and one yellow chalcedony flake were collected. In addition, one red chert spokeshave was also collected. During the 1983 reinvestigation approximately nine KRF flakes were observed but not collected from the road bed. In addition, a projectile point base, identified as Pelican Lake, was collected from a crack near



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 Site area= ⊗

Figure 13. Map of 32MZ602

the west edge of the terrace, approximately 10 cm below the ground surface.

Recommendations. The recommendations offered for site 32MZ602 are essentially the same as those offered for 32MZ601. The site has, and continues to be, severely impacted by cutbank erosion. However, large portions of the terrace remain intact, and contain good potential for buried cultural resources. Therefore a program of subsurface testing is recommended to evaluate the site for potential for nomination to the National Register of Historic Places. If such testing is not conducted in the near future, the eroding bank should be stabilized to prevent further site destruction until it can be properly evaluated.

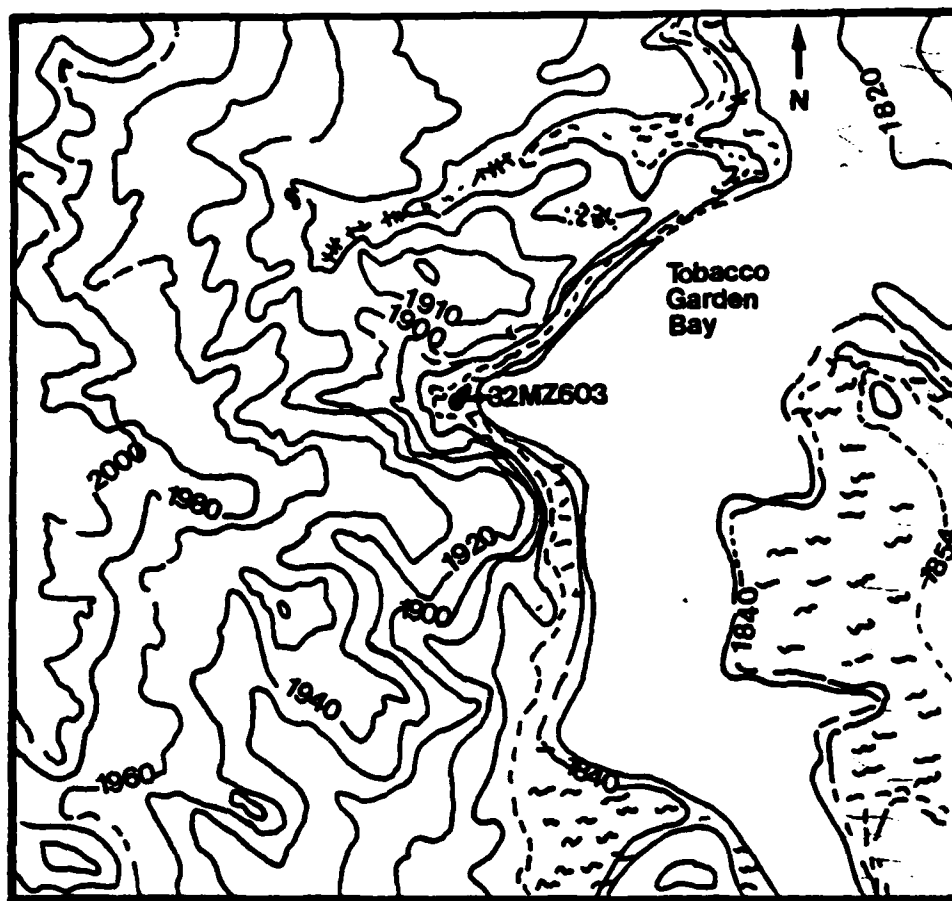
32MZ603 TGB-6

Site Description. The site is located on the eastern shoreline of a small island that was exposed due to low water levels. The site is situated along the west side of Tobacco Garden Bay, at a mouth of a small intermittent creek. The site was under water during a visit to the area on August 10, 1983, and is normally inundated. The site was originally recorded as a sparse sherd and lithic scatter. The site area is 400 m sq. The elevation of the site is 364 m AMSL.

Cultural Material. All observed cultural material was collected, and consists of: one tertiary KRF flake, one body sherd (grit tempered, black paste, unknown surface treatment), and two pieces of agate shatter.

Discussion. The site boundaries could not be determined due to inundation by Tobacco Garden Bay, however, the material was observed on a small plot of nonflooded land approximately 10 x 40 m in size. The site reflects occupation/utilization by an unknown cultural group during the Late Prehistoric period.

Recommendations. Site 32MZ603 had undoubtedly been adversely impacted by flooding and water generated erosion. At the present time it is not known if the material observed is in primary or secondary context. There is a possibility that the site area contains intact cultural deposits. It is recommended that the site be tested for potential eligibility to the National Register of Historic Places. This testing should be conducted when the reservoir pool level is sufficiently low.



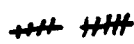
Map key:
 Wetlands partially
 Submerged= 
 Contour lines= 
 Site area= 
 Seasonal water= 

Figure 14. Map of 32MZ603.

32MZ604 TGB-7

Site Description. This site consists of a single stone circle, 6 m in diameter, located on top of a ridge along the west side of Tobacco Garden Bay (Figure 15). The site is located a short distance east of a barbed wire fence marking the eastern boundary of private land. The site is in an area of dense native grasses and was relocated on August 10, 1983. The site area is 36 sq m. The elevation of the site is 579 m AMSL.

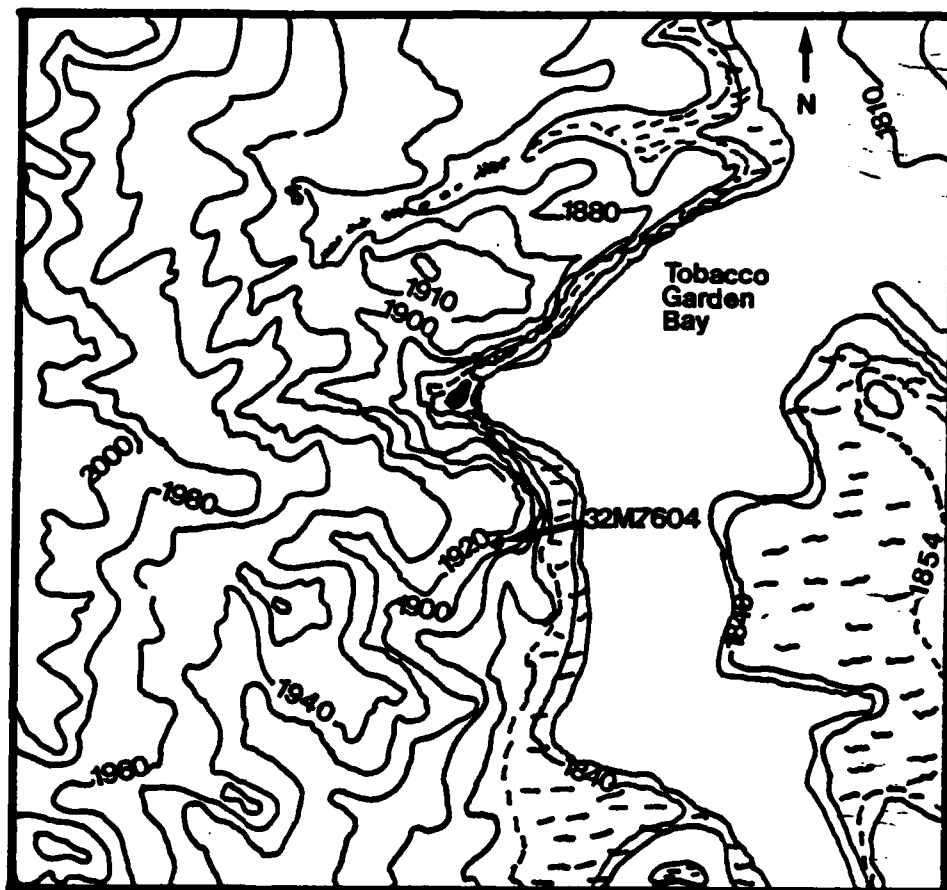
Cultural Material. No cultural material was observed in association with the stone circle. Heavy grass cover prohibited adequate surface investigation.

Discussion. The cultural/temporal affiliation of the stone circle cannot be determined due to the lack of diagnostic artifacts. The fact that the site is a stone circle and that nearby sites contain ceramics (32MZ603) may indicate that the site was occupied during the Late Pre-historic period. No additional information on the site is available at this time.

Recommendations. The site is apparently undisturbed and is situated on an upland ridge that appears to have some intact soils, however these may be fairly thin. The site may contain associated artifacts and buried cultural materials in association with the stone circle, testing would be needed to establish this possibility. It is recommended that the site be evaluated in terms of eligibility to the National Register through a program of subsurface testing.

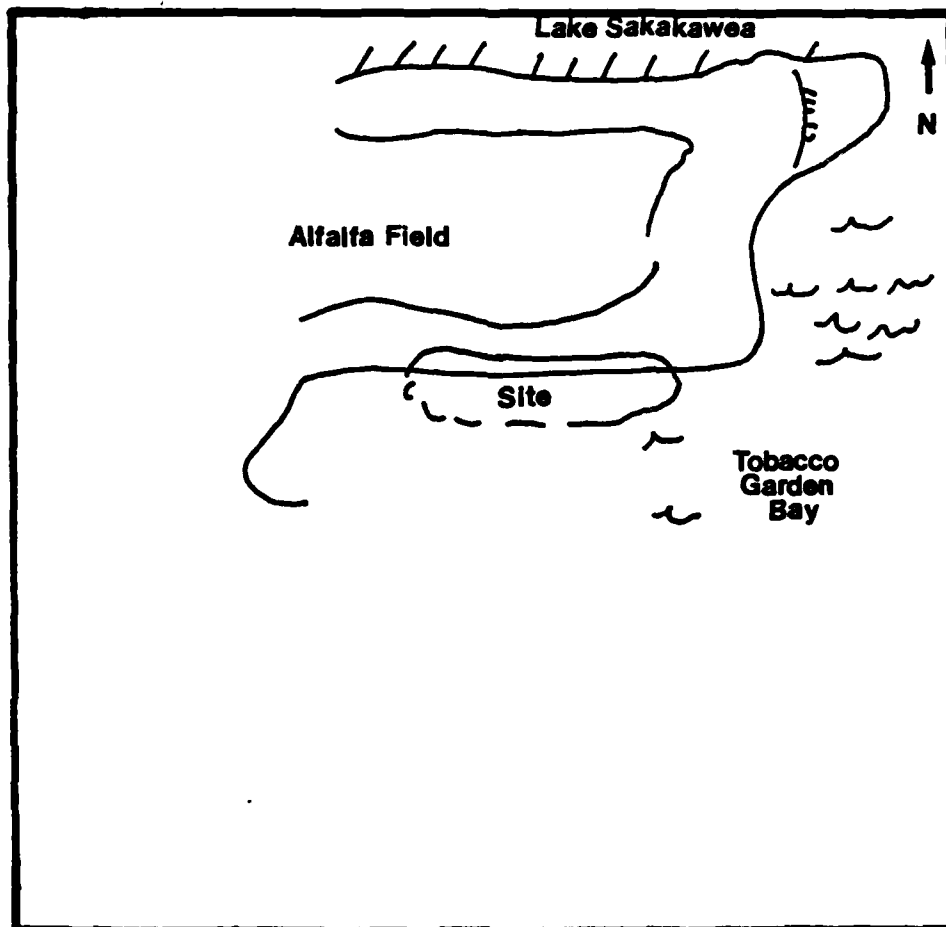
32MZ406 TGB-8

Site Description. This site was originally recorded and described by Johnson (1976) and was relocated during the 1981 inventory (Figure 16). The site consists of a prehistoric campsite located on the beach of a small inlet on the west bank at the mouth of Tobacco Garden Bay. The site is immediately south of an eroded cutbank. The site was revisited on August 10, 1983 and was observed to be completely underwater. At the present time it is not known if the material originally observed was in primary or secondary context. It is possible that the artifacts may have eroded out of the terrace cutbank. The cutbank was investigated during the August 10, 1983 visit and no cultural material was observed.



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 Wetlands, partially
 Submerged=
 Contour lines=
 Seasonal waters= ++++++ ++++++

Figure 15. Map of 32MZ604.



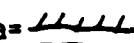
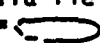
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 Lake Sakakawea= 
 Alfalfa field= 
 Site= 

Figure 16. Map of 32MZ406.

Cultural Material. Johnson (1976) collected one bone and 18 lithic artifacts from the site. Artifacts collected during the 1981 survey consist of one KRF moderately patinated corner notched projectile point, three KRF flakes, and one chalcedony flake. No cultural material was observed during the 1983 revisit.

Discussion. The recovered projectile point appears to be a re-worked Pelican Lake specimen. This would suggest that the site was occupied later than ca. 2500 B.P. The boundaries of the site cannot be determined due to inundation. The context of the observed cultural material is also unknown. The material appears to either be in primary context reflecting beachline occupation, or in secondary context having eroded from the terrace to the north.

Recommendations. The presence of a fairly large amount of cultural material on the now inundated beach suggests that a potentially significant archeological site is present somewhere in the vicinity. The site is certainly being adversely impacted and has been impacted by either water inundation and/or cutbank erosion. The extent of this impact is unknown. Therefore, it is recommended that the site be evaluated for potential eligibility to the National Register of Historic Places. This testing should be conducted both on the intact terrace to the north of the shoreline and in the original location of the observed cultural material (now underwater). The testing in the inundated beach area should be conducted when the reservoir pool level is sufficiently low.

Isolates

1. Two KRF flakes were observed and collected from the south side of Lake Sakakawea at the extreme northeastern corner of the project area. The potential for additional intact cultural resources is considered low and no further work is recommended for the area.
2. One heavily patinated KRF projectile point was observed and collected from an eroded clay slope located east of an intermittent creek. The artifact was not in primary context and no further work is recommended for the area.
3. A single unifacially retouched KRF flake was recovered from a sand and gravel beach near the extreme northwestern corner of Tobacco Garden

Bay. The artifact was not in primary context and no further work is recommended.

4. One secondary KRF flake was recovered from a sand and gravel beach near the northwest corner of the study area. The artifact was not in primary context and no further work is recommended.

5. One secondary KRF flake was collected from a sand and gravel beach near the southwest portion of Tobacco Garden Bay. The artifact was in secondary context. No further work is recommended.

Summary

A total of seven cultural resource sites are present in the Tobacco Garden Bay survey tract. One of these was identified during the literature search (32MZ406) and was relocated in the field (Table 4). An historic site (32MZ144) was also identified from the literature search, however it is located beyond the survey tract boundaries. Consequently 32MZ144 does not warrant consideration as part of the Tobacco Garden Bay area cultural resource management program.

The remaining several sites within the designated survey tract were reviewed in terms of potential significance, integrity of the deposits, past impacts, and potential adverse effects (Table 5). The results of this examination were used to prioritize the sites relative to each other for the Tobacco Garden Bay survey tract. The results should be useful in formulating a cultural resource management program for the study tract.

1) 32MZ602 is a prehistoric scatter which has a Pelican Lake complex component. The site exhibits lithic debris and good soil deposition. The site is subject to active erosion from Lake Sakakawea and consequently should be tested in the near future so that further cultural resource management decisions can be made. The testing program should be designed to identify horizontal and vertical extent of component(s) as well as the potential of the site deposits to yield useful information concerning prehistoric useage of the area. Should the site deposits be significant then decisions will need to be made to either protect the site from further erosion or to excavate the deposits. Should testing results indicate that the site deposits are not signifi-

Table 4. Summary of previously recorded cultural resources for the Tobacco Garden Bay survey tract.

Site Number	Site type/temporal Affiliation	Comments
32MZ144*	Historic Homestead	Beyond boundaries of tract, no further research necessary.
32MZ406	Prehistoric campsite	Cultural material along beaches has been severely eroded. An intact area is present north of the beach- line.

* beyond present survey boundaries

Table 5. Summary of newly recorded cultural resources for the Tobacco Garden Bay survey tract.

Site Number	Site type/temporal affiliation	Comments	Recommendations
32MZ598	Historic Homestead (Samuel and Bertha Landers)	no standing structures, some historic debris	site has been adequately documented, no further work recommended
32MZ599	Historic homestead (Martin Iverson)	1 log barn, 3 cement slabs, 1 basement, 1 partial foundation, 1 outbuilding, 1 well, and debris	site has been adequately documented, no further work is recommended
32MZ601	Prehistoric lithic scatter	lithic debris, faunal bone, good soil deposition	active erosion, stabilization, testing for NR
32MZ602	Prehistoric lithic scatter, Pelican Lake Complex	lithic debris, good soil deposition	active erosion, stabilization/testing for NR
32MZ603	Prehistoric lithic scatter, Late prehistoric period	lithic debris and pot sherds	partially inundated, testing when pool level low
32MZ604	Prehistoric, tipi ring	undisturbed, on an upland ridge	testing, no immediate impacts
32MZ406	Prehistoric campsite Pelican Lake Complex (previously recorded by Johnson 1976).	near a terrace cutbank, lithic debris and faunal bone	inundated and/or cutbank erosion, test when pool level low, test cutbank

cant and/or have largely been removed by erosion, then the site may be dropped from the priority list and will warrant no further work.

2) 32MZ601 is a prehistoric lithic scatter. Lithic debris and faunal bone were apparent. The site exhibits good soil deposition. The site is subject to active erosion similar to that of the preceding site. Because of the continuing erosional impact to the site, it should be tested in the near future before more of the site is eroded. Testing should delineate extent of components as well as the significance of the site deposits. The potential to yield datable features and diagnostic tools is also a factor in determining whether the site warrants further investigation beyond testing. Should the testing results indicate that the site does not contain significant materials and/or that it lacks integrity then it is recommended that the site may be dropped from the priority list and no further investigations at it would be warranted.

3) 32MZ603 is a prehistoric lithic scatter which contains a Late Prehistoric period component. Lithic debris and potsherds were among the cultural materials observed. The site has been impacted by erosion from Lake Sakakawea. At normal pool level it is partially inundated. The site is recommended for testing in two phases. The intact portion of the site is recommended for testing to assess the significance and content of the deposits. Should these results be negative then no further work at the site is recommended. Should testing results indicate that significant deposits are present, then plans should be made to protect the deposits from further erosion or to excavate them. In addition, at low pool level the inundated portion of the site should be tested to determine if intact deposits are present there also and if so devise a plan to recover the data from that part of the site.

4) 32MZ406 is a prehistoric campsite which was previously recorded. The site exhibited lithic debris and faunal bone near a terrace and cutbank. The site contains a Pelican Lake Complex component. The site is subject to continued erosion and is inundated at normal pool level. Intact portions of the site are likely present in the remnant of the terrace. It is recommended that the site be tested in order to assess the significance and integrity of the deposits as well as their potential to yield important information about the prehistory of the area. It would be necessary to schedule this testing when the pool level is low in order to have access to the majority of the site area.

5) 32MZ604 is a prehistoric tipi ring site which is relatively undisturbed since it is located on an upland ridge. There are no immediate impacts to the integrity of the site. Testing to provide data for management decisions is recommended at some future time. The site is not presently being impacted and consequently has been given a low priority listing for the project area.

6) 32MZ599 is an historic homestead. The site exhibited several features including a few partial structures. The site has been properly recorded and photographed. A deed search was performed which identified the landowners and transactions. As such the site has been properly documented and warrants no further investigation. It is recommended that 32MZ599 be given a relatively low priority listing for the study tract as the site has been properly documented and further investigation is not necessary.

7) 32MZ598 is an historic homestead which exhibited some features and scattered debris, but no standing structures. The site was properly recorded and photographed. In addition a deed search was performed which identified the landowners and record of transactions. No further investigation is warranted nor recommended for this site as it has been adequately documented. Consequently the site is assigned a low priority listing for this survey tract.

NATIONAL GUARD AREA

Introduction

The National Guard project area is located in Williams County along the north shoreline of Lake Sakakawea (Figure 17). The project area is composed of rugged and severely eroded badlands consisting of eroded clay ridges, knobs, and buttes dissected by intermittent dendritic drainages. A large portion of the study area is situated along a dissected and eroded valley formed by headward erosion of an intermittent creek which flows into Lake Sakakawea. The mouth of the creek is now inundated forming a long narrow bay. Erosion of the creek valley walls has been extensive resulting in the loss of most of the topsoil in the upland areas. An eroding ridge comprises most of the southwestern portion of the study area, while sloping clay outcrops dominate most of the southeastern portion. Soils are primarily colluvial (clays and sandstone) deposited by slopewash from the eroding uplands and alluvial deposited along the drainage bottoms and shoreline of Lake Sakakawea.

Previous historic period use of the study area was minimal due to the rugged and eroded nature of the topography. The area is not suitable for farming but cattle ranching may have been practiced in low intensity levels. Historic use of the Missouri River bottomlands south of the study area cannot be documented due to inundation by Lake Sakakawea.

Present land use in the study area is virtually limited to training exercises conducted by the North Dakota National Guard. The nature of the training exercises are not known, but are expected to include military maneuvers, medical air rescues, and target practice. The area may receive occasional recreational use, especially fishing along the Lake Sakakawea shoreline.

Previous Investigations

No previous archeological or historical investigations have been conducted in the National Guard study area, according to the records search conducted at the offices of the State Historical Society of North

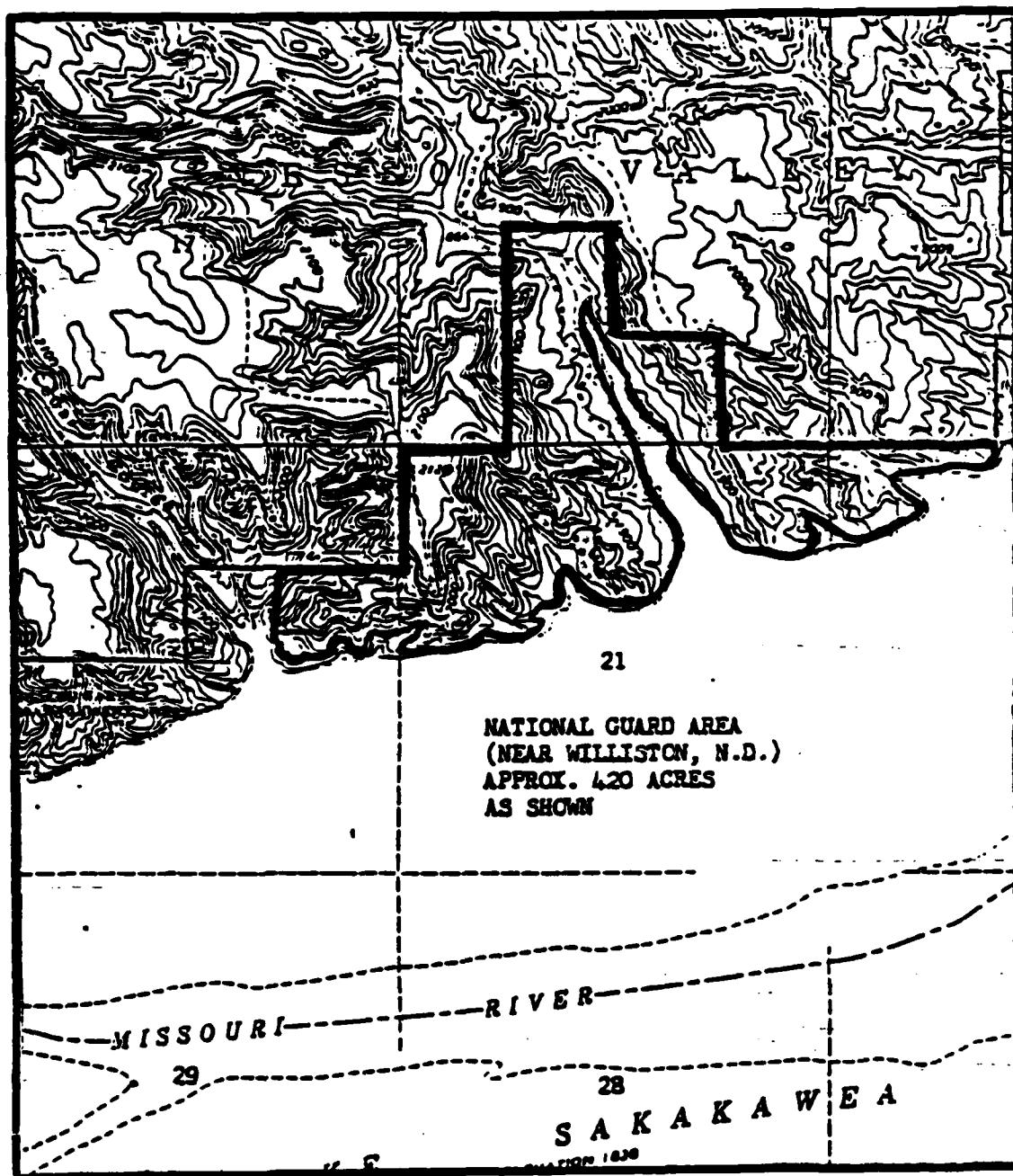


Figure 17. National Guard area.

Dakota. Three sites, however, were recorded near the project area by Thad Hecker (1938). These are outside of the project area in Sections 9, 14, and 16, T154N, R97W. Additional information on these sites is available in the archives of the North Dakota Heritage Center. The sites are outside of the project area and need not be addressed further under this scope-of-work.

Cultural Resources

No cultural resources were located in the National Guard study area. This paucity of material is somewhat surprising, but may be explained by the severely eroded nature of the topography. Topsoil is lacking throughout much of the area and slopewash has removed large quantities of material from the upland settings. In addition, the lowlands have been subjected to aggradation from the slopewash material, obscuring much of the original ground surface. The floodplains of the drainage bottoms have also been altered by inundation caused by Lake Sakakawea. For these reasons, the possibility of intact undisturbed cultural deposits in the study area is considered low. One prehistoric site and a prehistoric isolate were recorded, but were determined to be outside of the project area.

32WI59 NG-1

Site Description. The site consists of two and a half stone circles situated on top of a flat area of a ridge that overlooks the Missouri River. The stone circles are approximately 5 m in diameter. The site is located outside of the National Guard area on private land. Since this site is beyond the project boundary, it has not been illustrated here. The site area is 160 m sq. Elevation is 591 m AMSL.

Cultural Material. No cultural material was observed in association with the stone circles.

Discussion. Little can be said about 32WI59. The two complete rings are approximately the same size (5 m in diameter) and are characterized by homogeneous rock size. The site has moderate soil development and may contain buried cultural materials, although none were observed on the surface. The site is approximately 8 m by 12 m in size

and most likely reflects temporary occupation during the Late Prehistoric period, a lack of diagnostics prohibits accurate temporal placement.

Recommendations. Since the site is located on private land, the U.S. Army Corps of Engineers is under no obligation to protect or further investigate the site. Therefore no further archeological work is recommended for site 32WI59.

Isolate

1. One broken clear chalcedony side notched projectile point and one KRF biface fragment were observed and collected in a two-track road adjacent to a golf course east of the project area (Table 1). The artifacts were not recovered from intact cultural deposits and no further work is recommended for the area.

Summary

A total of four cultural resource locations were identified for the National Guard Area vicinity, however none of the four is within the actual survey tract (Table 6).

The literature search found three prehistoric campsites on record as reported by Hecker (1938). These are all beyond the survey boundaries and thus do not warrant consideration as part of the cultural resource management program for the National Guard area.

The fourth site, 32WI59, is a prehistoric tipi ring site consisting of two complete rings and one partial ring (Figure 6a). The site is presently adjacent to, but not within, the designated survey boundaries. Consequently the site need not be considered further. In summary, there are no sites, prehistoric nor historic, of concern within the National Guard survey tract.

Table 6. Summary of previously recorded cultural resources for the National Guard Area survey tract.

Site Number	Site type/temporal affiliation	Comments
location	Prehistoric campsite (Hecker 1938)	beyond survey tract
location	Prehistoric campsite (Hecker 1938)	beyond survey tract
location	Prehistoric campsite (Hecker 1938)	beyond survey tract

Table 6a. Summary of newly recorded cultural resources for the National Guard survey tract.

Site Number	Site type/temporal affiliation	Comments	Recommendations
32WI59	Prehistoric tipi rings	2 tipi rings 1 partial ring on ridgetop	on privateland, beyond survey tract, no further work

HOFFLUND BAY AREA

Introduction

The Hofflund Bay area is situated around the mouth of Beaver Creek on the north shoreline of Lake Sakakawea (Figure 18). Hofflund Bay is formed by the inundation of the mouth of Beaver Creek, and is approximately 300 m wide and 1060 m long. The study area borders Hofflund Bay on the north, east, and west. The northern portion of the area includes the normal channel of Beaver Creek and a part of Dry Creek as well. The entire area is characterized by low relief topography with alluvial deposits. Low eroding terraces, small sandy hills, and inundated floodplain comprise most of the terrain. No Tertiary deposits are outcropping in the project area as the entire landscape was formed during the Holocene. Soils are exclusively alluvial with extensive sand deposits. Several areas contain eroded cutbank terraces, an examination of which indicates very deep sand accumulations.

The previous land use in the Hofflund Bay area may reflect prehistoric and historic period travel to and from the Missouri River via the Beaver Creek drainage from the north. Travel routes through the Hofflund Bay area may have become intensified upon establishment of fur trading posts on the Upper and Middle Missouri during the early 1800's. Fur trading activity gave way to military activity in response to increasing Sioux hostility after 1866 (establishment of Fort Buford) (Robinson 1966). The homesteading era of the early 1900's brought farming, ranching, and sheep herding to the area, which continue at the present time. Current land use also includes extensive recreational activity, primarily boating, fishing, and swimming.

Previous Investigations

No previous archeological or historical investigations are known to have been conducted specifically in the Hofflund Bay study area. Three prehistoric sites were recorded nearby, in Sections 14, 16, 17, T154N, R95W, by Thad Hecker (1938). Additional information on these sites is present in the ND State Historical Society archives. Since the sites

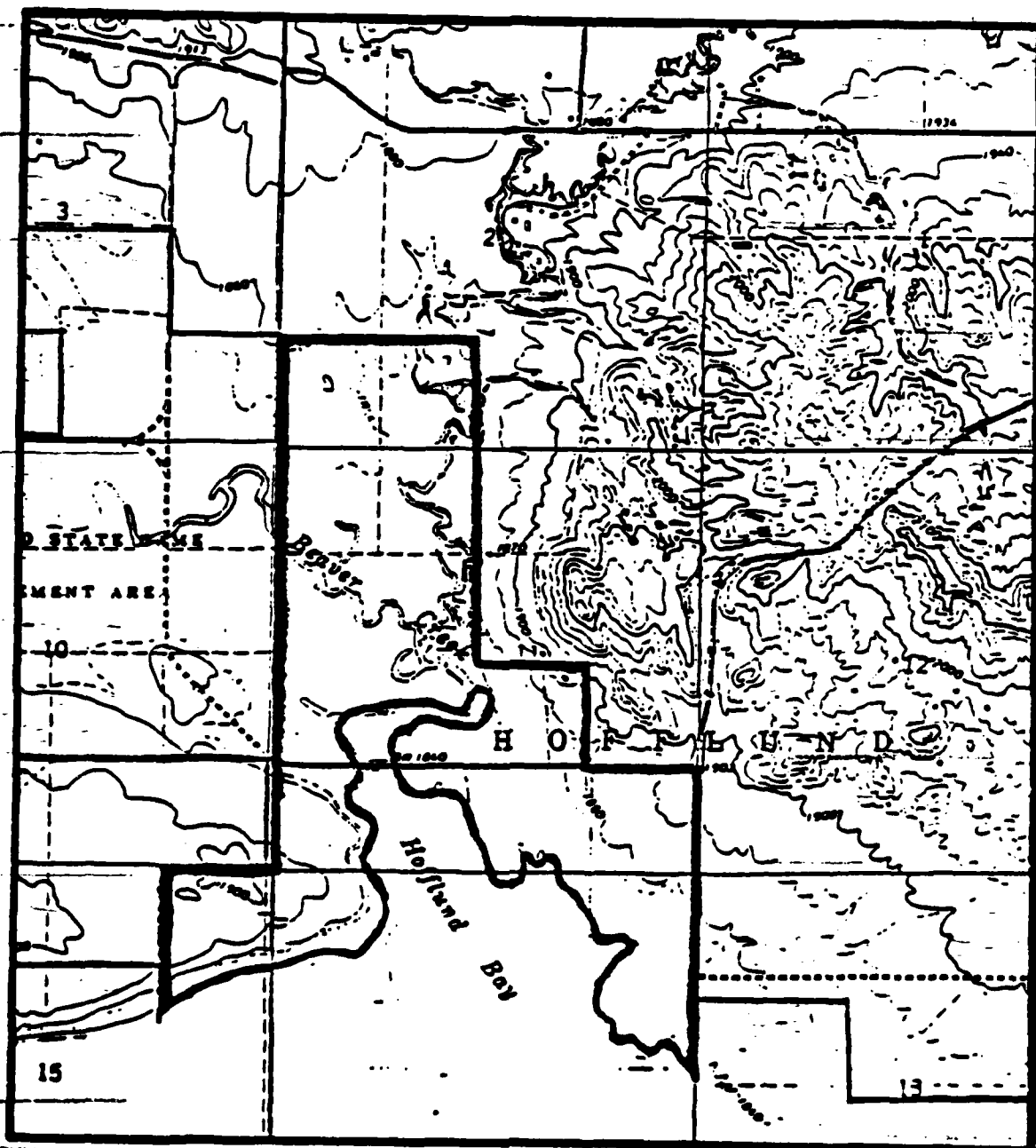


Figure 18. Hofflund Bay area.

are outside of the project area, additional information will not be presented at this time.

Cultural Resources

32WI57 HB-1

Site Description. The site is located on the east bank of Beaver Creek at the mouth of Hofflund Bay (Figure 19). The site was located during low reservoir pool elevation on a silt covered area. The site contained lithic tools and flaking debris and a shell bead. The site area was revisited on August 14, 1983 at which time it was observed to be underwater. The site area is 600 m sq. The elevation of the site is 557 m AMSL.

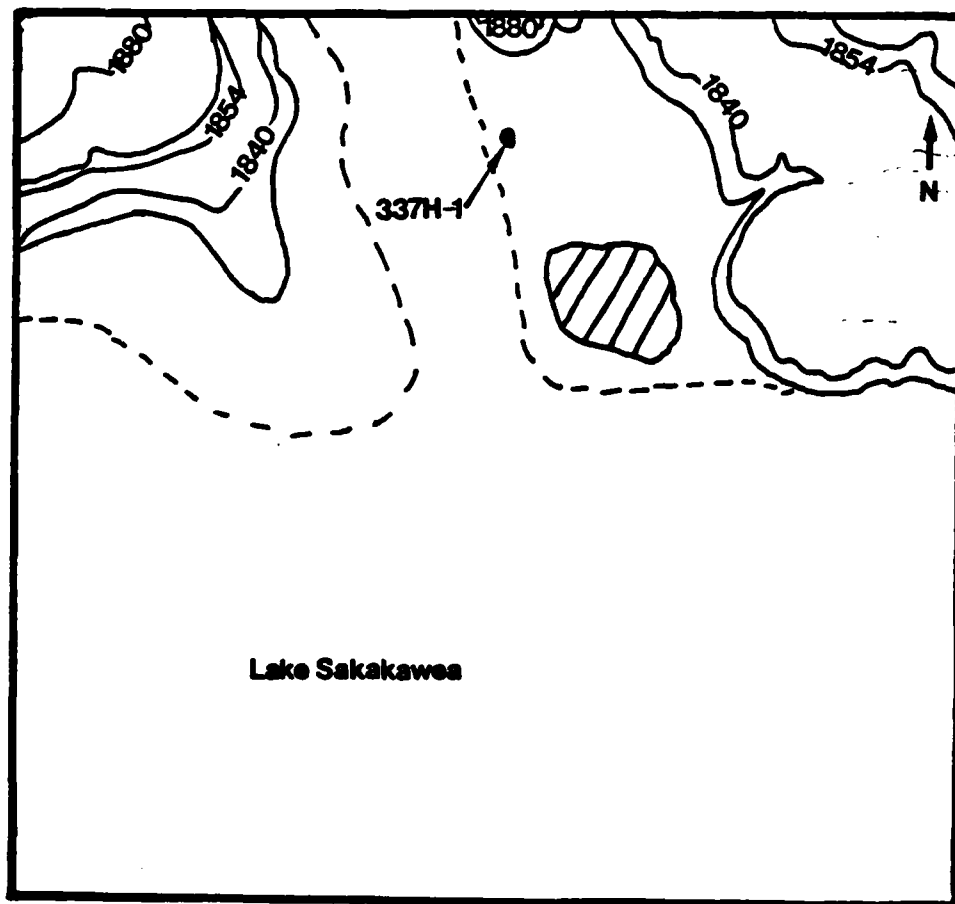
Cultural Materials. Artifacts collected include one fine-grained quartzite projectile point tip, one chalcedony side notched projectile point, one disc shell bead, one brown chalcedony unpatterned biface, one petrified wood biface fragment, one quartzite flake, and three porcellanite flakes.

Discussion. Since no eroding terrace is situated near the site, it is likely that it represents an in situ cultural deposit. The boundaries of the site cannot be determined at this time due to inundation. The diagnostic projectile point recovered indicates occupation during the Late Prehistoric period. This estimation is also supported by the recovery of a shell disc bead. Additional information concerning the site is not available.

Recommendations. The site may be potentially significant, especially if it is in primary context. There has certainly been adverse impacts as a result of inundation and wave action, although the extent of these impacts is unknown. A program of National Register evaluation is recommended and should be conducted when the pool reservoir level is sufficiently low to permit the work.

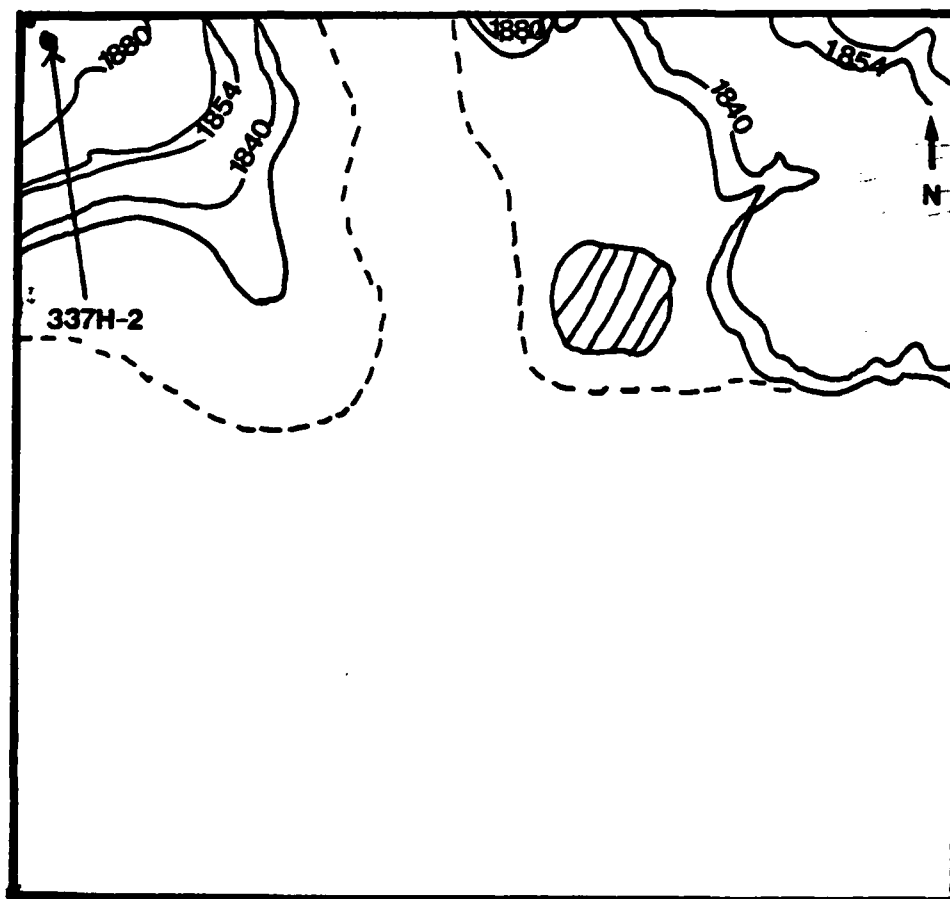
32WI58 HB-2

Site Description. The site consists of a sparsely distributed lithic scatter, located on a low terrace along the west side of Hofflund Bay (Figure 20). Cultural material was observed in an unimproved road,



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 Site= ●
 Current water level= - - - -
 Tide pool= 

Figure 19. Map of 32WI57.



Map key:
 Contour line= ~~~~~
 Site= ●
 Current water level= - - - -
 Tide pool= 

Figure 20. Map of 32WI58.

immediately south of a cattle guard. The site was revisited on September 14, 1983. At that time one biface was observed in the roadbed near the cattleguard. In addition, three flakes were observed eroding out of the terrace along the shoreline of Hofflund Bay. The site area is 300 m sq. The elevation of the site is 573 m AMSL.

Cultural Materials. Materials collected during the 1981 survey include one patinated KRF flake, three patinated unifacially retouched flakes, and one patinated KRF end scraper. During the 1983 revisit, one KRF biface fragment and three KRF flakes were observed but not collected.

Discussion. Site 32WI58 contains intact, buried cultural deposits. While the site has been impacted by erosion of the terrace and to some extent vehicular traffic on the unimproved road, a large portion of the terrace remains intact.

Recommendations. The site has potential to produce significant archeological information. Therefore, it is recommended that a program of National Register testing be conducted. This testing should be concentrated in the undisturbed portion of the terrace.

Summary

A total of five cultural resource locations were identified for the Hofflund Bay survey tract. Three of the locations were identified through the literature search and were prehistoric campsites reported by Hecker (1938). All three were beyond the survey boundaries (Table 7).

Two sites were recorded during fieldwork, both are prehistoric (Table 8). These two sites were evaluated in terms of potential significance, ability to yield important information concerning prehistoric lifeways, and present and potential impacts. The results allowed the sites to be ranked by priority relative to the resources within the survey tract. The results are presented below.

1) 32WI57 is a prehistoric lithic scatter which contains a Late Prehistoric period component. The site is largely inundated at normal pool level. The site may contain intact deposits even though it is partially inundated. It is recommended that, during a period or season of low pool level, the site be tested in order to assess the integrity

Table 7. Summary of previously recorded cultural resources for the Hofflund Bay survey tract.

Site Number	Site type/Temporal Affiliation	Comments
location	Prehistoric campsite (Hecker 1938)	beyond survey tract
location	Prehistoric campsite (Hecker 1938)	beyond survey tract
location	Prehistoric campsite (Hecker 1938)	beyond survey tract

Table 8. Summary of newly recorded cultural resources for the Hofflund Bay Area survey tract.

Site Number	Site type/Temporal Affiliation	Comments	Recommendations
32WI57	Prehistoric lithic scatter Late Prehistoric period	lithic debris, inundated	severely impacted, test at low pool
32WI58	Prehistoric lithic scatter	lithic debris, little impact to terrace	testing in future

and significance of the deposits. If the results are negative no further investigation would be warranted at site. Should the testing results indicate significant deposits retaining integrity, then plans could be made to either recover the data or preserve the site.

2) 32WI58 is a prehistoric lithic scatter located on a terrace which is presently under very little erosional impact. The site is recommended for testing at some future time to assess significance of the deposits and to obtain data to aid in management decisions. Since the site deposits are presently under stable conditions, there is little urgency to carrying out the testing.

FOUR BEARS PARK AREA

Introduction

Four Bears Park consists of a small peninsula extending southwest into Lake Sakakawea in McKenzie County (Figure 21). The peninsula is bordered by Four Bears Bay along the west. The topography of the study area is relatively flat and represents an old terrace of the Missouri River. Fairly rugged hills and buttes, part of the Missouri River breaks, are located north and northwest of the project area. The terrace is eroding along the east and west sides, resulting in exposed cutbanks. The soils are exclusively alluvial in origin and consist of silts, sands, and gravels.

Prehistoric and historic land use in the study area primarily centered around utilization and movement along the Missouri River. The peninsula area may have been the location of campsites and short occupations. Occasional cattle ranching may have been conducted in the area. At the present time the peninsula is used as a picnic area. A paved road leads to a number of developed picnic sites which consist of tables and charcoal grills.

Previous Investigations

No previous archeological or historical investigations are reported to have occurred specifically in the Four Bears Park area. In addition, no previously recorded sites are reported.

Cultural Resources

32MZ605 FBP-1

Site Description. The site consists of a small lithic scatter located in a portion of the terrace approximately 60 m south of the Four Bears Memorial Bridge (Figure 22). Cultural material was observed at the base of a cutbank above a sandy beach. No material was observed on or in the terrace or cutbank. The site was revisited on August 11, 1983 at which time no cultural material was observed. The pool reservoir

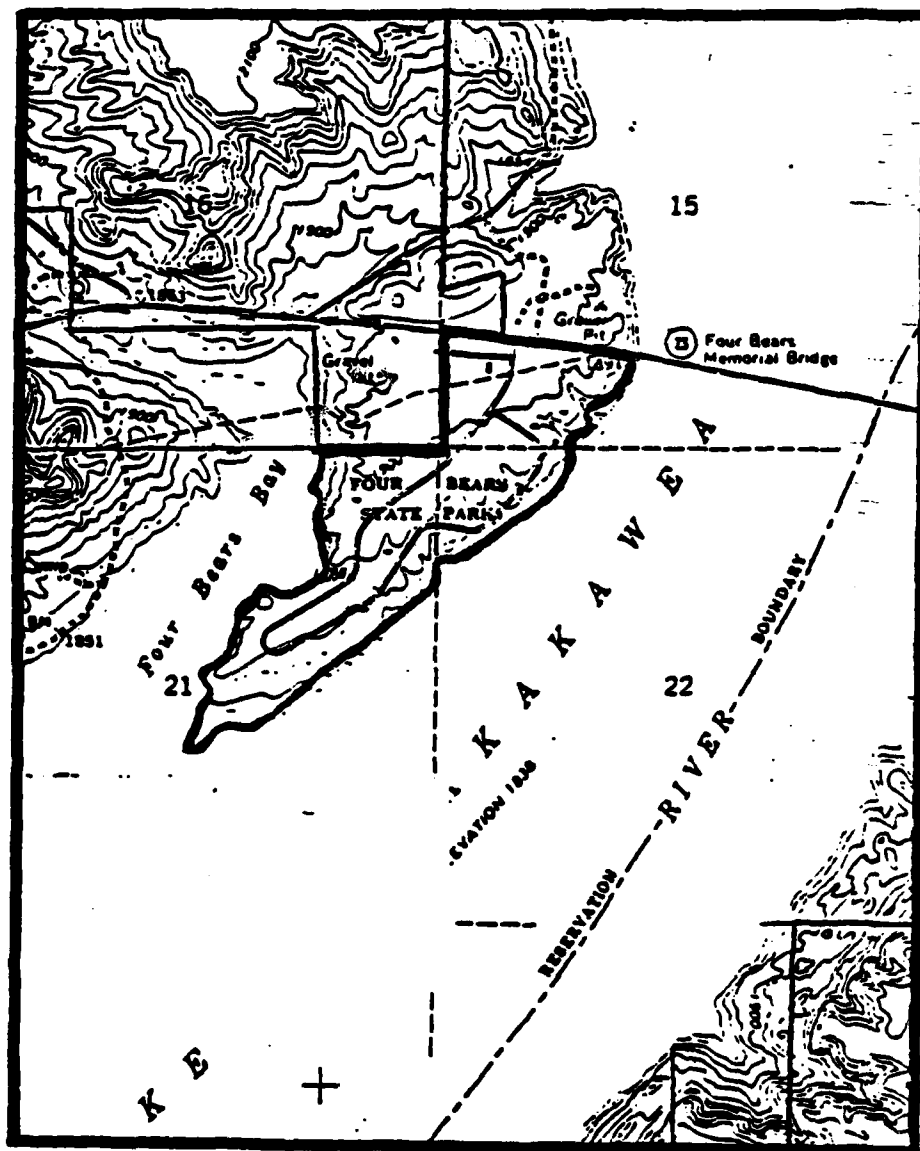
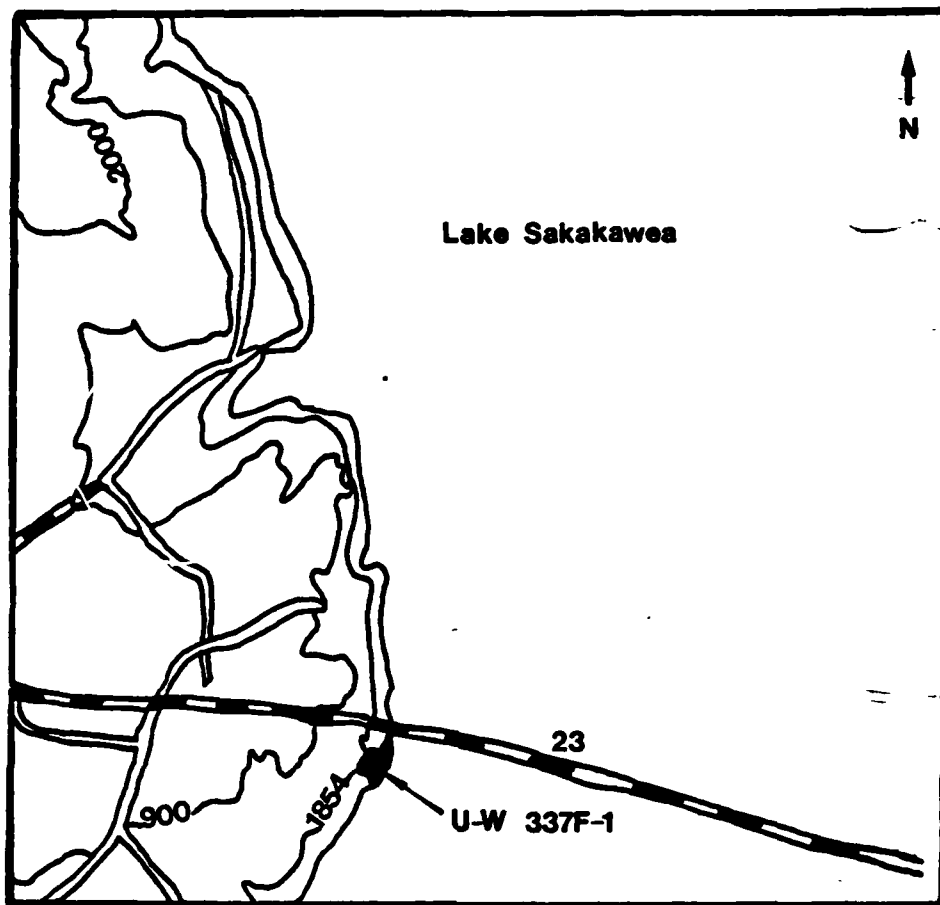


Figure 21. Four Bears State Park area.



Map Key:
 Contour line= ~~~~~
 Highway= 
 Gravel or dirt road= 

Figure 22. Map of 32MZ605.

level was high and the entire beach was under water. The site area is 450 m sq. The elevation of the site is 560 m AMSL.

Cultural Materials. Artifacts collected during the 1981 inventory include one KRF biface fragment, two KRF end scrapers, one unifacially retouched KRF flake, one porcellanite flake, six KRF flakes, and two clear chalcedony flakes.

Discussion. The site appears to have intact cultural material remaining in the terrace. The material on the beach observed in 1981 indicates that the site has received erosional impact. The site cannot be placed in a cultural or temporal framework due to a lack of observed diagnostics. The boundaries of the site are difficult to establish due to inundation. The material appears to have eroded out of an area approximately 10 m x 45 m in size.

Recommendations. If the cultural material observed on the beach eroded out of the terrace to the west, the site may contain additional buried cultural materials. While it has undoubtedly been impacted by cutbank erosion, the extent of this impact has not been determined. It is recommended that the site be tested for potential eligibility to the National Register of Historic Places. The testing should be conducted both on the uneroded portions of the terrace and in the beach area when the water level is low enough to permit the work.

Isolates

1. Six KRF flakes were recovered on the sandy beach in the SW $\frac{1}{4}$ of Section 15. The flakes were not in primary context, and no further work is recommended.

2. One KRF biface fragment, reworked into an end scraper, was collected from the beach in the NE $\frac{1}{4}$ of Section 15. The isolate was in secondary context, and no further work is recommended for the area.

Summary

Only one cultural resource site was identified for the Four Bears State Park survey tract (Table 9). No sites were previously reported from the literature search. The site recorded in the field was pre-historic and has been partially impacted by erosional action from Lake Sakakawea.

Table 9. Summary of newly recorded cultural resources for the Four Bears State Park Area survey tract.

Site Number	Site type/temporal affiliation	Comments	Recommendations
32WZ605	Prehistoric lithic scatter	partially inundated, part of terrace intact	testing when low pool & at terrace

(No previously recorded sites were on file for the survey tract).

1) 32MZ605 is a prehistoric lithic scatter. Part of the site is inundated and the other part encompasses a portion of an intact terrace. Testing to assess the significance and integrity of the deposits is recommended in the near future before more of the site is disturbed by erosion. The testing could be completed on the terrace and if significant cultural materials are found, the testing could be continued to the inundated portion, in a year or season when the pool is low. Should the testing results be negative, then no further work would be warranted at the site.

NEW TOWN AREA

Introduction

The New Town Recreation area is situated along the north and south side of Sanish Bay against the eastern shoreline of Lake Sakakawea (Figure 23). Sanish Bay was formed by the inundation of an intermittent creek and is approximately 2400 m long and 220 m wide at the mouth. The topography of the study area is a combination of linear upland buttes, low terraces, and inundated floodplain. Soils represent a combination of aeolian sediments of the Oahe Formation and alluvial deposited gravels and silts. The northern portion of the study area contains extensive terrace cutbanks which exhibit both alluvial gravel lenses and members of the Oahe formation. The south side of Sanish Bay contains eroded breaks which contain exposed clays and sandstones of the Tertiary Sentinel Butte formation. Previous land use reflects travel and utilization along the Missouri River. Presently the area is utilized as a recreation area for boating and fishing.

Previous Investigations

A large amount of previous archeological and paleontological work has been conducted in the vicinity of the New Town area. These include dated cursory investigations as well as more recent large scale projects.

The Smithsonian Institution River Basin Surveys recorded three sites in the area. Two are located outside of the project and one is located within the project boundaries. Site 32MN4 was recorded by Marvin Kivett in 1947. George Metcalf modified the site legal description in 1952. The site consists of pottery, flint chips, lead bullets, broken stone, and animal bone and is situated on the left bank of the mouth of the Little Knife River. The location is south of the scenic highway on a second terrace above the river, north of the survey area. Material was observed scattered in a 100 yard area of a plowed field.

Site 32MN17 was recorded by Kivett in 1947, and was described as containing pottery, worked flint, animal bone, and obsidian chips. The

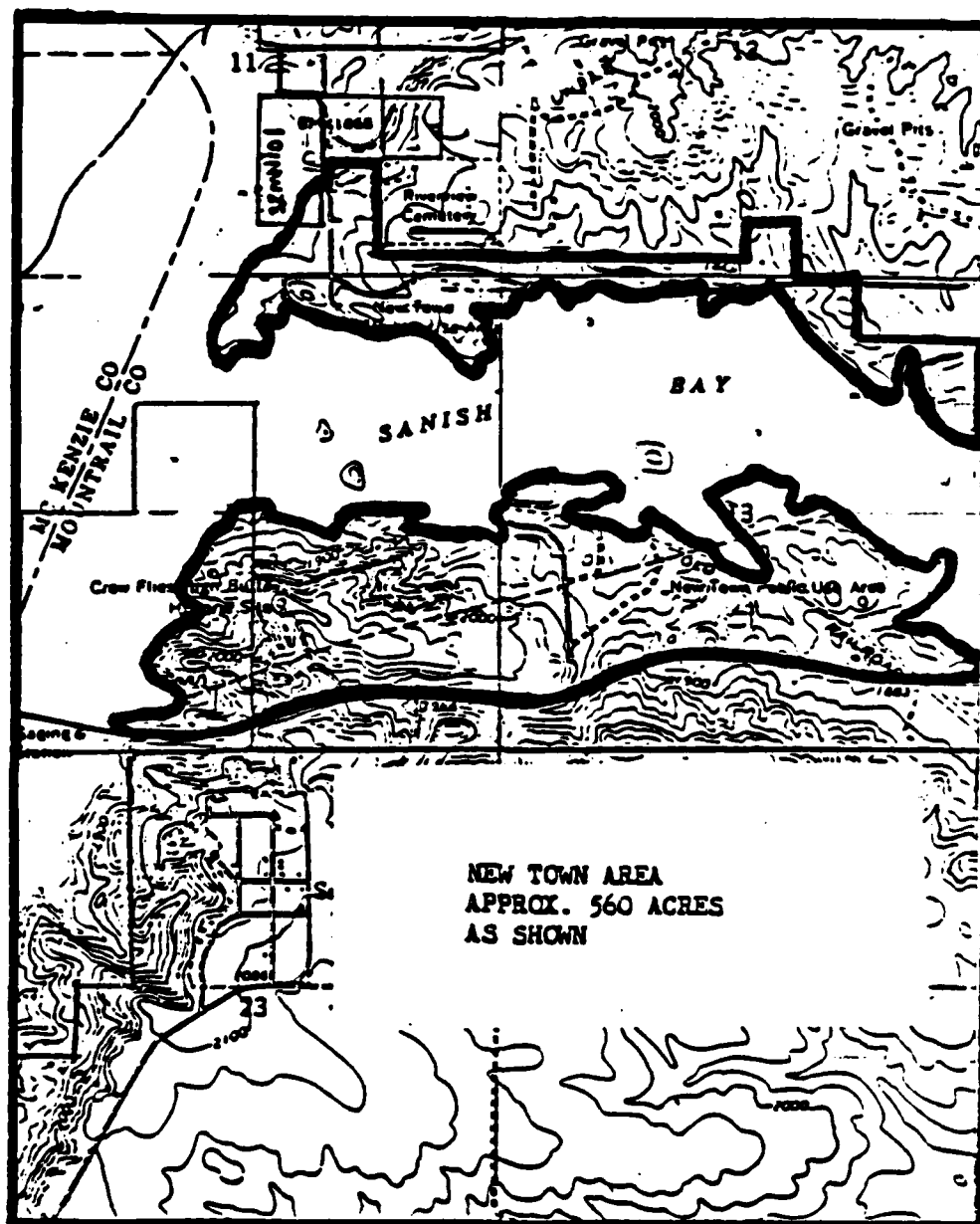


Figure 23. New Town area.

site legal description was altered by Metcalf in 1952. The amended legal places the site underwater near the mouth of Sanish Bay.

Site 32MN10 was recorded by Kivett in 1947, and is located within the New Town survey area. The site was relocated in 1950 by G. Hubert Smith, who observed one projectile point and eight pieces of chipped stone along the edge of an eroded bank 100 feet south of the Verendrye Monument. The site was relocated on August 14, 1981 and lithic debris was observed on the eroded hill slopes and in the eroded two-track road which passes through the site area.

Five sites located outside but near the project area were recorded by personnel from the University of North Dakota in the early 1970's. A shoreline survey of Lake Sakakawea (Haberman and Schneider 1975) resulted in the recording of four sites in the vicinity. Site 32MN202 was recorded in 1974 and consisted of bison skeletons eroding out of a cutbank with cultural material, including a biface, a biface fragment, and several KRF flakes. The site is located approximately a quarter mile north of the survey area.

Site 32MN203, consisting of KRF flaking debris and bison bone, was recorded in 1974. The site is also located at least a quarter mile north of the survey area (Haberman and Schneider 1975).

A lithic scatter, 32MN232, was also recorded in 1974, at the old Sanish golf course. The site is situated approximately an eighth mile north of the survey area (Haberman and Schneider 1975).

A prehistoric campsite, 32MN233, was recorded in 1973, approximately 100 m north of the project area. The site is located east of the old Sanish golf course and consisted of 13 KRF flakes, a piece of quartzite shatter, two chert flakes, and a possible quartzite hammerstone (Haberman and Schneider 1975).

The Moe site, 32MN101, was recorded in 1973 by the University of North Dakota (Schneider 1975). The site is situated along the east shoreline of Lake Sakakawea approximately 500 m north of the survey area. The Moe site contained cultural components ranging from the Early Prehistoric to the Historic period, with most cultural material representing occupation representative of the Middle and Late Plains Archaic traditions (Schneider 1975). The Moe site represents the first documented Paleo-Indian site in North Dakota. Erosion generated by Lake Sakakawea wave action has destroyed most of the intact portion.

In addition to the above referenced sites, two historic cultural properties are also located in the New Town project area. An historical marker honoring Crow Flies High, a 19th century Hidatsa leader, is located on top of a prominent hill at the southwest edge of the study area. A national monument honoring the 18th century Verendrye expedition was originally located on the spot but has since been declassified and removed. The historical significance of the marker is unknown. The site is also the location of prehistoric site 32MN10, which may have prehistoric significance (see below).

The site of the old town of Sanish is situated in Sanish Bay, now under water in Sections 13 and 14. The town was abandoned as a result of the construction of the Garrison Dam and the inhabitants were largely relocated in newly established New Town. During the 1981 inventory several foundations could be seen in shallow water near the south side of Sanish Bay.

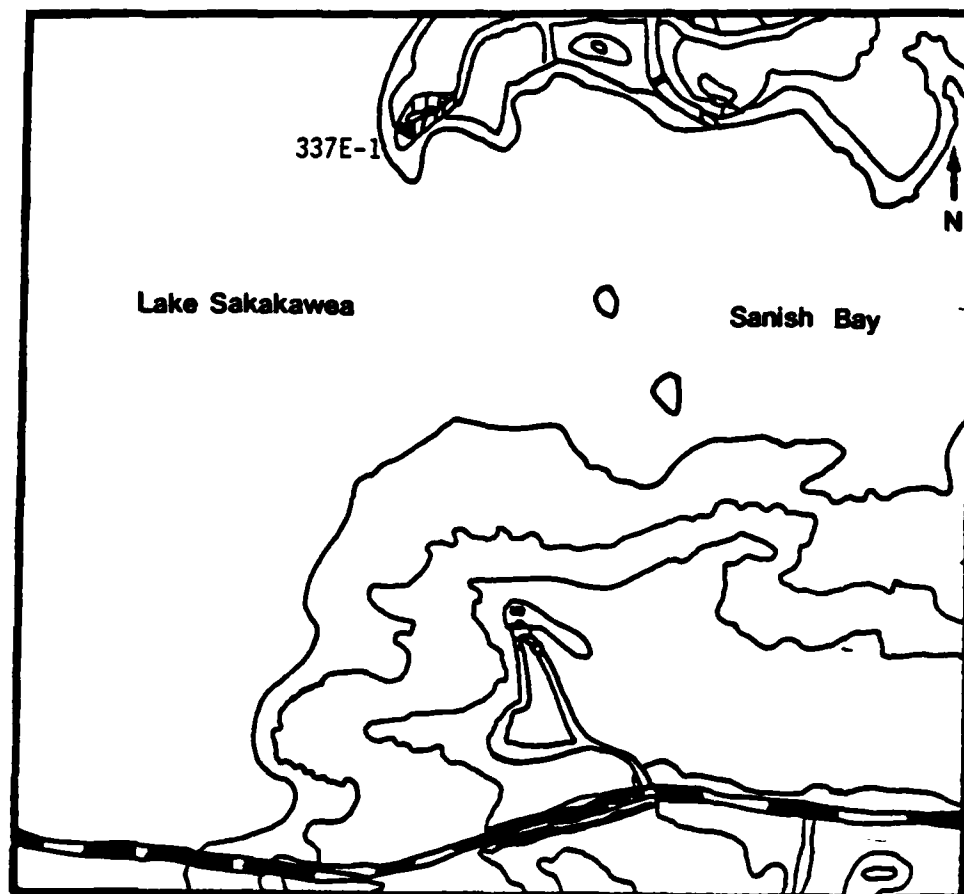
Finally, two invertebrate fossil locations are reported to be in the project vicinity according to the Regional Environmental Assessment Program (REAP). Neither fossil location could be relocated during the 1981 survey and at least one appears to be inundated by Lake Sakakawea.

Cultural Resources

32MN90 NT-1

Site Description. The site consists of a lithic scatter located on a low terrace remnant at the extreme northwest edge of Sanish Bay (Figure 24). A large amount of flaking debris and chipped stone tools were observed in an eroded two-track road at the south end of the terrace. The site was relocated on August 11, 1983, at which time a large amount of cultural material was observed in the eroded road cut. A close examination of the site area indicated that the cultural horizon is present at ca. 50 cm below the normal ground surface. Exposed cutbanks in the site area revealed extensive alluvial gravel lenses but no eroding cultural material. The site area is 1830 sq m. The elevation of the site is 567 m AMSL.

Cultural Material. Artifacts collected during the 1981 inventory consist of one KRF biface fragment, one unifacially retouched quartzite



Map Key:
 Contour line: ~~~~~
 Highway: 
 Historic site: •
 Site: 
 Gravel or dirt road: ==

Figure 24. Map of 32MN90.

flake, one unifacially retouched KRF flake, 30 pieces of unmodified flaking debris, consisting of one petrified wood, two quartzite, 10 KRF, two agate, four brown chalcedony, and one clear chalcedony. No materials were collected during the 1983 revisit.

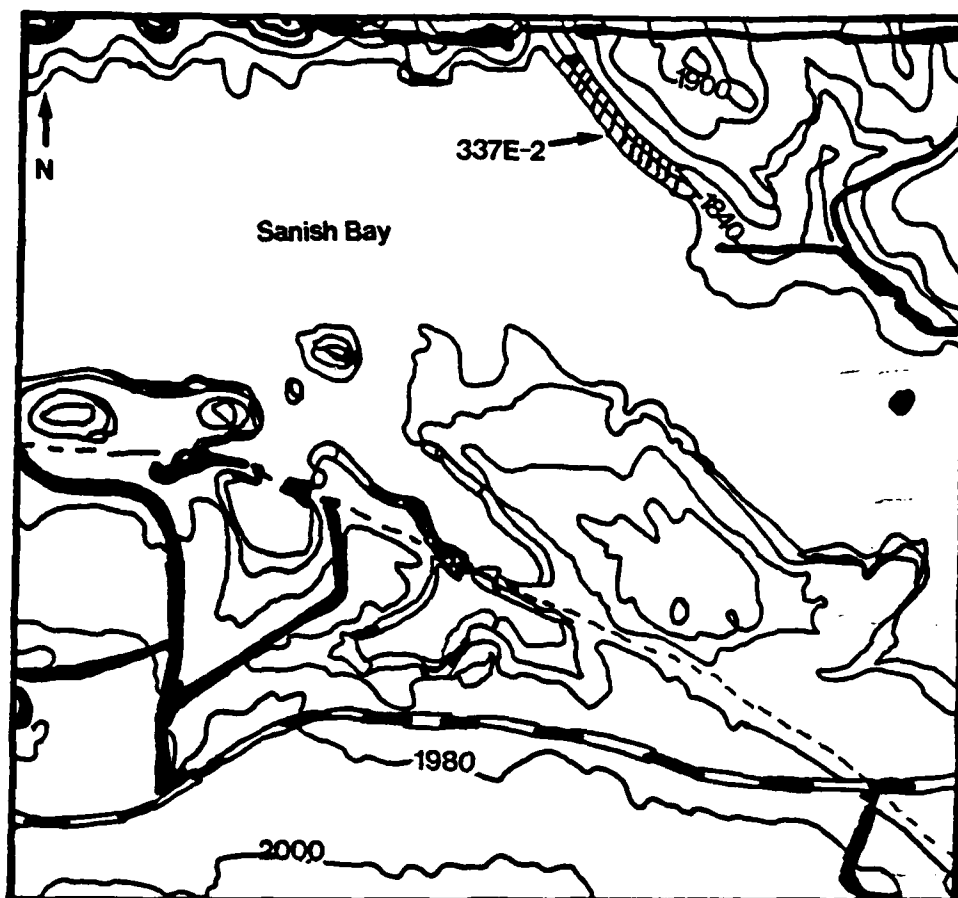
Discussion. Site 32MN90 consists of a lithic scatter with moderate to high artifact density. A wide variety of raw materials are represented and the site appears to contain intact cultural deposits. The site occupies an area approximately 124 m by 60 m, with the south and east sides easily defined by the edge of the terrace and the north and west boundaries defined by the extent of surface material visible in the road cut. The terrace contains good potential for significant cultural deposits. The site cannot be placed within a temporal framework, but several of the collected artifacts are very heavily patinated indicating an age of least 2000 years (cf. Ahler et al. 1981).

Recommendations. The site contains good potential to produce significant cultural material considering the amount of intact soil, the amount of artifacts observed, and the site location (due south of the Moe site). Erosion has impacted an unknown portion of the site and the exposed cutbanks continue to slump into Lake Sakakawea and Sanish Bay. A testing program to evaluate the potential significance of the site in terms of National Register eligibility is recommended. If the testing cannot be conducted within a reasonable period of time (ca. one year), a program of bank stabilization should be undertaken to prohibit future erosional damage.

32MN91 NT-2

Site Description. The site consists of a lithic scatter located on a southwest facing silty clay beach near the east end of Sanish Bay (Figure 25). The site was revisited on August 11, 1983 and was found to be completely underwater. The site area is 3,350 sq m. The elevation of the site is at 563 m AMSL.

Cultural Material. Tools collected during the 1981 inventory include seven KRF end scrapers, one agate end scraper, one KRF side notched projectile point, one KRF biface fragment, and three unifacially retouched flakes (two KRF, one chalcedony). Flaking debris includes one burned piece of Tongue River silicified sediment, two pieces of KRF shatter, three KRF flakes, one agate flake, one quartzite flake, and three chalcedony flakes.



Map key:
 Contour line: ~~~~~
 Highway: **—————**
 Site: **⬭**
 Gravel or dirt road: **—————**
 Oil railroad grade: - - - - -

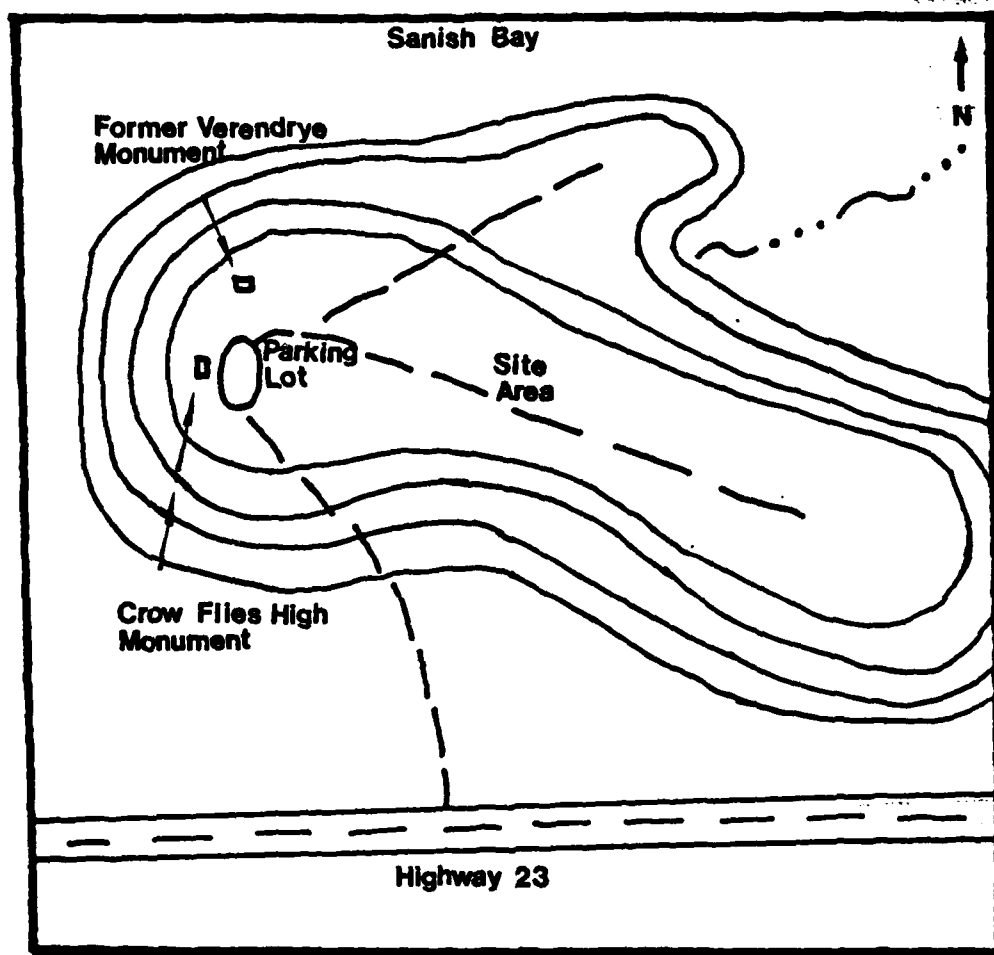
Figure 25. Map of 32MN91.

Discussion. Little can be said about 32MN91 due to the inundation of the site by the waters of Sanish Bay. The site is extremely dense in chipped stone tools which represent a variety of prehistoric functions. The nature of the chipped stone assemblage suggests multipurpose camping activity. The site is identified as Late Prehistoric period based on the recovery of a small side notched projectile point. At the present time it is uncertain whether the site was located in primary context on the beach, or whether the observed material eroded out the adjacent hill side to the east. The former explanation is most plausible considering the topography of the site area.

Recommendations. The potential significance of the site is unknown. If the observed cultural material was in primary context, it may contain additional intact materials. If the site eroded out of the adjacent hillside, intact deposits may yet remain there. A program of National Register testing should be conducted in the beach portion when the pool reservoir level is low enough. The intact hillside to the east of the beach should also be included in the testing. While the site has undoubtedly been impacted by erosion and water inundation, the extent of this damage is unknown.

32MN10 NT-3

Site Description. The site consists of a general debris scatter situated on a large linear hilltop along the southwest side of Sanish Bay (Figure 26). Site designation was originally given to three additional areas on the hilltop; 32MN92, 32MN93, and 32MN94. An isolate, I337E-7, was also identified on the hill. During a revisit to the site area on August 11, 1983, cultural material in the form of KRF flaking debris was observed in the location of all three site areas and on several other portions of the hilltop as well. Several fragmented mammal bones were observed near the southeastern edge of the hill in association with flaking debris. The 1983 observations indicate that the entire hilltop contains a buried cultural horizon. To facilitate efficient cultural resource management, the site numbers 32MN93, 32MN94, and 32MN92 should be eliminated and site number 32MN10 should be used to include the entire hilltop. The area of the site is 44,317 sq m and the elevation is at 640 m AMSL.



Map Key:
 Verendrye monument=□
 Parking lot=○
 Crow Flies High monument=□
 Site area= - - -
 Highway 23= = =

Figure 26. Map of 32MN10.

Cultural Material. The 1981 inventory resulted in the collection of 18 patinated KRF flakes at site 32MN92, eight KRF flakes from site 32MN93, and one body sherd (fine-grained grit temper), one KRF end scraper, one KRF bifacially retouched flake, six KRF flakes, and one agate flake from 32MN94. No cultural material was collected during the 1983 revisit.

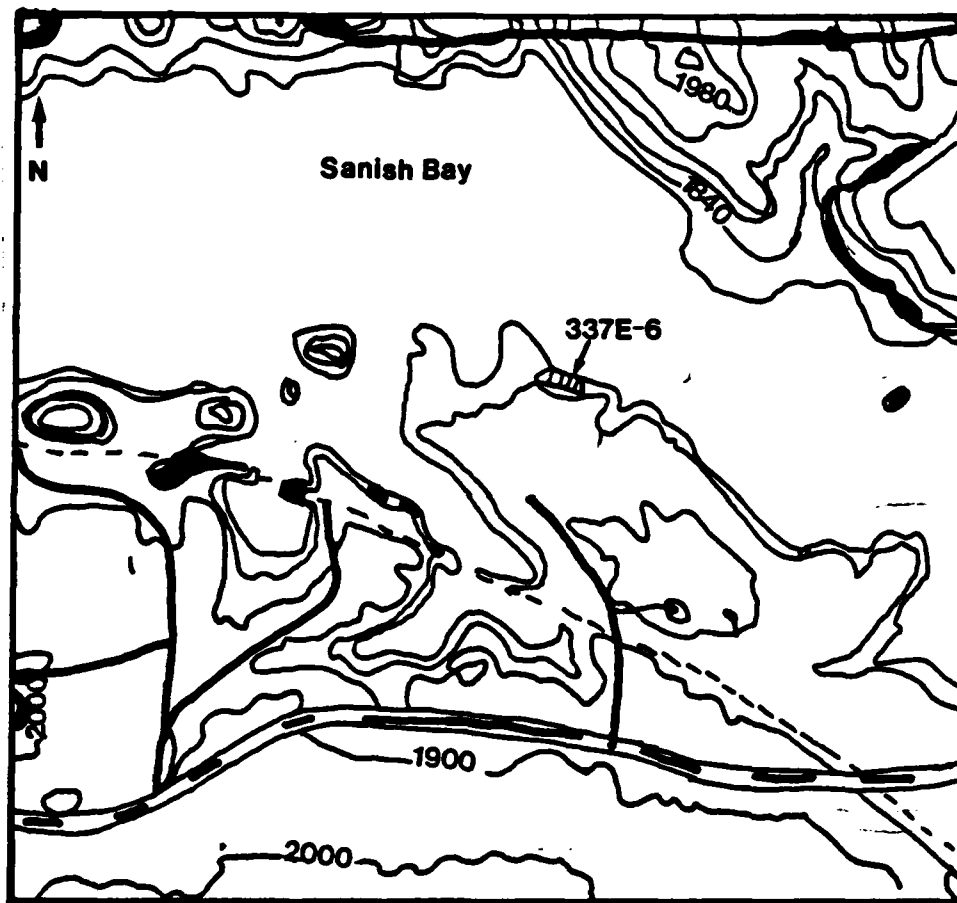
Discussion. The newly amended site, 32MN10, contains flaking debris, pottery, and animal bone, distributed from the west end of the hilltop (near Crow Flies High monument) to the extreme southeastern end. The presence of previously designated sites 32MN93, at the north end of the hill, 32MN94, in the middle portion, and 32MN92, at the west end, add credence to the designation of the entire hilltop as one site. The site exhibits evidence of occupation during the Late Prehistoric period, but may contain more than one cultural component. The site is quite large, 44,000 sq m, and appears relatively undisturbed. The entire top of the hill is covered with dense native grasses making surface visibility minimal. Intact soils remain on most of the hilltop.

Recommendations. Site 32MN10 may be potentially eligible to the National Register. A formal testing program would have to be undertaken before final evaluation. The site is very large, contains intact and subsurface cultural materials, and has been subjected to minimal disturbance. A testing program should be initiated which systematically investigates the entire hilltop. The purpose of the formal testing would be to obtain data concerning the temporal affiliation of the site deposits and its ability to yield paleo-environmental cultural information.

32MN95 NT-6

Site Description. The site consists of a lithic scatter located on a north facing silt beach along the south side of Sanish Bay (Figure 27). The site was relocated on August 11, 1983, and was found to be completely underwater. The site area is 350 sq m. The elevation of the site is 560 m AMSL.

Cultural Material. Artifacts collected include one KRF projectile point base, 10 KRF flakes, and two brown chalcedony flakes. The projectile point base was representative of the Archaic tradition, and is



Map Key:
 Contour line=~~~~~
 Highway=—————
 Site=◻
 Gravel or dirt road=—————
 Old railroad grade= - - - -

Figure 27. Map of 32MN95.

likely of the McKean complex. Conclusive identification was not possible given the fragmentary nature of the specimen. No cultural material was observed during the 1983 revisit.

Discussion. Little can be said about the context, size, and function of site 32MN95, due to inundation. The site size is largely undetermined, but has been estimated at 350 square m. The single projectile base recovered indicates occupation during the Middle Plains Archaic. The site has undoubtedly been impacted by wave action and inundation. The extent of this impact has not been established. The site area does not contain an adjacent eroding cutbank, which suggests that the site is situated at, or near, its original location.

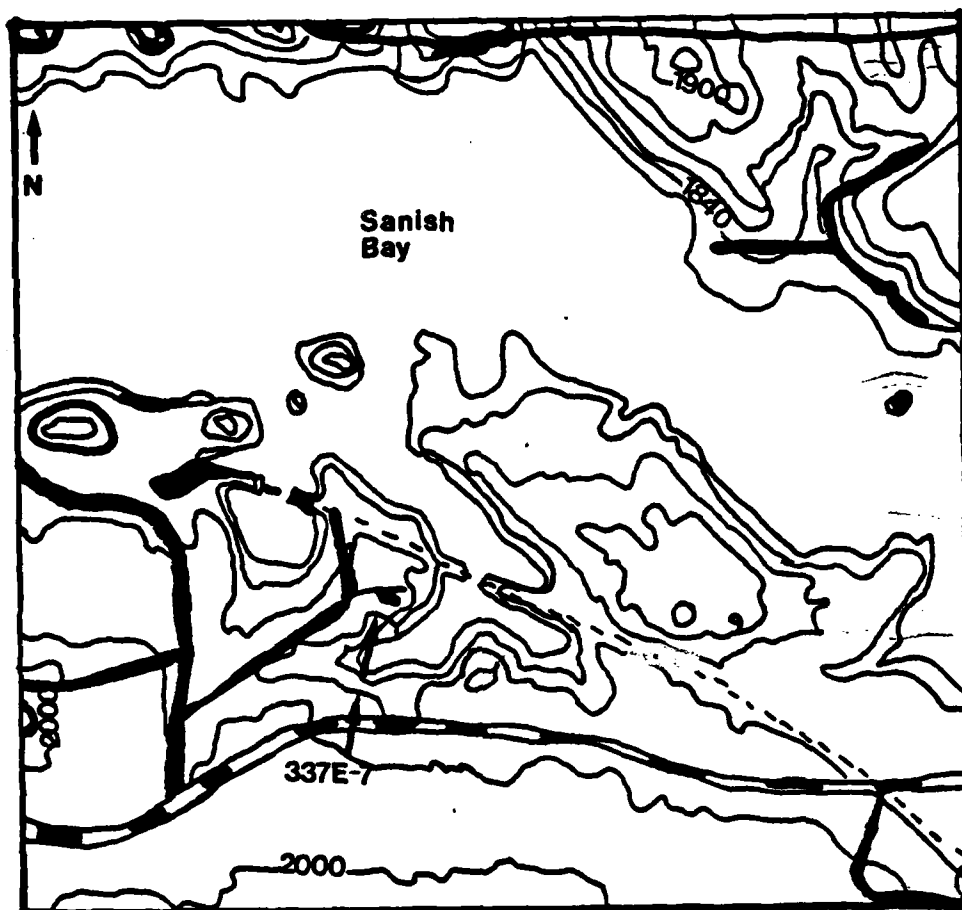
Recommendations. Site 32MN95 should be tested for potential eligibility to the National Register. This testing should be conducted on the beach area when the pool reservoir level is sufficiently low. The relatively flat portion of the terrace to the south of the site should also be included in the testing program.

32MN96 NT-7

Site Description. The site consists of a small lithic scatter located on top of a small knoll east of the marina, along a south extending arm of Sanish Bay (Figure 28). Cultural material was observed in deflated areas on the knoll top and in a small two-track road. The site was relocated on August 11, 1983. At that time one KRF flake was observed in the small deflated area on the knoll top. The area of the site is 150 sq m and the elevation is at 566 m AMSL.

Cultural Material. Artifacts collected during the 1981 inventory include eight KRF flakes, one burnt KRF piece of shatter, and one brown chalcedony flake. No cultural material was collected during the 1983 revisit.

Discussion. Site 32MN96 represents a sparse lithic scatter of unknown cultural and temporal affiliation. The observed cultural material reflects flintknapping activities. No evidence is available that the site functioned as a temporary camp. The site appears limited to the small knoll and is approximately 150 square m in size. The site is largely undisturbed, except by limited wind deflation, and does not appear to be threatened at the present time.



Map Key:
 Contour line= 
 Highway= 
 Site= 
 Gravel or dirt road= 
 Old railroad grade= - - -

Figure 28. Map of 32MN96.

Recommendations. The site should be tested for National Register eligibility with testing limited to the knoll area. The site appears to contain intact soil deposits and may have buried cultural resources.

32MN97 NT-8

Site Description. The site consists of a small lithic scatter, located on a gentle slope along the southwest side of peninsula-like terrace (Figure 29). Cultural material in the form of chipped stone flaking debris was observed on an eroded two-track road. The site was relocated on August 11, 1983, and three flakes were observed in a small portion of the road. The site area is 400 sq m and the elevation is at 567 m AMSL.

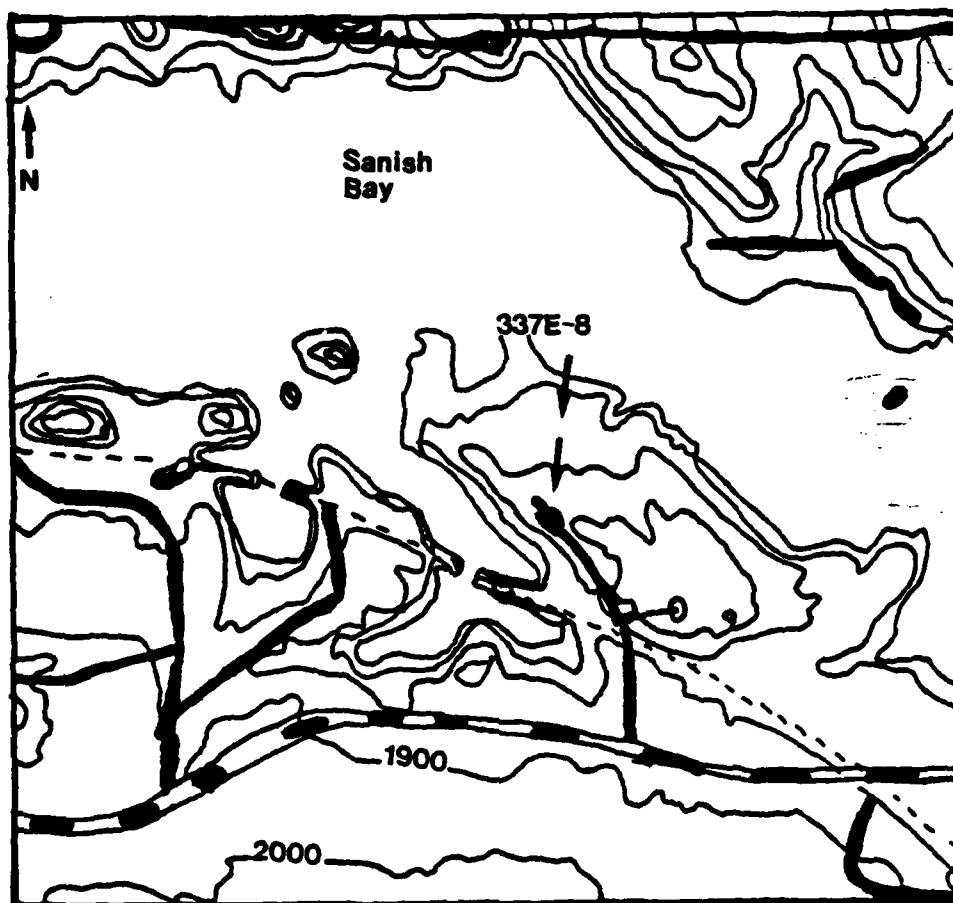
Cultural Material. Artifacts recovered during the 1981 inventory include three utilized KRF flakes, four KRF flakes, two brown chalcedony flakes, and one clear chalcedony flake. No material was collected during the 1983 revisit.

Discussion. Site 32MN97 appears to represent a short term flint-knapping loci, the temporal affiliation of which is unknown. The site boundaries have been determined by the extent of material visible in the road cut and are also limited by topographic features (i.e., water on the southwest, hillslope on the northeast). The site may contain additional buried cultural materials as the site area exhibits intact soil deposits.

Recommendations. The site may contain significant cultural materials. The site covers a spatially confined area and is situated on a slight slope. Soils appear to be colluvial and aeolian, and the site integrity may have been compromised due to slope wash and/or wave action. The site should be tested to recover information on site context, extent, and potential eligibility to the National Register.

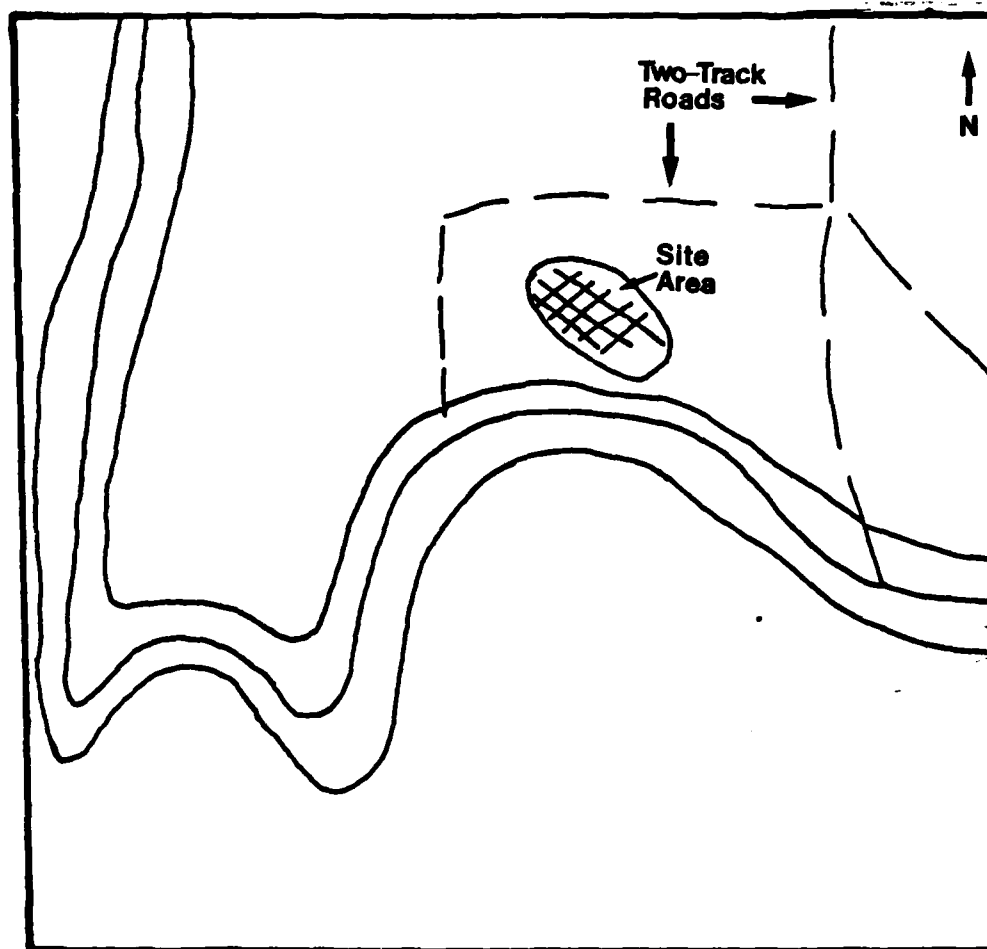
32MN100

Site Description. This site was originally designated as an isolate (i337E-4) during the 1981 inventory (Figure 30). Four flakes were observed in a two-track road on a small knoll along the north side of Sanish Bay. Cultural material observed in a context which may contain intact deposits is usually designated as a site rather than an



Map Key:
 Contour line=~~~~~
 Highway=—————
 Site=●
 Gravel or dirt road=———
 Old railroad grade=- - - -

Figure 29. Map of 32MN97.



Map Key:
Two-track roads = - /
Site area = 

Figure 30. Map of 32MN100.

isolate. The four observed flakes were located in primary context on a small knoll which may contain substantial intact soil and additional buried cultural resources. The area has consequently been given full site designation. The area of the site is 105 sq m. The site elevation is 560 m AMSL.

Cultural Material. Material collected from the site consists of two heavily patinated KRF flakes, one piece of KRF shatter, and one unifacially retouched KRF flake.

Discussion. The artifacts were observed in an area limited to 10 m x 10 m, which encompasses most of the small knoll top. The site reflects flintknapping activity, testing may reveal additional functions. The lack of temporally diagnostic tools at this time prohibits temporal assignment.

Recommendations. The site should be tested to determine eligibility to the National Register of Historic Places.

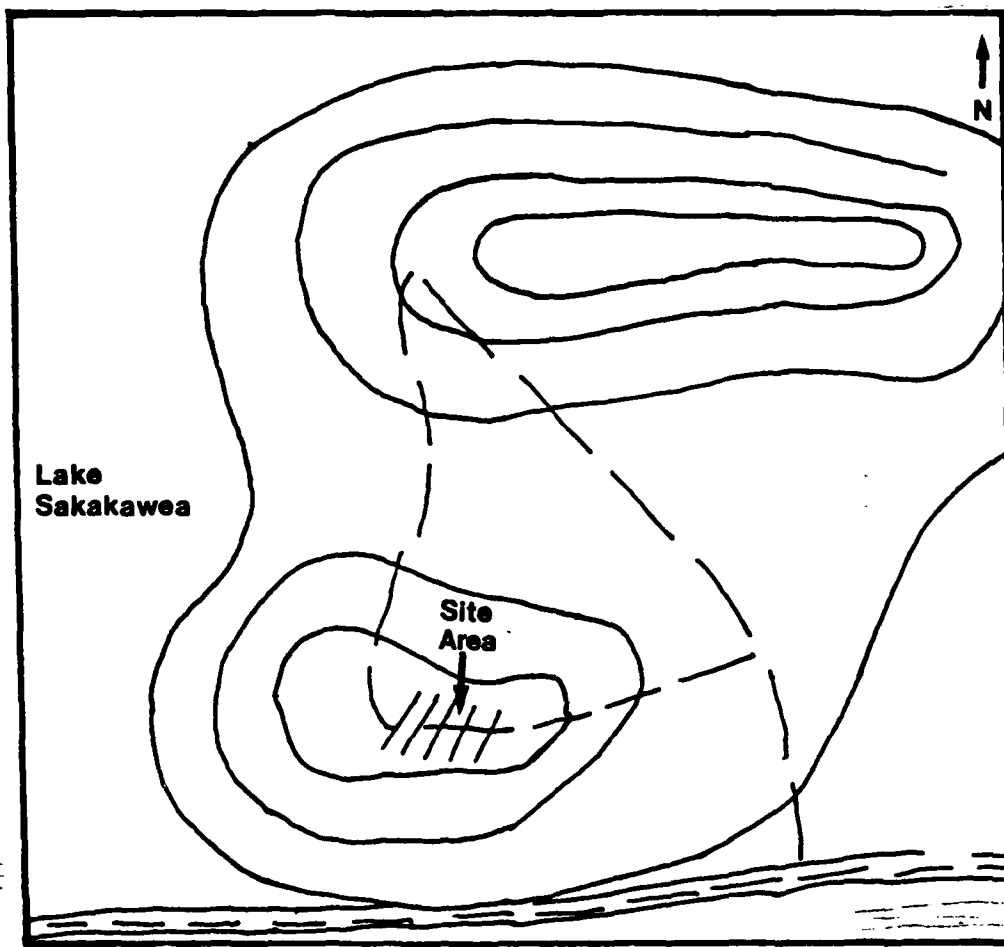
32MN153

Site Description. The site was originally recorded as an isolate, i337E-6, located in a two-track road on a small ridge top south of the site 32MN10 (Figure 31). The isolate designation is eliminated and the area is now recorded as a site due to the context of the recovered cultural material. Four flakes were observed in an area of good soil development which contains the potential for buried cultural materials. The fact that the flakes observed were in an eroded two-track road indicates that the site is buried. The site area is 30 sq m and the elevation is at 630 m AMSL.

Cultural Material. Materials collected in 1981 consist of two KRF flakes and two clear chalcedony flakes.

Discussion. Little can be said concerning the site temporal affiliation or function. The presence of flaking debris indicates flintknapping activity, additional functions may become evident upon test excavation. The site size is largely undetermined due to limited site visibility. Being situated on a ridge top, the site may be fairly large (i.e., covering the entire ridge apex).

Recommendation. The site should be tested for potential eligibility to the National Register. It appears to contain intact soil and



Map Key:
Site area= / / /

Figure 31. Map of 32MN153.

cultural deposits, and is largely undisturbed. Subsurface testing would be necessary to define the site vertical and horizontal extent and content.

Isolates

1. A single KRF end scraper was collected from a trail which was located on a terrace overlooking the lake.
2. A tertiary KRF flake was recovered along the beach line.
3. Three lithic items were recovered from a location along the beach line. These included one lightly patinated KRF tertiary flake, one worked KRF flake, and one KRF flake side scraper.
4. Three flakes were collected from a trail in the slope of a hill south of Crow-Flies High butte. These included two KRF tertiary flakes, one of which was heavily patinated, and one clear chalcedony thinning flake.
5. Two secondary flakes of KRF were collected from a trail southwest of the New Town Public Use Area.
6. From a beach length facing Sanish Bay, five lithic items were recovered. Among these were two KRF and one clear chalcedony shatter flakes, one worked KRF flake, and one KRF thinning flake which was heavily patinated.
7. Two KRF thinning flakes were collected in a cow trail on the side of a small terrace west of the New Town Public Use Area.
8. A lightly patinated KRF secondary chunk was recovered from a trail running along the top of a small ridge.
9. One heavily patinated KRF thinning flake and one worked KRF flake were recovered on the southward tapering slope of a small hill.

Summary

A total of 12 cultural resource locations were located from the results of the literature search (Table 10). Six of these sites (32MN4, 32MN17, 32MN202, 32MN203, 32MN232, and 32MN233) all are recorded as exhibiting evidence of occupation by prehistoric and in some cases historic (32MN4) peoples. All of these occupation sites are located north of the survey tract and consequently will not require further

Table 10. Summary of previously recorded cultural resources for the New Town survey tract.

Site Number	Site type/temporal affiliation	Comments
32MN4*	Prehistoric-Historic, occupation site, pottery, flint chips, lead bullets, broken bone	north of survey tract, no further work
32MN17*	Prehistoric occupation site, pottery, worked flint, faunal bone, obsidian chips	north of survey tract, inundated, no further work
32MN202*	Prehistoric occupation site, bison bone, flint chips and tools	north of survey tract, no further work
32MN203*	Prehistoric, occupation site, bison bone, KRF.	north of survey tract, no further work
32MN232*	Prehistoric, lithic scatter, worked flint	north of survey tract, no further work
32MN233*	Prehistoric campsite, KRF flakes, tools, quartzite shatter	north of survey tract, no further work
location	Invertebrate fossil, Paleontological (REAP)	could not be relocated
location*	Invertebrate fossil, Paleontological (REAP)	inundated beyond survey tract
32MN101*	Prehistoric, the Moe site, Paleo-Indian through Historic components	previously investigated, eroded and inundated, north of survey tract
32MN10	Prehistoric lithic scatter worked lithic material	within survey tract

*beyond present survey boundaries

action as part of the present project. Of the remaining six sites identified from the literature search two are invertebrate fossil locations, which are paleontological sites and were located as part of the REAP program. One is inundated and is beyond the survey tract while the other could not be relocated in the field. The Moe Site (32MN101) is north of the survey tract. This highly significant site has been previously investigated. It is highly eroded and largely inundated. It does not need to be dealt with as part of the present project as it is beyond the survey boundaries. The remaining three cultural resource locations are within the survey tract and will need further consideration as part of the New Town Area cultural resource management plan. One of these is a monument location in honor of Crow-flies-High. Formerly a monument to the Verendrye expedition was located on the same hill, but has been declassified and removed. The monument location does not face any immediate impacts so no further consideration need be given it at this time. The old Sanish Townsite is located within the bay, foundations are visible at low pool level. Prehistoric site 32MN10 is a lithic scatter which is within the survey tract. This site and the Sanish townsite are further discussed under the field results summary.

A total of nine cultural resource locations were located during the fieldwork portion of the project in the New Town area (Table 11). Of these two (32MN10 and the old Sanish townsite) had been previously identified from the literature search. The sites listed on Table 11 do need further consideration as part of the cultural resource management program for the New Town Area. The sites were considered in terms of potential to yield important data on prehistoric and historic lifeways, integrity of the deposits, adverse impacts which have affected the sites and potential impacts. The cultural resource sites may then be prioritized in terms of the cultural resource management plan for the New Town area. The results are given below and are relative to the known cultural resources of the New Town Area survey tract.

- 1) 32MN90 is a prehistoric site which exhibits a moderate to high density of lithic debris dated at ca. 2000 B.P. The site is subject to active erosion into Sanish Bay. The site should be tested in the near future to establish the quantity and quality of subsurface materials, identify components, and to establish whether further excavation would

Table 11. Summary of newly recorded cultural resources for the New Town survey tract.

Site Number	Site type/temporal Affiliation	Comments	Recommendations
32MN90	Prehistoric lithic scatter ca. 2000 B.P.	moderate to high density of lithic debris	erosion of cutbanks into Sanish Bay, bank stabilization, testing
32MN91	lithic scatter, Prehistoric Late Prehistoric period	dense lithic concentration	inundated except at low pool, testing
32MN10	Prehistoric, general debris scatter	located on hill-top, intact deposits	little direct impact, NR testing
32MN95	Prehistoric, lithic scatter, Archaic tradition	located near terrace	inundated at low pool, NR eligibility
32MN96	Prehistoric, lithic scatter	small area, sparse material	no immediate impact, NR testing
32MN100	Prehistoric lithic scatter	small area, flintknapping	no immediate impact, NR testing
32MN153	Prehistoric, lithic scatter	large area, flintknapping	no immediate impact, NR testing
Sanish townsite	Historic townsite	foundations visible at low pool	photograph at low pool, historic research

yield significant information concerning prehistoric lifeways in this area of the Missouri River Trench. The results of the testing program would indicate whether further investigation or preservation of the site through bank stabilization were warranted. Should the testing results prove negative, then the site could be dropped from the priority list and no further action would be necessary.

2) 32MN91 is a prehistoric lithic scatter which exhibits evidence of a Late Prehistoric period occupation. The lithic concentration at this site was quite dense. The site location is inundated except at low pool level. Testing of the site to establish its formal and functional aspects and significance of the deposits should be scheduled for a year or season when the pool level of the lake is exceptionally low to allow access to the site. Results of the testing would permit cultural resource management decisions as to whether further investigations at the site would prove productive or not.

3) 32MN95 is a prehistoric lithic scatter which exhibits evidence of Archaic tradition use of the site. The site is located near a terrace and is usually inundated. The site is recommended for testing to determine the significance of the deposits and whether further investigations to recover the data would be warranted. This testing would need to be scheduled for a year and season of exceptionally low pool level for the lake in order to allow access to the otherwise inundated site area.

4) 32MN97 is a prehistoric lithic scatter site which may have been a short term flint knapping location. The site is subject to some erosion but has intact soil remaining. The erosional impact is not as severe nor as immediate as at the previous sites. The site should be tested at some future time to assess the components of the deposits and the functional use of the site area. The testing results may then be used to determine whether the site deposits should be mitigated or preserved or whether no further work is warranted at the site. Should the latter be the case the site may then be dropped from the priority list.

5) 32MN10 is a prehistoric general debris scatter which is located on a hilltop. Intact soil deposits are present. The site is not subject to direct or immediate impacts, therefore testing may be

scheduled for some future time. The testing results would indicate the number and nature of the components present and the kinds of data which could be recovered through mitigation. Since the site is a general debris scatter it is likely to yield different information than 32MN97 which was a lithic scatter. The testing results could be used to plan for mitigation or protection of the site deposits should the results indicate significant deposits. On the other hand, if the testing results are negative, then no further investigation of the site is warranted.

6) 32MN100 is a prehistoric lithic scatter which encompasses a small area where flintknapping activities took place. The site is not subject to any immediate impacts and so may be tested at some future time. Testing should identify the kinds and number of components and further delineate the information the site could yield concerning interpretation of prehistoric use of the study area. Plans could then be made for further investigation or protection of the site deposits. Should testing results prove negative, the site could then be dropped from the priority list for the study area.

7) 32MN153 is a prehistoric lithic scatter which covered a large area and exhibits evidence of flint knapping activities. The site is not subject to any immediate impacts and consequently testing may be scheduled for some time in the future. Testing for the site would include delineation of the vertical and horizontal extent of the site as well as the number and kinds of components present. Testing results would provide necessary information to aid in cultural resource management decision making for the site. Should the site results indicate that the site contains deposits significant in terms of interpreting prehistoric lifeways in the study area, plans may be made to mitigate the deposits through excavation or to preserve them. Should testing indicate that the deposits are not significant then the site would require no further work and may be dropped from the priority list.

8) 32MN96 is a prehistoric lithic scatter which encompasses a relatively small area and exhibits a sparse material scatter. The site is not subject to any immediate impacts and so may be tested at some future point. Although the site is relatively small and sparse it may contain significant information concerning lithic reduction and other

site activities. Testing performed at the site would gather data necessary to evaluate the subsurface components in terms of temporal and formal aspects. Results of the testing program would facilitate cultural resource management decision making. Should the site contain significant deposits then plans could be made to excavate the deposits to retrieve the data or to protect the site. Should the testing results prove to be negative, then no further investigations would be warranted and the site could be dropped from the priority list.

9) Sanish townsite is a historic site which is presently inundated by Lake Sakakawea. The townsite location is beyond the designated boundaries of the survey. The foundations of some buildings were visible at low pool level. Historical research is recommended at some further point for the townsite. County or state archives likely contain plats of the town layout and information concerning inhabitants. The Corps of Engineers files probably contain information concerning the town also, as it was one in which the inhabitants were relocated in preparation for the inundation of Lake Sakakawea. It is recommended that on a year or season of unusually low pool level for the lake, that the physical remains of the townsite be photographed to complete documentation of the physical remains. Although this site is beyond the present survey boundaries, it is encircled by the survey tract which covers both the north and south shorelines of the bay. The Sanish townsite represents the major historic period site of this survey tract and it is recommended that at some future time historic research be performed to gather and synthesize data available on the townsite to complete the documentation of the Prehistoric and Historic cultural sequence at this study area.

VAN HOOK AREA

Introduction

The Van Hook area is located on a flat portion of land along the north shore of the Van Hook Arm of Lake Sakakawea (Figure 32). The topography is low relief grassland which terminates at the shoreline of the lake. Cultivated fields are located adjacent to the study area. Glaciation during the Wisconsin was responsible for forming the present landscape, which contains scattered glacial till and glacial features such as ground moraines. A permanent drainage, Shell Creek, flows into the Van Hook Arm east of the study area. The Van Hook Arm is a branch of Lake Sakakawea formed by the inundation of a broad, shallow valley formed by runoff from several south and west flowing creeks. Present land use includes nearby farming and ranching with extensive recreational utilization of the immediate study area for boating, fishing, and swimming.

Previous Investigations

Two sites recorded by Thad Hecker (1938) are reported to be located near the Van Hook study area. No site numbers were assigned to the sites, which are located in Section 9 and Section 32, T152N, R91W. Both sites are outside of the project area and require no additional work under the present project.

Cultural Resources

No prehistoric cultural resources were located in the Van Hook area. This paucity of material can be explained by the relative lack of natural resources available in the area (no nearby water sources prehistorically, etc.). The relatively featureless topography is also not particularly favorable to prehistoric site location. The old Van Hook townsite is located outside of the survey area in Section 32 to the east.

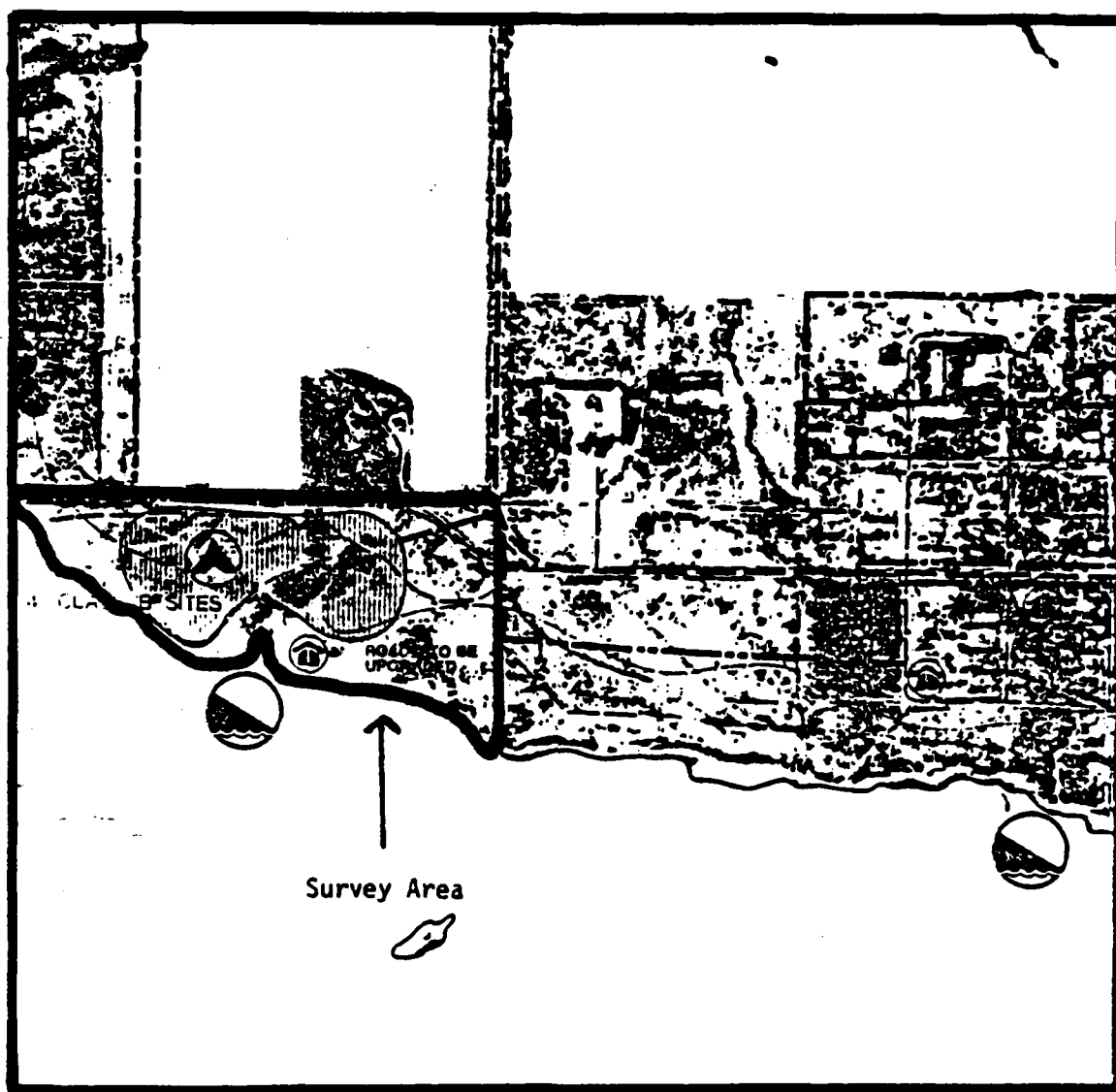


Figure 32. Van Hook area.

Summary

Three cultural resource locations were documented from the Van Hook area survey tract, however all are beyond the present survey boundaries. No cultural resources were recorded within the actual survey tract.

Of the three sites adjacent to the study area (Table 12), two are prehistoric campsites reported by Hecker (1938). The third site was located in the field but is beyond the survey boundaries. This site is historic and is the remains of the Van Hook townsite. Foundations and some standing structures are present. This latter site is the largest and most significant historic site in the immediate study area vicinity. It is recommended that at some future point the townsite should be thoroughly documented through photography, mapping, and historic research. The results of such an investigation would contribute to the historical portion of the cultural sequence for delineating a Van Hook study area.

As no cultural resources are present in the Van Hook study area there are no recommendations for the immediate study area. The Van Hook townsite has been recorded by the Corps Archeologist at Riverdale and a site form completed. The site need not be dealt with as part of the Van Hook tract cultural resource management plan however it should be taken into consideration within the plan for the area in which it is located.

Table 12. Summary of previously recorded sites for the Van Hook Area survey tract.

Site Number	Site type/temporal affiliation	Comments
location*	Prehistoric campsite (Hecker 1938)	beyond survey tract
location*	Prehistoric campsite (Hecker 1938)	beyond survey tract
VanHook townsite*	Historic townsite	relocated during field- work, adjacent to survey area, foundations and some standing structures present

*Beyond present survey tract boundaries.

PARSHALL BAY AREA

Introduction

The Parshall Bay recreation area is located on the south shore of Parshall Bay, which extends east from the Van Hook Arm of Lake Sakakawea (Figure 33). Parshall Bay was formed by the inundation of the mouth of the East Fork of Shell Creek. The topography of the study area is low relief grassland. Like the Van Hook area, Parshall Bay topography was formed during the Wisconsin glaciation. Soils in the area are primarily incipient, formed by weathering bedrock and glacial till. Some alluvial deposition is present along the floodplain of the East Fork of Shell Creek, as evident by several low terraces present in the survey area. Previous land use in the area included homesteading, ranching, and travel along the East Fork of Shell Creek to and from the Missouri River. Present land use includes farming (fields adjacent to the study area), recreation, and wildlife management.

Previous Investigations

No previous archeological or historical investigations were noted for the Parshall Bay area. In addition, no previously recorded sites are present.

Cultural Resources

32MN98 PB-1

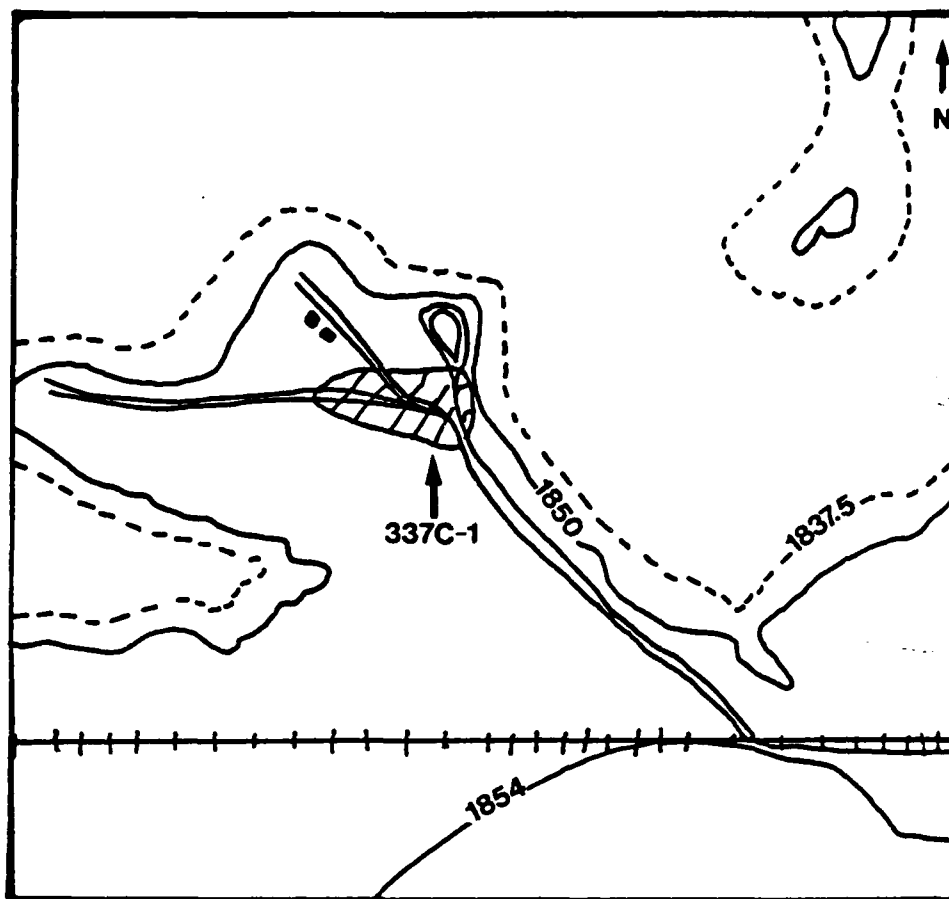
Site Description. The site consists of a lithic scatter located in the Parshall Bay picnic area (Figure 34). It is situated on a flat terrace overlooking the bay. Cultural material was observed in an unimproved road.

Cultural Material. Artifacts collected during the 1981 inventory consist of two KRF bifaces, one unifacially retouched KRF flake, one KRF piece of shatter, and four KRF flakes.

Discussion. Site 32MN98 consists of a predominantly buried lithic scatter, visible only in an eroded portion of a flat, intact terrace.



Figure 33. Parshall Bay area.



Map Key:
 Contour line=
 Site area=
 Section line=
 Low water line=
 Rest rooms=
 Road=

Figure 34. Map of 32MN98.

The presence of tools suggests more activity than simple flintknapping. The lack of surface diagnostics prohibits cultural and temporal placement. The site is estimated at 3600 square m in size, based on the extent of the surface materials and the size of the small terrace. The site exhibits good potential for intact, possibly significant, cultural resources.

Recommendation. The site is relatively undisturbed and largely unthreatened at the present time. A program of subsurface testing should be conducted to assess the site for National Register eligibility. The testing should be conducted throughout the entire terrace area.

Isolate

1. A single patinated KRF flake was collected from the SW $\frac{1}{4}$ of Section 2, T151N, R91W. No further work is recommended for the area.

Summary

One cultural resource location is reported for the Parshall Bay area survey tract (Table 13). It was located during fieldwork, since no previously recorded sites were reported for this particular tract as part of the literature search.

Since the site is the only one recorded for the survey tract, it is the only priority for the cultural resource management plan for the Parshall Bay survey tract.

- 1) 32MN98 is a prehistoric lithic scatter which is located on a terrace. The site is not subject to immediate erosion from Lake Sakakawea, however it is located within a picnic area. Since the site area receives heavy recreational use it is likely that some collection of surface materials has occurred. Also the construction of facilities for the picnic area has caused some impact to the site. It is recommended that the site be tested to determine the significance and vertical as well as horizontal extent of the components. Should the testing indicate that the site contains significant deposits then plans should be made to either excavate the deposits to recover the data or to protect the site from further disturbance. Should testing results indicate that the site deposits are not significant, then no further

Table 13. Summary of newly recorded cultural resources for the Parshall Bay Area survey tract.

Site Number	Site type/temporal affiliation	Comments	Recommendations
32MN98	Prehistoric lithic scatter	located in picnic area, relatively undisturbed	NR testing of site and terrace

Note: No previously recorded sites were on record for this survey tract.

work is warranted at the site and the site may be dropped from the priority list.

MCKENZIE BAY AREA

Introduction

McKenzie Bay recreation area is situated along the north shoreline of Lake Sakakawea, Little Missouri River branch, in northern Dunn County (Figure 35). Lake Sakakawea at this point consists of a huge bay formed by the inundation of the mouth of the Little Missouri River. The western portion of the study area is bordered by Hidatsa Bay, an inundated intermittent creek. A second small bay is situated in the center of the study area. The topography is a combination of moderately eroded badlands, inundated floodplain, and grass covered hills. Being near the eastern end of the Little Missouri River drainage, the general physiography is that of dissected uplands, cut by slopewash and headward erosion of Little Missouri tributaries. Exposed clays, sandstones, shales and lignites of the Fort Union Group are visible throughout the area. Many of the uplands and high terraces are covered by a mantle of aeolian sediment analogous to the Oahe formation. Other soils in the area are both colluvial and alluvial in origin. Extensive alluvial gravels are visible in a gravel quarry near site 32DU297, illustrating the extent of previous alluvial deposition. Numerous natural cobbles and pebbles of Knife River flint are deposited along the shoreline in several areas in McKenzie Bay study area. The flint is the result of extensive badlands erosion, which removed the material from primary and secondary settings upstream and redeposited it downstream, accumulating near the Little Missouri mouth (cf. Kuehn 1982).

Previous land use in the study area is heavily centered around the Little Missouri River travel route and natural resource exploitation. For instance, Plains Village groups made seasonal trips along the Little Missouri, leaving their villages on the Missouri to hunt and trap eagles (Bowers 1948:164-166). Ethnographic evidence suggests that small Mandan groups traveled the entire length of the Little Missouri to winter in northeastern Wyoming (Bowers 1948:164-166). Lewis and Clark camped at the mouth of the Little Missouri River on April 12, 1805 (Reid 1947-45:214). The area continued to serve as a travel route during the fur trade and military periods. Today the study area is almost ex-

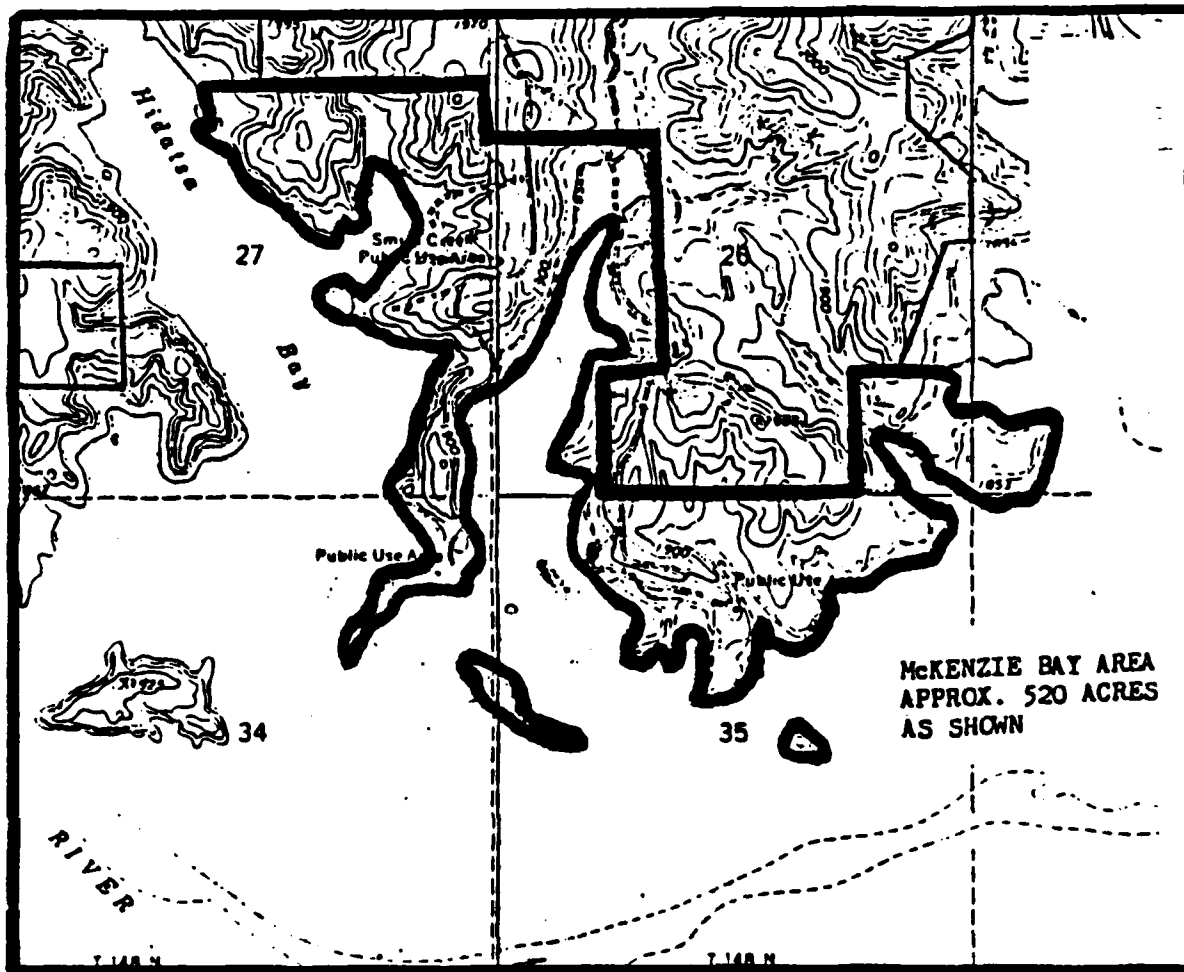


Figure 35. McKenzie Bay area.

clusively used for recreation as numerous trailers and cabins line the shoreline. The area also contains a small concession stand and marina. Adjacent land belongs to the Three Affiliated Tribes and is used primarily for cattle ranching.

Previous Investigations

Site 32DU16, recorded as an occupation and workshop site by Metcalf on September 25, 1950, is located in Section 26, T148N, R92W. The site is perennially inundated by Lake Sakakawea. It is located beyond the boundaries of the survey tract.

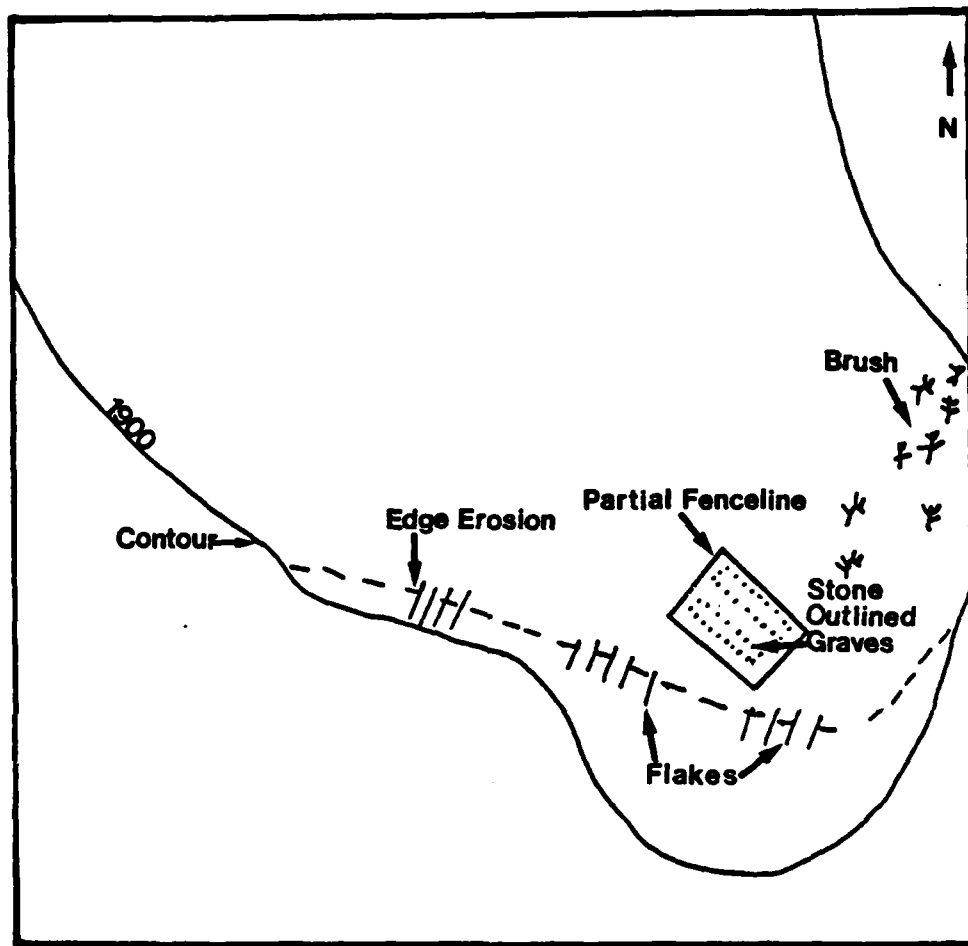
Cultural Resources

32DU295 MB-1

Site Description. The site consists of two stone outlined historic graves surrounded by a broken fence and a sparse lithic scatter located on top of a small ridge between Hidatsa Bay and an unnamed bay (Figure 36). The graves are situated near the southern terminus of the ridge, but are as yet undisturbed. Six flakes were observed eroding out of the southern edge of the ridge indicating a prehistoric component. The flakes were observed during a revisit to the site on August 9, 1983. The site area is 300 sq m. The elevation of the site is 579 m AMSL.

A deed search was performed for 32DU295 at the Dunn County Courthouse, Manning, ND., by Arleyn Simon. The Dunn County records had nothing recorded for the section since it is on the Fort Berthold Indian Reservation even though it is in Dunn County. The deed search was continued at the Bureau of Indian Affairs Office at New Town, ND. The BIA Office was most cooperative in aiding the research. Through the tract record it was possible to identify the persons to whom the original allotment had been made and who their heirs have been. These records also referenced other documents concerning legal transactions, affidavits and records of marriage and death certificates. The investigation results are given below.

The first transaction on the record for this quarter of land was a secretarial order from the Secretary of the Interior regarding the coal



Map Key:
 Contour line=—
 Edge erosion=---
 Partial fenceline=□
 Flakes=|---H
 Stone outlined graves=...
 Brush=x x x

Figure 36. Map of 32DU295.

land classification of the tract (Document No. 5424910 July 19, 1913). On November 29, 1915 Tract No. 802A (292.61 acres) was allotted according to the Allotment schedule to Walks. On the same date Tract No. 803A (310.23 acres) was allotted to his wife Panther Woman. The trust patent was issued to Panther Woman on Tract No. 803A on October 9, 1916, and a second trust patent was issued on the same tract to the same person on June 21, 1919.

Tract No. 803A went through probate on October 22, 1927. Through this proceeding the lands were transferred from Panther Woman (grantor - Indian) to the following persons (grantees - Indian): Walks, Mrs. George Parshall, Mrs. Ernest Black Hawk, Robert Walks, Mrs. Charles Good Bird, and Ralph Walks. The land then continues within these families with heirs listed in updates every few years until October 29, 1949 when the entire section was transferred through a Declaration of Taking to the Three Affiliated Tribes et al. This transfer means the property is under jurisdiction of the Tribal Government but still retains individual interest in ownership. As part of the Garrison Dam project the land became administered by the U.S. Corps of Engineers and has consequently become part of the McKenzie Bay recreation area.

Panther Woman, the primary allotment holder for the land on which the site is located, was the daughter of Clam Necklace (father) and Medicine in Woods (Mother). She was born in 1865 and lived to be 62 years old. She died on July 17, 1927 of acute yellow atrophy of the liver. Burial was the same day. The death certificate (located in the 106 file under the probate action which took place on October 22, 1927) states that the burial took place on the same day as her death and that the place of burial was the Little Missouri District.

Panther Woman had been married twice prior to her marriage to Walks. Her husband at the time the allotments were made was Walks and it is the children from this marriage who were identified as heirs to the allotment (these names have been listed under the probate proceedings previously summarized).

A census record search was performed at the North Dakota Heritage Center for the Panther Woman and Walks family by Sally Montgomery Dockter. The records for the years of 1903 through 1936 for the Fort Berthold Reservation were checked. In 1903 both Walks and Panther Woman

were 38 years old (both were born in 1865). They had two sons Robert (born in 1897) and Ralph (born in 1896) living with them. Jessie Walks was born in 1900 and Peroy in 1905. In the 1903 records five children were living with the couple. Jessie was the youngest at 3, Robert was 6, Ralph was 7, Eva was 11, and Ruby (stepdaughter) was 16. No mention of the family is present in the 1916-1917 records. In 1920 Walks and Panther Woman had Robert, Jessie, Peroy and Dora living with them. By 1925 Robert and Ralph were the only two at home with Walks and Panther Woman. In 1928 Walks was a widower and in 1929 Robert, Ralph and Walks were the only three in the household. Walks died December 19, 1933 at 68 years old. In 1936 the records indicate that Ralph had a daughter Viola who was 6. Robert had married Rosie in 1933.

It is likely that the two graves at 32DU295 may be those of Walks and Panther Woman, or members of their family. There were not any BIA records of burials for this particular tract of land. However, should it become necessary to further identify the buried persons this could likely be done by interview with members of the families descended from this couple who are listed in the tract records. Officials at the BIA office indicated that when the Garrison Dam was being built many graves were identified and the contents moved to locations beyond the reservoir specified by relatives. This grave site is at the edge of the reservoir but is not presently endangered.

Cultural Material. Six flakes of Knife River flint were observed but not collected. No historic artifacts are associated with the graves other than a partially standing wire fence, which forms a square around the stone outlines.

Discussion. The prehistoric component appears limited to a 40 m x 30 m area at the extreme southern end of the ridge (based on surface evaluation). The lack of diagnostics or other artifacts prohibits temporal or formal analysis at this time. The prehistoric component is largely undisturbed, except for southern marginal erosion. The ridge top contains intact soils and buried cultural material is likely. The graves are situated 1.5 m from the eroding edge of the ridge and are not threatened at this time. The rate of erosion has not been determined.

Recommendations. The site should be tested for potential significance of the prehistoric component in terms of eligibility to the

National Register. Additional potentially significant materials may be present on the ridgetop. The historic graves have been adequately recorded and reported to the North Dakota State Department of Health. They do not represent the remains of individuals considered significant from a local or regional historical perspective. The graves are not threatened at this time, but may become impacted by erosion in future years. The condition of the graves should be monitored periodically. If erosion threatens them, they should be relocated or the ridge edge should be stabilized to prevent impact.

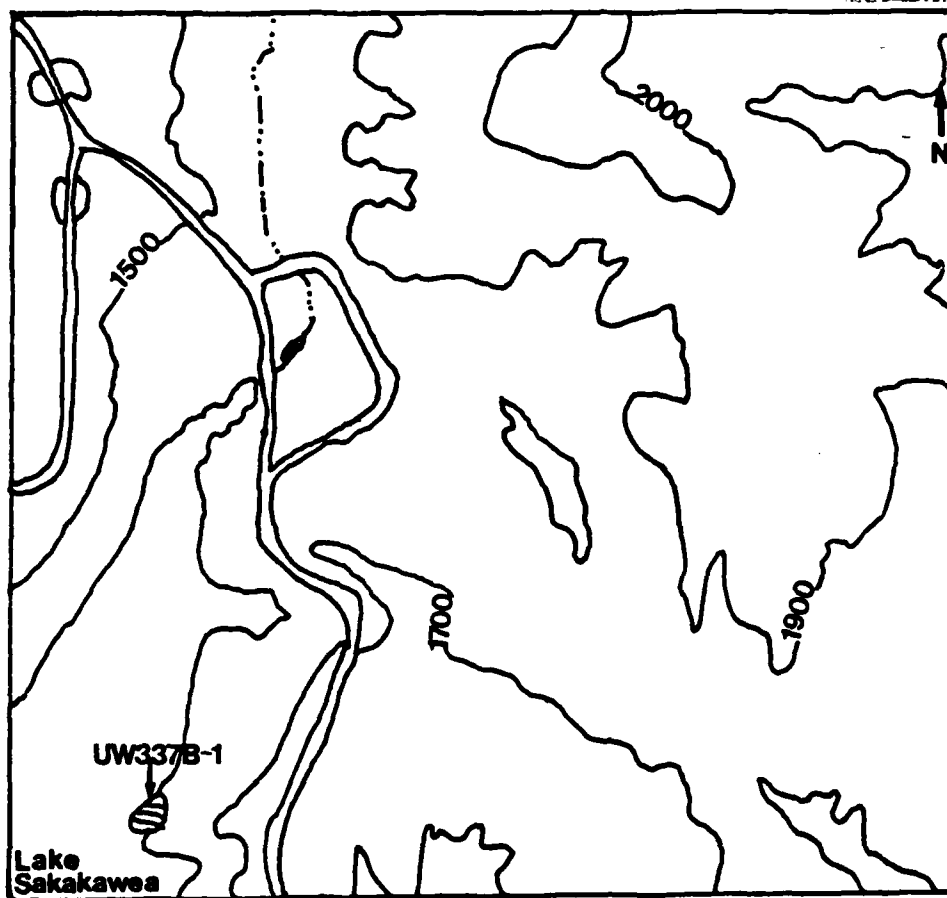
32DU296 MB-2

Site Description. The site consists of a lithic scatter, located along the beach on the east side of an unnamed bay and immediately south of a private trailer and yard (Figure 37). The site was revisited on August 9, 1983, and over one dozen artifacts were observed on the beach. A small terrace remnant protected by a fence and stone riprap is situated immediately east of the observed cultural material and may contain buried cultural material. The private trailer and grass covered yard is also situated on a small terrace to the north of the observed cultural material which may also contain buried artifacts. The site area is 1,000 sq m. The elevation of the site is 560 m AMSL.

Cultural Material. Artifacts collected during the original 1981 inventory and during a revisit to the site in 1982 include: four flakes, one unpatterned scraper, one end scraper, and one biface, all of Knife River flint. During the 1983 revisit two KRF bifaces and 12 flakes were observed but not collected.

Discussion. Site 32DU296 consists of a small but dense lithic scatter situated on the beach, possibly remaining intact in portions of the adjacent terrace. The site has been impacted by erosion and inundation, but may yet contain intact potentially significant materials. The cultural and temporal affiliation of the site cannot be determined at this time. The presence of tools and flaking debris indicates multiple site function.

Recommendations. The site should be tested for potential eligibility to the National Register of Historic Places. The testing should include the beach area where the artifacts were observed as well as the



Map Key:
 Contour line=~~~~~
 Site area=~~~~~
 Road===
 Water=:::
 Intermittent creek=-.-.-.-

Figure 37. Map of 32DU296.

small fenced in area of terrace remnant. The terrace remnant is protected from erosion at this time.

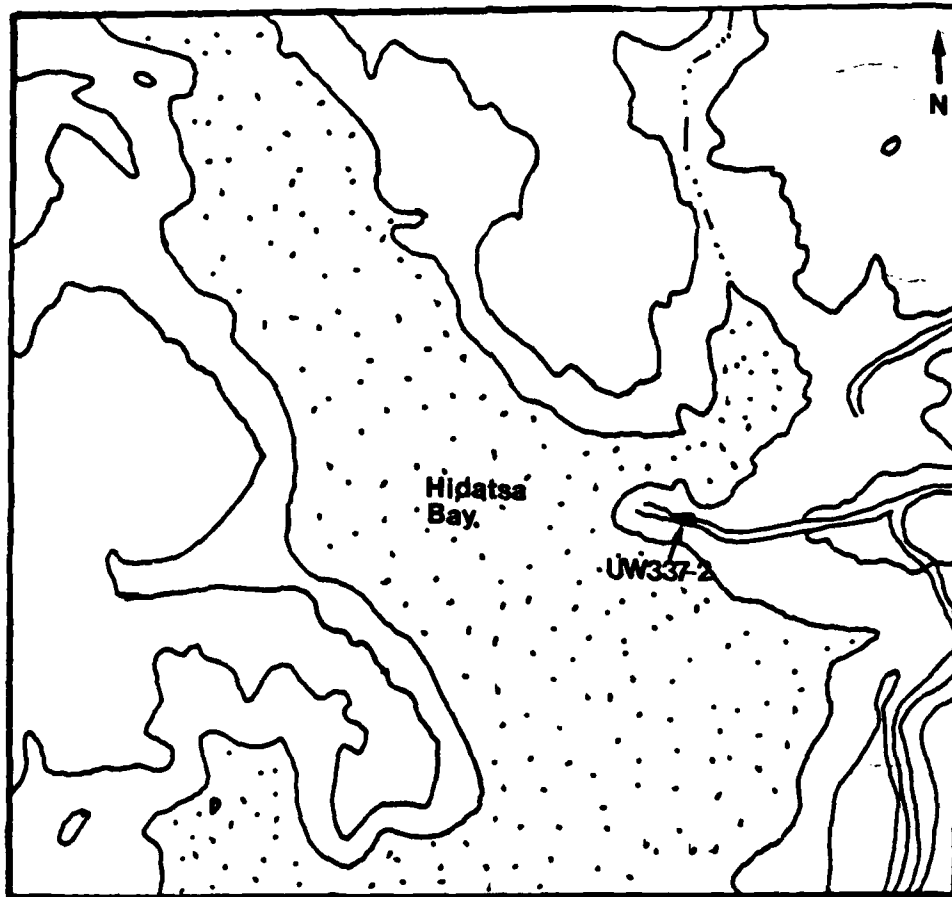
32DU297 MB-3

Site Description. The site consists of a single stone circle visible in a two-track road and a scatter of chipped stone flaking debris (Figure 38). The site is located on a west projecting terrace remnant on the east side of Hidatsa Bay. The site was revisited on August 9, 1983, and the stone circle was plainly visible in the road cut. Several concentrations of burnt KRF were also observed. The area of the site is 214 sq m and the elevation is at 567 m AMSL.

Cultural Material. No cultural material was observed or collected during the 1981 inventory. During the 1983 revisit KRF flaking debris was observed in the road cut and in deflated areas on the terrace. Two separate concentrations of burnt KRF flaking debris were observed in small deflated areas immediately south and west of the stone circle. No material was collected.

Discussion. Site 32DU297 contains one stone circle and a moderate amount of chipped stone flaking debris. The stone circle is located in a two-track road, the use of which has exposed the rocks of the ring but has not completely destroyed the feature. The rocks are still partially buried and the entire southern third is completely undisturbed. The road cut has not yet reached the original floor or living surface of the stone circle. The site is situated on an alluvial terrace which contains extensive Holocene deposits. The potential for buried cultural resources is very good. A large gravel quarry is located along the northern edge of the terrace. It was carefully investigated and does not appear to have impacted the site. The immediate site area has been impacted by road use and recent camping activity. Intact portions of the site do remain. The site cannot yet be placed within a cultural/temporal framework, but the presence of the stone circle may indicate occupation during the Late Prehistoric period.

Recommendations. The site should be tested to determine the potential for eligibility to the National Register. The site may contain buried significant cultural deposits. Adverse impacts have occurred, but not to the extent that the site integrity has been com-



Map Key:
 Contour line= 
 Site area= ●
 Road= 
 Intermittent creek= 
 Water= 

Figure 38. Map of 32DU297.

pletely compromised. Continuing use of the two-track road will eventually destroy the stone circle; the site should be tested as soon as possible or the road should be closed to vehicle traffic.

Isolates

1. Three flakes of KRF and chalcedony and a single KRF projectile point, identified as McKean, were collected from the beach in Section 25. The material was in secondary context and the area does not require additional work.

2. A single unifacially retouched flake of KRF was collected from a two-track road in Section 26. The location is not recommended for additional work.

3. A single KRF flake was collected from a silt beach in Section 35. The flake was in secondary context and no additional work is needed.

4. Three KRF biface fragments and two KRF flakes were collected from a mud flat beach in Section 34. The material was in a disturbed context and does not warrant site designation. No further work at the local is required.

Summary

Four sites were reported for the McKenzie Bay survey tract from the results of the literature search and the fieldwork (Table 14). A prehistoric occupation and workshop (32DU16) is beyond the present survey boundary. The site is inundated. Since the site is not within the present survey tract it need not be considered as part of the cultural resource management plan for the McKenzie Bay survey tract.

The remaining three sites which were all newly recorded as part of the fieldwork portion of the project are further discussed below (Table 15). These three sites which are within the present survey boundaries were evaluated in terms of potential significance, ability to yield important information concerning prehistoric lifeways, and present and potential impacts. The results allowed the sites to be ranked by priority relative to the resources within the survey tract. The results follow.

Table 14. Summary of previously recorded cultural resources for the McKenzie Bay Area survey tract.

Site Number	Site type/temporal affiliation	Comments
32DU16	Prehistoric, occupation and workshop	perennially inundated, beyond boundaries of present survey tract

Table 15. Summary of newly recorded cultural resources for the McKenzie Bay Area survey tract.

Site Number	Site type/temporal affiliation	Comments	Recommendations
32DU295	Historic, two graves, Prehistoric lithic scatter	no immediate erosion or impacts	Relocation in future, test for NR in future
32DU296	Prehistoric, lithic scatter	on terrace, remnants protected by riprap	test for NR in future
32DU297	Prehistoric tipi ring probable Late Prehistoric period	lithic scatter on terrace, trail over ring	stop traffic, test for NR

1) 32DU295 is a multicomponent site which consists of two historic graves and a prehistoric lithic scatter. The site is not subject to immediate erosion from Lake Sakakawea, however it is subject to erosional forces from wind, water, and recreational use of the area. The site should be tested in the future to determine the significance of the prehistoric component and the historic graves should be dealt with separately. It is recommended that should the site be subject to detrimental erosion or development the interviews be conducted among the descendents of the allotment holders to positively identify the graves and to move the graves to a location agreed upon by the relatives of the deceased. The graves should not be disturbed except for the purpose of relocation and reburial. The prehistoric component should be tested for significance and content of the deposits. Should the site contain data important to the interpretation of prehistoric use of the study area, then plans should be made to either recover the data through excavation or to preserve the deposits. If the testing results are negative then the prehistoric portion of the site would be dropped from the priority list and no further work at it would be warranted.

2) 32DU296 is a prehistoric lithic scatter located on a terrace remnant which is currently protected by riprap. It is recommended that at some future point the site be tested to assess the content and significance of the deposits. At that time, the results of the testing program could be used to determine whether significant deposits should be excavated to recover the data or whether the deposits should be protected from future impacts. If the test results indicate that significant deposits are not present, then the site may be dropped from the priority list and no further work at the site would be warranted.

3) 32DU297 is a prehistoric tipi ring probably affiliated with Late Prehistoric period use of the study area. The lithic scatter and ring are located on a terrace. A trail which is in current use crosses the ring and is impacting the integrity of the feature. It is recommended that the site be protected from vehicular traffic until such future time as testing may be performed. The results of testing the site should provide data to determine the significance of the deposits and the content of the components. If the site deposits are important in interpreting the area prehistoric sequence then the site should be

excavated to recover the data or the site area should be protected from disturbance. Should the site deposits prove nonsignificant then no further work would be warranted at the site and it could be dropped from the priority list for the area.

CHARGING EAGLE BAY AREA

Introduction

The Charging Eagle Bay recreation area is situated along the south shoreline of the Little Missouri branch of Lake Sakakawea (Figure 39). This portion of Lake Sakakawea consists of a huge bay formed by the inundation of the mouth of the Little Missouri River. The recreation area itself is located along either side of Charging Eagle Bay, a small, southeast extending bay, formed by the inundation of an intermittent creek. The bay is approximately 1120 m long and 76 m wide at the mouth. The topography of the study area is a combination of eroded badlands, inundated floodplains, and small offshore islands. The area is situated near the mouth of the Little Missouri River and is dominated by the Little Missouri Badlands, which are very rugged immediately south of the recreation area. Soil in the study area is both colluvial from the nearby eroded badlands and alluvial from the Little Missouri River drainage.

Being situated across the Little Missouri River floodplain from the McKenzie Bay area, past and present land use is similar in the Charging Eagle Bay area. Travel and resource utilization along the Little Missouri dominated activity in the area both prehistorically and historically. Today the area is heavily utilized for recreation purposes including camping, fishing, and boating.

Previous Investigations

No previous archeological or historical surveys have been conducted in the Charging Eagle Bay recreation area. No previously recorded sites were noted in the files search.

Cultural Resources

32DU298 CEB-1

Site Description. The site consists of a general debris scatter located on the beach along the northeast side of the Charging Eagle Bay

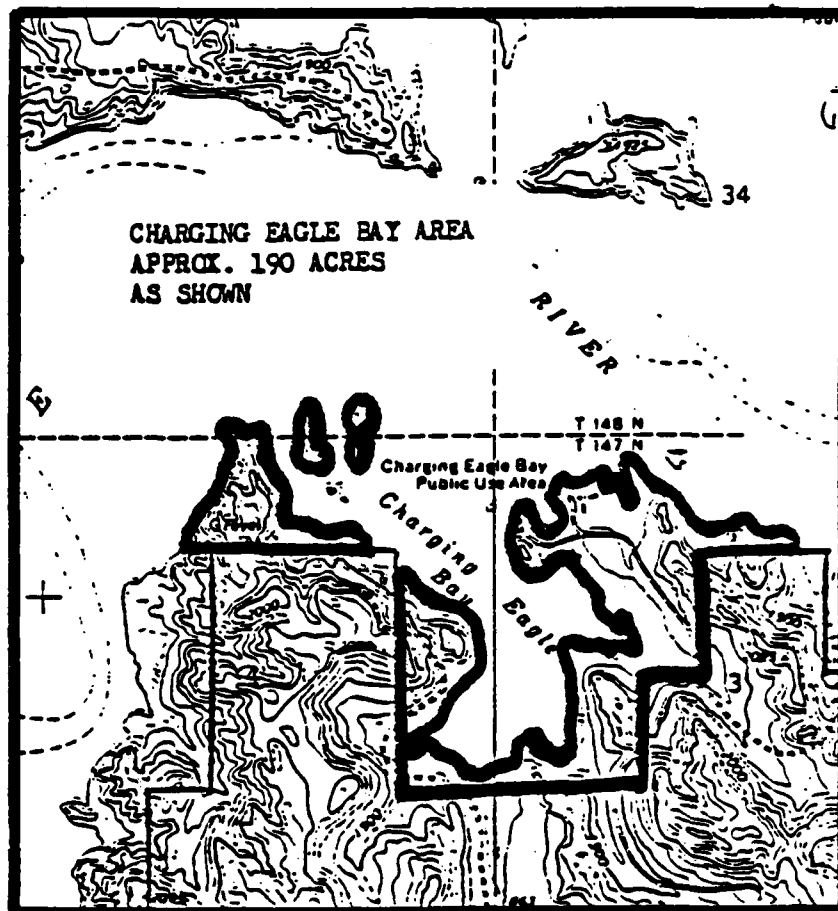
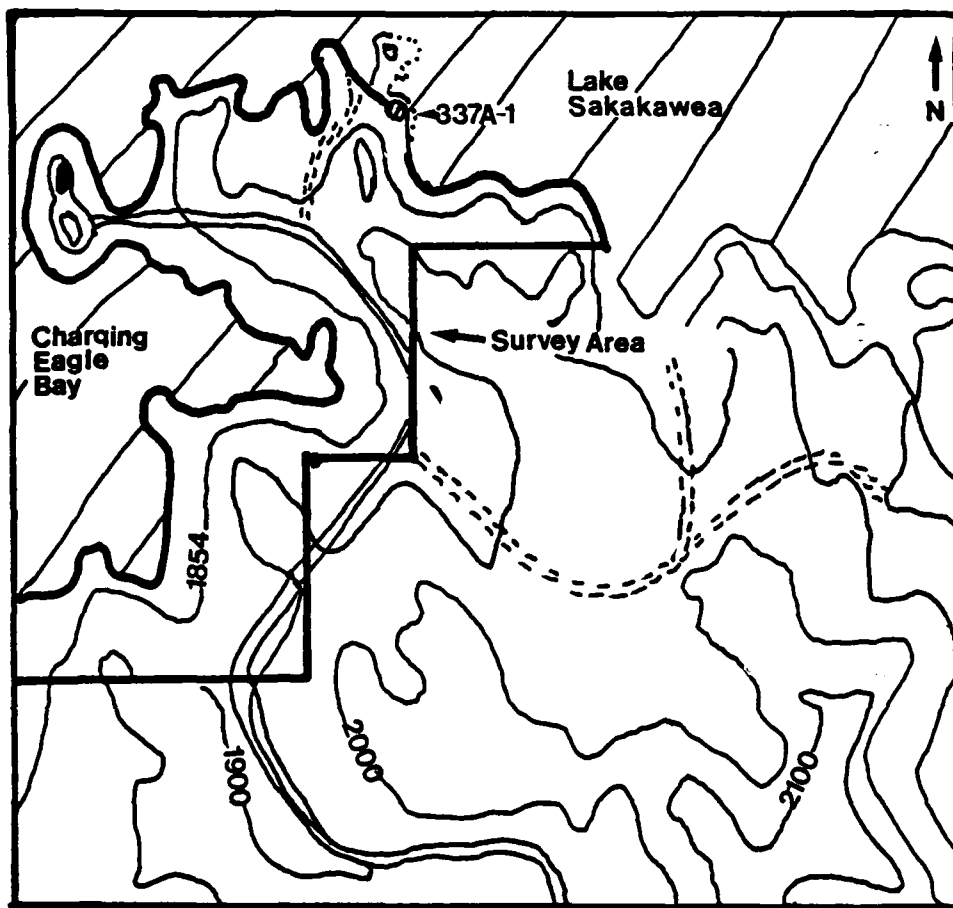


Figure 39. Charging Eagle Bay area.

recreation area (Figure 40). The site, located at the base of a small clay butte, was underwater completely during a revisit to the area on August 18, 1983. The site area is 2,500 sq m and the elevation is 549 in AMSL.

Cultural Material. A variety of cultural materials were observed and collected from the site during the 1981 inventory. This collection includes one KRF chopper, four KRF end scrapers, one KRF biface fragment, and two unifacially retouched flakes. In addition, 50 mammal bone fragments, one clear chalcedony flake, and twenty grit tempered pottery sherds (including two rim sherds) were collected. The two rim sherds are described as: Rim 1. A braced rim with a flattened lip and a single cord impression. The exterior brace shows vertical fingernail impressions while horizontal cord impressions appear below the brace. The temper consists of crushed granite. The rim appears to represent Knife River ware. The fragmented nature precludes certain identification. Thickness: 8 mm; Weight: 3.6 g; Color: dark brown exterior, light brown interior. Rim 2. Although the exterior rim is decorated with horizontal (lower left to upper right) cord impressions, the lip is plain and rounded, but almost pointed. The interior rim surface is smooth. Temper is crushed granite. The exterior surface is light brown/buff and the lip as well as the interior surface is black. Thickness: 4 mm; Weight: 2.6 g. This specimen is probably Knife River ware. The rim decoration is typical of Knife River ware (Lehmer et al. 1978:190). Eight body sherds from 32DU298 have simple stamped surface treatment, with thickness ranging from 2 mm to 5 mm. Two sherds from the site have cord impressed decorations on the exterior body and eight sherds have indeterminate exterior surface treatment.

Discussion. Temporal and cultural affiliation of the site can be estimated based on the ceramic assemblage. The sherds are from the Plains Village tradition, with the cord impressed rims indicative of the Knife River phase (A.D. 1750-1861) (Lehmer et al. 1978; Lovick and Ahler 1982). The context, size, and function of the site remain problematical due to the inundation by Lake Sakakawea. A functional interpretation is that it served as a temporary hunting camp or a winter village of short duration. Mandan and Hidatsa utilization of the Little Missouri mouth region has been documented (cf. Bowers 1948; Denig 1961; Kuehn et al.



Map Key:
 Dirt road=
 Two-track=
 Water=
 Site=
 Contour lines=
 Low water line=

Figure 40. Map of 32DU298.

1982). The site setting indicates that the material observed on the beach in 1981 was probably in primary context, since there is no adjacent terrace from which the material could have eroded. The site may yet contain intact cultural deposits, although impacts due to water erosion have undoubtedly been severe.

Recommendations. Site 32DU298 may contain intact and potentially significant cultural material in spite of continuing inundation. The site should be tested for potential eligibility to the National Register of Historic Places as soon as the water level of Lake Sakakawea is low enough to permit the work.

Summary

One cultural resource site (Table 16) was recorded for the Charging Eagle Bay survey tract. No previously recorded sites were on file for this survey area.

As the site is the only one recorded for the survey tract, it is the only priority for the cultural resource management plan for the Charging Eagle Bay survey tract.

1) 32DU298 is a prehistoric general debris scatter. The site is usually inundated by Lake Sakakawea. The site is recommended for testing in a year or season when the pool level is low. The site produced pottery as well as other artifacts and likely contains significant materials to the interpretation of the prehistory of the area. The site should be tested to confirm the content and significance of the deposits. Should the results be positive then plans should be made to recover the data. If the test results are negative then no further work at the site would be warranted and the site could be dropped from the priority list.

Table 16. Summary of newly recorded cultural resources for the Charging Eagle Bay survey tract.

Site Number	Site type/temporal affiliation	Comments	Recommendations
32DU298	Prehistoric general debris scatter	usually inundated, pottery: Knife River Phase	test for NR, good potential

Note: no previously recorded sites were on file for this survey tract.

DISCUSSION AND CONCLUSIONS

Synthesis

The cultural resources inventory of 10 selected recreation areas along the western portion of Lake Sakakawea has resulted in the identification of 24 prehistoric sites, two historic sites, and two sites with both prehistoric and historic components. These resources range temporally from the Early Prehistoric to Historic periods and include Paleo-Indian, Archaic, Plains Village, and Historic tradition components. The sites vary in composition and function from single occupation lithic scatters to complicated multiple component sites and historic farmsteads. Topographically, the sites are situated largely in three major settings; beach, terrace, and upland. The proximity of the resources to the erosion and changing pool levels of Lake Sakakawea and their concentration in recreation areas has resulted in adverse disturbance to the majority recorded.

As stated in the RESEARCH GOALS, all of the recorded sites were assessed in terms of their formal and temporal dimensions. The sites were temporally evaluated through the use of projectile point and ceramic typology when possible. Courthouse records were checked for historic sites.

The various projectile points documented during this project from five sites and two isolates contributed to the relative dating of the components and the survey areas. The sixteen points (Table 17) include an Agate Basin projectile point as the earliest and Late Plains side notched projectile points as the most recent. Corner notched and un-notched projectile points were also documented. The majority of the points were recorded for 32WI50 at Lewis and Clark State Park. The six remaining points were recovered from as many individual locations. Measurements and indices (Forbis 1960) have been compiled for the points from the project (Table 17). Several of the items are incomplete, however the majority of the measurements and resulting indices were calculated. A full discussion of the method for compiling of the indices is presented under LABORATORY METHODS. The data presented in Table 17 should provide a useful reference for comparative purposes when

Site or Isolate Number	Description	Length	Body Width	Base Width	Neck Width	Notch Width	HBE	Base-Body Width	HBE-HW Width
32W150	P. Point A KRF, Corner Notched	--	26	18	14	7	4	144	57.14
	P. Point B KRF, Corner Notched	--	29	--	14	4.5	1.8	--	40
	P. Point C KRF, Corner Notched	40	17	16	13	8	3	106	37.5
	P. Point D KRF, Corner Notched	29	19	13	11	9	3	146	33.3
	P. Point E KRF, Corner Notched Drill	30	21.5	18.5	16	6.5	4	116	61.5
	P. Point F KRF, Corner Notched Base	--	31	23.7	22	8	3.5	130	43.75
	P. Point G Porcellanite Unnotched Point	--	14.5	13.5	--	--	--	107.4	--
	P. Point H KRF, Corner Notched	25.5	19.5	12.5	5.5	6	1.5	156	25
	P. Point I KRF, Corner Notched	24	14	11.5	8.5	2.5	4.5	121.7	180
	P. Point J KRF, Corner Notched	20.5	15	14	11.5	3	2.5	107	83.3
1-337J-2	Agate Basin P. Point	50	21	10.5	--	--	--	200	--
32942601	KRF Corner Notched	--	21	13	13	4	2	161.53	50
32942406	KRF Corner Notched	30	18	17.5	12	4.5	2	102.85	44.4
1337I-1	Clear Chalcedony Side Notched	--	13	13.5	9	3	3	96.29	100
32W157	Crypto-Crystalline Silicate Side Notched	--	14.5	10.5	11	4	3	138.1	75
329491	KRF Side Notched	24	15	12	10.5	2.5	2	125	80

Table 17. Projectile point measurements.

in the future these sites are further investigated. The data is most useful when specimens are recovered from an excavation and may be corroborated with radiocarbon and stratigraphic data.

The earliest artifact recovered during the inventory is an Agate Basin projectile point, which was found in an isolated context on a presently inundated beach at Lewis and Clark State Park. The temporal range of Agate Basin projectiles is variable, however a radiocarbon date of $10,430 \pm 570$ B.P. obtained from the Agate Basin site in Wyoming provides a general estimate (Frison 1978:23).

The Plains Archaic tradition is represented at three sites in the study area. A Pelican Lake projectile point was recovered from 32MZ602 at Tobacco Garden Bay. A projectile point identified as Middle Plains Archaic was recovered from 32MN95 at Sanish Bay. The temporal range of these points are ca. 3300-5000 B.P. respectively (Frison 1978:53-62). A Pelican Lake point was recovered from 32WI50 at Lewis and Clark State Park. Several other diagnostic point styles and ceramics indicate that this site contains several cultural components.

Late Prehistoric period occupation is indicated at five sites based on the presence of projectile points and ceramics. Single side notched projectile points diagnostic of the Late Prehistoric period were recovered from 32WI57, 32MN91, and 32WI50. Late Prehistoric period assignment was given to 32MZ603 on the basis of a single unidentifiable sherd. Plains Woodland affiliation is tenuously suggested for 32MN10 based on the recovery of a single sherd. The specimen is very small and cannot be considered conclusive. The Late Prehistoric sites are estimated to have been occupied from ca. 2000 to ca. 250 years B.P.

The Plains Village tradition is represented at 32DU298, Charging Eagle Bay, which produced diagnostic ceramics of the Knife River Phase (A.D. 1750-1861) (Lovick and Ahler 1982). Plains Village occupation is also suggested at multiple component 32WI50 due to the recovery of unnotched triangular projectile points and ceramics.

Historic affiliation is given to 32DU295, 32MZ598, 32MZ599, and 32WI50. Of these, 32WI50 appears to be most significant, producing artifacts possibly affiliated with the Adams Brothers trading post of the late 1800's (Henry Duray, personal communication 1981, 1984).

A total of 17 sites could not be assigned to a temporal period or named cultural unit due to a lack of visible diagnostics. This number, which represents 60.7% of the total sites recorded, is not surprising. Future test excavations at these sites may facilitate temporal placement.

Formal dimension analysis of the recorded sites centered around interpreting site type and function, based largely on observed artifacts. Out of the 28 sites recorded, 16 are classified as lithic scatters. These sites contain chipped stone tools and flaking debris and are generally thought to reflect a limited amount of activity, primarily flintknapping and tool maintenance.

General debris scatters comprise the second most common site type with six sites recorded. General debris scatters contain more than one artifact type, usually with combinations of lithics, ceramics, faunal remains, shell, fire cracked rock, and historic trade items. These sites (32DU298, 32WI57, 32MZ406, 32MZ603, 32MN10, 32WI50) are thought to reflect a wider variety of activities representative of camp or village occupations (cf. Gregg and Root 1982).

Sites with surface visible cultural features are limited to stone circles, historic homesteads, and graves. These sites reflect a diversity of functions, from prehistoric camping activity to prolonged historic occupation and internment. The inventory resulted in the recording of three stone circle sites (32MZ604, 32WI59, 32DU297), two historic homesteads (32MZ598, 32MZ599), and one historic grave site (32DU295).

At least two sites were recorded which contain more than one cultural component. Site 32WI50 contains materials suggestive of at least four components ranging from Middle Plains Archaic to Historic. Site 32DU295 contains both historic graves and a prehistoric lithic scatter. Additional components may become apparent at the remaining sites upon excavation.

Cultural resource management interpretations center around potential National Register significance and site impacts. Out of the 28 sites recorded none can be recommended for nomination to the National Register at this time. Several sites do appear to contain good research potential and are relatively undisturbed. These sites are 32WI50, 32DU298, 32MN90, and 32MN10.

Only three of the recorded sites are recommended as not eligible for nomination to the National Register. These are 32WI51, 32MZ598, and 32MZ599. The remaining 21 sites have not been tested to produce sufficient information to facilitate National Register evaluation. Excluding the three not considered eligible, all sites recorded will require subsurface testing in order to be properly evaluated.

As stated previously, the majority of sites recorded during the inventory of the 10 recreation areas have been impacted to some extent. Out of the 28 recorded only seven appear to be totally undisturbed. These sites are 32WI59, 32MN98, 32MZ604, 32MN10, 32MN96, 32MN100, and 32MN153. One site, 32WI51, appears to have been totally destroyed by the construction of a rock jetty. It should be pointed out that the site was evaluated as being severely disturbed by the original site recorders (Appendix A). A second visit to the site was recommended when the pool level of the reservoir drops.

The remaining 20 sites have been impacted by a variety of factors. The extent of the impacts are only arbitrarily estimated (Appendix A). Subsurface testing of all of the impacted sites is recommended in order to document the extent of disturbance and to assess the potential of the sites to contain significant information. A brief summary of the nature or cause of the site impacts follows:

Impacted by Erosion: 32WI57, 32WI58, 32WI72, 32MZ601, 32MZ602, 32MN90, 32DU295

Impacted by Water Inundation: 32DU298, 32MZ605, 32DU296, 32MZ603, 32MZ406 32MN91, 32MN95, 32MN97

Impacted by Recreational Activity: 32DU297, 32WI61

Impacted by Removal of Buildings: 32MZ598, 32MZ599

Impacted by Erosion and Water Inundation: 32WI50

Several of the impacted sites are noticeably more threatened than the others and should be given immediate consideration. These are threatened by ongoing and severe cutbank erosion and consist of sites 32WI50, 32MZ601, 32MZ602, 32MN90, and 32DU295. Site 32DU295 contains two graves which are located only 1.5 m from the eroding edge of a hill top. The rate of the hill top erosion has not been determined, however the graves may become impacted in the near future.

Before work is conducted to alleviate the erosional impact to the severely threatened sites, and to all of the impacted sites for that matter, each should be evaluated in terms of eligibility to the National Register. If subsequent NR evaluation results in the determination that some sites are not eligible then no future work to alleviate site impacts is recommended. On the other hand, if such evaluation results in the determination that one or more of the threatened sites are potentially NR eligible, then safeguard measures such as riprapping are strongly recommended.

While the affects of cutbank erosion are obviously destructive to cultural resources, the affects of water inundation are much more difficult to ascertain. All of the sites subjected to periodic or seasonal inundation should be tested during low water levels, both to facilitate NR evaluation and to provide information as to the nature and extent of this impact.

Several sites are situated in well used and maintained camp and picnic grounds (32WI50, 32WI61, 32MN98). In addition to being threatened by artifact collecting, these sites have been impacted by, and may continue to be threatened by maintenance activities (i.e., shelter construction, campsite construction, rototilling, riprapping). It is recommended that activities of this nature be prohibited until the sites can be adequately evaluated for National Register eligibility.

Summary

The site recommendations for each survey tract have been previously summarized within each section of the report which gives the results. The sites were ranked for each survey area according to research potential and immediate and/or future impacts to the deposits. The ranking was done to facilitate cultural resource management planning for each recreation area on a priority basis. The following discussion summarizes the ranking of the recommendations for further investigations for the survey area as a whole. The sites have been divided into a four-phase program. Table 18 illustrates the divisions of the phases and the sites by recreation areas. Phase 1 includes sites which will require testing in the near future. These cultural resources have been

Table 18. Summary of recommendations for survey results.

	Lewis & Clark	Tobacco Garden	National Guard	Hofflund Bay	Four Bears	New Town	Van Hook	Parshall Bay	McKenzie Bay	Charging Eagle
Phase I										
Immediate Testing	32WI50 32WI72	32MZ602 32MZ601	-	-	32MZ605	32MN90	-	-	-	-
Phase 2										
Low-Pool level	-	32MZ602 32MZ406	-	32WI57	-	32MN91 32MN95	-	-	-	32DU298
Phase 3										
Testing in future	32WI61	32MZ604	-	32WI58	-	32MN100 32MN153 32MN96	-	32MN98	32DU296 32DU297	-
Phase 4										
No action required	32WI51	32MZ599 32MZ598	-	-	-	-	-	-	-	-
(*adjacent to survey tract)										
*Sanish Townsite low pool										
*Van Hook Townsite low pool										

assigned top priority as they are undergoing active erosion from the reservoir. Phase 2 includes those sites which are usually inundated by Lake Sakakawea. These sites may contain intact buried deposits and should be tested. The crucial factor in further investigations of these sites is the pool level of the reservoir. Testing of these sites will need to be scheduled for a year and season when the pool level of the reservoir is exceptionally low. Low pool level is necessary to gain access to the site locations. Phase 3 includes sites which may be tested at some future time. These sites are not in immediate impact zones and may be investigated after the Phase 1 and 2 site groups have been addressed. Phase 4 includes sites which require no further action. These sites have already been adequately recorded and investigated to assess the National Register eligibility potential.

The Phase 1 group of sites includes six locations among four of the recreation areas. The remaining six recreation areas have no sites within this phase. The Lewis and Clark State Park (32WI50, 32WI72) and Tobacco Garden Bay areas (32MZ602, 32MZ601) have the most sites which need to be tested in the near future. The Four Bears State Park (32MZ605) and New Town areas (32MN90) each have one site which should be tested as soon as possible since active erosion is affecting the integrity of the site deposits.

The Phase 2 group includes six sites among four recreation areas. The remaining six recreation areas have no sites within this phase. The sites are entirely or largely inundated at the present time. The sites are exposed at low pool levels that occur on drought years which coincide with dry open winters. These sites should be scheduled for investigations when the pool level of the lake is sufficiently low as to provide exposure and access to the site areas. Scheduling of the investigations for this phase of testing must of necessity be planned to take place when the low pool conditions are favorable. Tobacco Garden Bay survey tract has two sites in the Phase 2 group (32MZ603, 32MZ606) as does the New Town survey area (32MN91, 32MN95). Hofflund Bay (32WI57) and Charging Eagle Bay (32DU298) survey tracts each have single sites within this phase.

The majority of the sites were within the Phase 3 site group. These twelve sites are not presently subject to direct impacts from the

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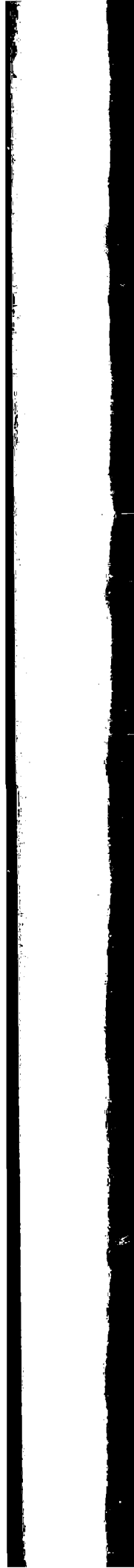
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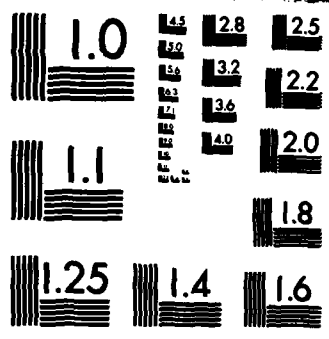
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reservoir and thus the assessment of significance of these resources may be delayed as a lower priority than the Phase 1 and 2 groups. The deposits of these Phase 3 are not any less potentially significant than those in the preceding two phases, however the latter group of sites is not presently impacted and so the further investigation of these cultural resources may be postponed without significant damage occurring to the sites. The Phase 3 sites should be protected from development of recreation facilities until such time as the testing can be completed. The twelve sites are distributed among six of the recreation areas. The remaining four recreation areas do not have any sites assigned to this phase. Lewis and Clark State Park (32WI61), Tobacco Garden Bay (32MZ604), Hofflund Bay (32WI58), and Parshall Bay (32MN98) survey tracts each have single sites in this phase. The New Town survey area has the largest number of sites within Phase 3 with five (32MN97, 32MN10, 32MN100, 32MN153, 32MN96). The McKenzie Bay survey tract has three sites within this phase (32DU295, 32DU296, 32DU297).

The Phase 4 group includes three sites from two recreation areas. The remaining eight recreation areas do not have any sites in this phase. Lewis and Clark State Park (32WI51) had one site and Tobacco Garden Bay (32MZ598, 32MZ599) has two sites. These sites have been sufficiently recorded and documented. No further action is recommended for these particular sites.

In addition to the four phases and sites within each phase, there are two historic townsites which are adjacent to the survey area. The Sanish townsite is adjacent to the New Town area and is visible at low pool level. The Van Hook townsite is adjacent to the Van Hook survey tract and has not been inundated. The Corps Archeologist at Riverdale has recorded the Van Hook townsite. The Sanish Townsite has yet to be recorded. These two sites could be investigated and the results of the literature search and field work would augment the historical portion of the cultural sequence for the study area.

In conclusion, the sites inventoried from this survey have the potential to yield important information concerning the historic and prehistoric cultural sequence of the western portion of Lake Sakakawea study area. The sites recorded differ in site type from many of the sites investigated previously along the eastern portion of the reservoir

(i.e., the sites are not earth lodge villages). To date few testing projects and/or excavations have been performed within the survey area, and consequently inferences about the cultural and environmental sequence are based largely on surface collections and examinations of cutbanks. A phased testing program of the cultural resources inventoried within the present project has the potential to document data concerning prehistoric and historic use of the study area, and thus contribute to the documentation of this part of North Dakota's cultural sequence.

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