

Explore Nebraska Archeology

Sand Hills Archeology



Nebraska State Historical Society



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Nebraska State Historical Society
is to safeguard and interpret
Nebraska's past.

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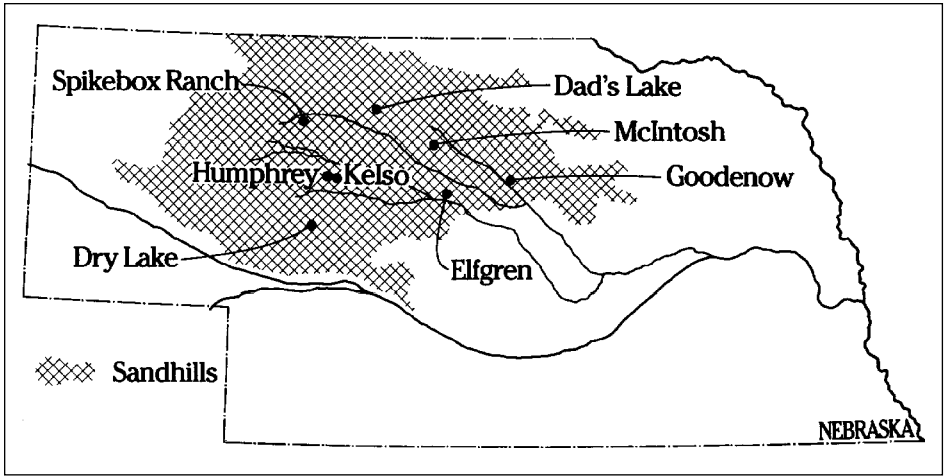
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1999

*On the cover: Rare vessel carved from soft stone
and found in Cherry County.*



Covering approximately 20,000 square miles, the Nebraska Sand Hills is the largest grass-stabilized dune field in the western hemisphere. The area is a “frontier” in the sense that much remains to be learned about its combination of geologic, biologic, hydrologic and cultural resources. Archeological research in the region has primarily consisted of unsystematic surveys with occasional surface collections and excavations. Funded opportunities to conduct large scale cultural resource management studies are infrequent, particularly within the Sand Hills interior. Shifting dune fields during the past 10,000 years have left many locations of prehistoric activity either deflated in blowouts or buried under many feet of sand. Despite these obstacles, the region holds great promise for a fuller understanding of Central Plains human adaptation.

Sand Hills Environment

Sand Hills dunes formed as a result of several intervals of drier climatic conditions during the past 10,000 years. During these arid episodes, the water table declined and many rivers diminished or disappeared. Sand from dunes with

little or no vegetation advanced across river beds and filled valleys. When wetter conditions returned, the water table rose and rivers resumed flowing. Blocked by the dune sand dams, streams backed up to form numerous lakes and wetlands in the region.

The midcontinental position of the Sand Hills is partly responsible for the broad range of climate from east to west and the unique mixture of plants and animals. A large groundwater reservoir supports the diversity of life. Water permeable sand dunes lie over the aquifer to form a pattern of dry dune-top prairie grasslands near many important aquatic-related habitats including wet meadows, streams, marshes, and lakes. A combination of warm and cool season grasses make up the Sand Hills prairie. Overlapping rates of maturity and an abundant subsurface water supply contribute both to the quantity and quality of forage available for large grazing mammals such as cattle and bison.

Past Cultures of the Sand Hills

Paleoindians (12,000–8,000 years ago) were the earliest human inhabitants of the Sand Hills. They were nomadic, big game hunters who survived primarily by hunting mammoths and bison as well as other extinct species. Large, finely worked lanceolate chipped stone spear points dating to this period are found throughout the Sand Hills, usually in blowouts where the original context has been destroyed.

During the Archaic Period (8,000–2,000 years ago), a large number of mammalian species became extinct, leaving the bison as the largest and most important prey for Sand Hills inhabitants. Archeological evidence suggests that plant foods became more important to the diet as a supplement to hunting. In addition, a greater diversity in the types and styles of artifacts being produced, as well as regional variations in artifact styles suggest that groups were less nomadic and





Spear thrower or "atlatl."

becoming more familiar with local resources. Few sites of this age have been excavated in Nebraska and only one in the Sand Hills.

The Woodland Period (2,000–1,000 years ago) in Central Plains prehistory is defined primarily on the basis of the earliest known use of ceramic vessels and a more settled lifestyle. During the late part of this period in the Midwest, the first evidence of horticulture occurs. Squash, beans, and possibly amaranth (pigweed) were grown. Corn was also cultivated on a small scale during the Woodland Period. Hunting and gathering wild plants continued to be a major form of subsistence, with horticulture becoming more important through time. A major technological breakthrough took place during this period as the bow and arrow replaced a spear throwing device called the "atlatl" as the main hunting weapon.

From about 1,000 to about 600 years ago, much of Nebraska was occupied by the Central Plains tradition. This culture was composed of small groups of related peoples who lived at least part of the time in permanent villages and divided their time between raising crops and hunting. In the eastern and southern portions of the state, groups lived in substantial rectangular earth lodges consisting of timber frameworks covered with grass and earth, and raised corn, beans, and squash. Related sites are located in the High Plains of western Nebraska, eastern Colorado, and eastern Wyoming. However, they seem to be less permanent in nature and convincing evidence for horticulture is lacking.

Commonly thought to be ancestors of the Plains Apache, people of the "Dismal River" culture occupied the Sand Hills region briefly, possibly for only a half-century in the late 1600s and



Plains Woodland
tradition axe.

early 1700s. Dismal River people had a subsistence economy based primarily on hunting and secondarily on horticulture. Bison were the chief animals hunted, although deer, beaver, birds, turtles and freshwater mussels were also eaten. Evidence for horticulture is present, but limited. Bison scapula digging tools have been recovered from several sites. Charred remains of corn and squash or gourd provide direct evidence of domesticated plant use. Wild plant foods were also eaten. Remains of plums, chokecherries, hackberries, and black walnuts have been recovered. Chipped stone and bone tool technology included projectile points, scrapers, knives and drills, bison scapula hoes, fleshers, and bone awls. Restorable ceramic vessels indicate globular to somewhat elongate shapes with constricted necks. Individual sherds and reconstructed portions suggest other forms, including bowls with constricted necks or "seed bowls," vessels with flat shoulders and recurved rims, vessels with flat bottoms, and miniatures. Dismal River pottery is characteristically grey-black in color with a smooth or simple stamped surface and tempered with gritty paste, fine to medium sand or mica. Decoration is scarce and usually confined to the lips, consisting of



Archeological excavation on the Middle Loup River,
late 1940s.



“Taking the Hump Rib” by Alfred Jacob Miller

punctates and incised or impressed lines. A common shelter was a round lodge, about twenty-five feet across, covered by grass or brush over a five-post foundation with leaners built either on the surface or in a shallow excavation.

Based on native oral traditions and the accounts of Euroamerican explorers, military personnel, and settlers, at least ten Native American tribes used the Sand Hills for a variety of purposes. The region is most closely associated with the Brulé and Oglala bands of the Lakota. Other equestrian nomadic bison hunting groups familiar with the area include Cheyenne, Arapaho, Kiowa, and Crow. More sedentary hunting/agricultural village tribes utilized the area for bison hunting and perhaps other uses. Native American villagers who may have hunted in the Sand Hills include the Pawnee, Arikara, Plains Apache, Omaha, and Ponca.

The earliest recorded Euroamerican incursion into the Sand Hills was by James Mackay in 1795, who journeyed up the Niobrara perhaps as far as the Snake River. The northwest Nebraska fur trade (1825–50) was centered along the Niobrara and White rivers. Surveys of the Sand Hills conducted during the mid-nineteenth century include the explorations of G. K. Warren in the 1850s and James Sawyers in 1865.



Custer County homestead, 1880s.

Increasing military presence began following the Ft. Laramie Treaty of 1868 to protect Native American lands from encroachment by settlers. Detachments from Forts Robinson, Niobrara, and Hartsuff became familiar with the region during attempts to supply the Pine Ridge and Rosebud Sioux and keep peace between the Indians and Euroamericans.

From 1870 through 1874, four military scouting missions traveled across the central and western Sand Hills. Two were listed as scouting missions, but the primary purpose was to escort Professor O. C. Marsh of Yale University on scientific fossil hunting expeditions along the Dismal and Niobrara rivers. Marsh was accompanied by Thomas Maghee, an army doctor, who kept a diary throughout the trip. The third scouting trip in 1872, led by Captain James Curtis,

mapped, for the first time, the accurate sequence of rivers in the Sand Hills from Fort McPherson to the Niobrara River. The final expedition was a military reconnaissance from Sidney to Fort Robinson which mapped a limited portion of the western Sand Hills.

After nearly one hundred years of intermittent observation by military and civilian explorers, cattle ranchers began to establish themselves in the region. The "Open Range" period from 1869 to 1885 saw the development of a number of large and small cattle operations in the Sand Hills. Further settlement in the area was encouraged by the 1904 Kinkaid Act. County organization and the railroad played a large part in the location and development of towns in the region.

Pioneering Archeological Explorations

The first professional Sand Hills archeological survey occurred in 1931 when William Duncan Strong of the Smithsonian Institution, avocational archeologist Asa T. Hill, and members of the University of Nebraska Archeological Survey visited sites along the Dismal River in Hooker County. The crew camped for two nights in August near the river forks south of Mullen. Four years later in his *An Introduction to Nebraska Archeology*, Strong reported on several of the surface collections made during that trip. The Sand Hills undoubtedly left a positive impression:

I have said that the country, first seen in a drizzling rain, was dismal, but this is only half true. The irregular contour of the sand hills, the rare cedar trees, and the wide vistas of unoccupied country have an allure of their own. It is still Indian country, though the natives have long been gone. One remembers the Dismal River and the sand hills with a thrill of pleasure, and plans to return.

In 1933 French archeologist E. B. Renaud, from the University of Denver, made these remarks regarding his brief reconnaissance visit to the Sand Hills:



Archeological crew exploring the Sand Hills in the late 1940s.

It is difficult of penetration, as the roads, that is to say the trails are few and in places, deep in loose sand that renders progress slow and uncertain. The population is sparse, a ranch here and there, far apart and hidden among grassy hills; few people know this region well enough to give directions that are clear and easy to follow. Nothing looks more like a small swampy lake surrounded by round topped sandy hills, than another such water hole at the bottom of a depression between similar hills and dunes. Cutting across country, over the prairie and the shoulders of connected hills, is rough going, with a fair chance of getting at least temporarily lost, or of breaking springs or car axles. Decidedly it is a country for horse-back riding, which is a mode of locomotion entirely too slow for the rapid survey of scattered sites. The intensive heat of June in Nebraska was still augmented by the sandy country and the laborious walking around blowouts. For these reasons we hardly did more than attempt short reconnaissance trips in three separate districts in order to secure a first acquaintance in a region that deserved more extensive exploration.

Renaud personally visited eighteen of the more than fifty new sites identified in Box Butte, Garden, Morrill, and Sheridan counties. As is

typical of many archeological sites identified in the region, most were found exposed in blow-outs. He examined several artifact collections belonging to local ranch owners and informants that included 10,000–12,000-year-old Paleoindian points as well as later stone tools and pottery. Many of the site locations were based upon information supplied by local collectors.

During the 1930s E. H. Barbour and C. Bertrand Schultz of the University of Nebraska State Museum also reported several Paleoindian sites in Arthur, Garden, Hooker, Keith, McPherson, and Morrill counties. Within the same levels that produced spear points, they also noted fossilized bones of mammoths and *Bison antiquus* (a large, extinct species of bison). The most recently documented site of this period is the Elfgren site in northeastern Blaine County. At that location, a blowout has produced Clovis fluted points dating to 10,500–10,200 years ago as well as other more recent artifacts. However, to date, no intact Paleoindian sites have been documented in the Sand Hills region.



Excavation of the Kelso Site, 1947.



Investigating buried artifacts in the Loup River bank, 1940s.

In 1940 noted Plains archeologist Waldo Wedel documented a few small sites during a brief survey along the Snake River. During that year, A. T. Hill and Marvin (Gus) Kivett of the State Historical Society identified six Woodland Period (2,000–1,000 years old) sites in Brown, Cherry, and Holt counties. These components were found in a variety of settings including lake shores, in dry lake beds, on stream terraces, and even in blowouts far from extant water sources.

In 1947 the proposed, but never built Mullen Reservoir area was investigated by Historical Society and Smithsonian Institution River Basin Survey archeologists. Eight archeological sites were identified and several were tested east of Mullen along the Middle Loup River. Among the tested sites, Kelso is the best known and represents the only major excavation of a Woodland site in the Sand Hills proper.

Approximately one-quarter of the Kelso site was excavated. Two hearths were uncovered, but storage pits or architectural ruins were not lo-

cated. Artifacts included pottery, stone tools, animal remains, and a bone awl. The animal bone sample reflected an emphasis on smaller game. The site is somewhere between 950 and 1,350 years old. A number of Woodland sites in the Sand Hills have been less intensively investigated, including the Dad's Lake site in southeastern Cherry County.

Five protohistoric Native American sites were recorded within the proposed Mullen Reservoir area in Hooker County. Three of these located along the Middle Loup River east of Mullen were tested intensively by Kivett and the Historical Society. Postholes, fireplaces, and what appeared to be lodge floors were observed at excavations of the Humphrey site. Artifacts include stone and bone tools, pottery, and charred corn. Other Dismal River sites located within the Sand Hills and reported by James Gunnerson include eighteen locations in Cherry, Hayes, Hooker, Lincoln, and Thomas counties.

In a recent interview, anthropologist Dee Gunnerson spoke about her experiences in the Sand Hills during the late 1940s.

One fine day we went out with the Historical Society crew to try to relocate a site on the Dismal. The Sand Hills, covered with tall grass, were beautiful, and as we walked along and the day progressed they began to look more and more alike. And before long, one cedar or juniper tended to look much like another. Finally, without ever voicing the fact, we knew we were lost. When we tried to retrace our route, we realized that we had lost our sense of direction. How long we might have had to search for our vehicles I don't know, but finally Marvin Kivett's dog, Rocky, started off in a direction in a purposeful manner and, following him, we found them.

The Humphrey site was named for a gentleman living in Mullen. Dee had this to say about him,

Another day we went out with Carl Humphrey, an attorney at Mullen. An artifact collector with an intimate knowledge of the Sand Hills, he had an effective approach to covering his territory. He had modified his car with an oversized radiator and tires in which he could drive from blowout to blowout and had tools for cutting fences when he came to them and mending them behind him.

Difficult survey conditions and logistical problems continued to challenge archeologists during the 1940s and 1950s. Dee writes,

Of all the problems we encountered in the field, sand, loose sand, was to me the most formidable. Sand has the massive latent power of inertia, exercised most notably when something meets it with force. Where wind has been the force, as in the Sand Hills, the result can be beauty of line, never boring though repeated endlessly, seductive, but potentially dangerous.

Recent Explorations

Site discoveries in the Sand Hills since the 1950s have been products of small surveys, reports by local informants, large-scale cultural resource management reconnaissance projects, and salvage efforts. A brief survey of proposed reservoirs on the Niobrara River and two tributaries, Plum Creek and the Snake River, was conducted by Richard Wheeler for the Smithsonian Institution River Basin Survey in 1950. Several small sites were reported, but excavations were never conducted. An emergency salvage excavation was conducted in the 1950s by Marvin Kivett when 2,500-year-old (Archaic Period) human remains were found in a blowout near Dry Lake in the southern Sand Hills.

During the 1980s salvage survey work on the Calamus River at the southeastern edge of the Sand Hills was conducted by the Division of Archeological Research of the University of



Pawnee pottery fragments
from the 1700s.

Nebraska Anthropology Department. This was made necessary by the planned construction of the Calamus Reservoir, a Bureau of Reclamation irrigation project. Fourteen Native American sites and several historic farmsteads were documented. Extensive salvage work at a proto-historic Pawnee hunting camp site was also conducted by Donna Roper, now of Kansas State University. A cultural resources inventory within select areas of the Ft. Niobrara National Wildlife Refuge, along the northern Sand Hills, was conducted during the same period, producing one Euroamerican and twenty-one aboriginal sites. Along the northern margins of the region, hundreds of sites have been documented along the Niobrara River during a University of Nebraska-Lincoln survey for the proposed, but never built, Norden dam project. The majority of Native American sites consisted of stone debris and tool scatters. Several were stone quarry sites.

Road salvage efforts by the Historical Society from 1986 to 1989 resulted in the excavation of the McIntosh site, a late prehistoric (Central Plains tradition) settlement along Enders Lake in Brown County.

McIntosh is the first excavated and only known semi-permanent habitation along a Sand Hills lake. An excavated feature inventory includes a midden or garbage area with five post molds and remnants of a house with twelve post molds. Other features include eighteen cylindrical storage or garbage pits, several bowl or basin-shaped features, and several bone or artifact concentrations.

McIntosh artifacts are typical of Central Plains tradition sites. Included are pottery, stone tools and debris, ground stone, bone tools and ornaments, pigment, and galena. Fine screen recovery techniques have recovered a faunal assemblage dominated by bison and fish remains.

Radiocarbon dates suggest that the site was occupied sometime during the fourteenth and possibly fifteenth century. Remains from migratory waterfowl, fish, and hibernating species of small mammals recovered from pit features suggest subsistence-related activities at the site were performed primarily during the warm months of spring into fall. Macrobotanical remains indicate a commitment to spring planting and fall harvest of maize, beans, and other cultigens. Raw materials used to make stone tools, as well as the manufacturing debris, are primarily from sources in eastern Wyoming, southwestern South Dakota, and northeastern Colorado. These data suggest that McIntosh site activities may have represented embedded strategies incorporated into bison hunting or travel routes to stone quarry sources. Evidence recovered from the McIntosh site challenges the notion that late prehistoric people ventured into the Sand Hills only to establish temporary camps.

Recent systematic survey efforts by the Historical Society have included a cultural resources



Waterfall on Spikebox Ranch.



Abandoned shed and corral on Spikebox Ranch.

reconnaissance along several lakes and portions of the North Loup River at the Spikebox Ranch in southwestern Cherry County. Thirty-eight archeological sites were identified and documented as the result of an initial inspection of approximately 1,100 acres. Excluding Paleoindian components, a nearly complete cross-section of Central Plains time periods is represented.

Topographically, sites were more densely distributed near lakes and in stream valleys. Cut banks exposed by erosion and overgrazed areas along rivers and streams afforded better visibility than dune tops. Sites located along streams and rivers were usually eroding from buried soils or lying on exposed buried soils. Upland dune fields yielded fewer sites than areas near water. Other than blowouts, dense vegetation including marsh and prairie grasses made locating sites along lake shores more difficult. Overall site density was 22.3 locations per square mile.

Nearly half of the identified sites are of Native American origin, but presently unassigned to a specific tribe or time period. About 30 percent of the cultural resources identified are affiliated Native American components. Although Paleoindian sites were not located, it is likely

that sites of this age exist on the ranch, but are deeply buried. Geologic investigations on ranches near Spikebox by Jim Swinehart and his University of Nebraska colleagues have uncovered buried sediments and peat beds radiocarbon dated between 14,000 and 5,000 years ago.

The oldest camps identified during the Spikebox survey are between 8,000 and 5,000 years old. Five Native American sites date to the Late Archaic and Woodland periods and are between 3,000 and 1,000 years old. The Mud Creek site, located east of the North Loup River and Mud Creek confluence, is the most impressive of these locations. The site consists of a scatter of pottery, animal bone, and stone debris across the surface of an exposed, dark soil. North Loup River erosion is actively removing portions of the site. Three Central Plains tradition (900–500 years ago) components were identified along the North Loup River. These are represented by pottery and projectile point finds. Two sites appear to be from the Post-Contact period (500–150 years ago). Form and surface treatment of ceramics from two identified sites indicate a protohistoric Pawnee or Lower Loup affiliation. Many ethnohistoric references attest that the Sand Hills region was a rich bison hunting range used by these and other tribes on a seasonal basis.

Nine historic Euroamerican resources were identified and documented. They include early homesteads and sites related to cattle ranching. One example is the Charles Carrier camp, located near the North Loup River crossing and Big Falls. The site consists of a cinder block barn, corral, foundation, well, and trash dump. Artifacts from the dump indicate this was a cattle station used from the 1920s to the mid-1950s.

Preliminary observations suggest cultural and paleoenvironmental resources on this and other ranches will likely be significant and varied.

At this point, Late Archaic, Woodland, protohistoric, and cattle ranching sites seem to be the most abundant. Spikebox Ranch offers an uncommon opportunity to gather large scale archaeological data within an environmentally diverse interior Sand Hills tract.



Excavation of ancient hearth near Theford.

Preserving Nebraska's Last Archeological Frontier

The Sand Hills is truly the last great frontier of Nebraska archeology. The region is vast and unique and has always been abundant in natural resources—particularly good water, herd animals, migratory waterfowl, and fish. The few excavations and surface surveys that have been completed, as well as an examination of local arrowhead collections, suggest the region has been used for more than 10,000 years. We also now understand the use of the landscape ranged from transitory camps to permanent villages—all before the arrival of cattle ranching.

Fortunately, sites are abundant and well preserved because so little land development occurs in the Sand Hills. Ironically, that same lack of development has resulted in few publicly sponsored research programs. We have come to rely largely on information offered by landowners and collectors. The Historical Society Archeology Division is actively seeking to work with Sand Hills landowners to document new sites along streams and lake shores.

Archeological remains are an important means by which we can understand the lives of ancient peoples, such as those who lived in the Sand Hills. Archeological sites are fragile and non-renewable resources. Looting for fun or profit has serious effects on significant sites. A disturbed site is nearly impossible to interpret for the benefit of science and public appreciation.

The Nebraska State Historical Society recognizes the need to balance archeological conservation and the public's desire to participate in research. This publication series is directed to this need. The Society also invites anyone to contact us about volunteer opportunities. The Society sponsors bus tours of sites and volunteer excavations for the general public. Several publications are also available that interpret Nebraska prehistory. *Central Plains Archeology* is a publication jointly sponsored by the Society and the Nebraska Association of Professional Archeologists. The journal reports the results of recent archeological investigations and is available at the Museum of Nebraska History in Lincoln.

For more information please call the Society archeological staff at Fort Robinson at (308) 665-2920, and 665-2918 or in Lincoln at (402) 471-4760. Our e-mail address is archnshs@nebraskahistory.org. Also, visit our website (nebraskahistory.org).

Additional Reading

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