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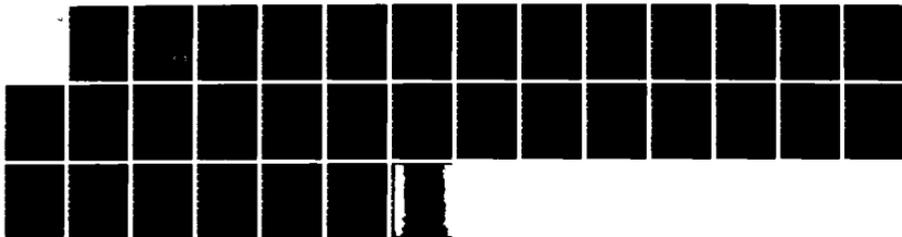
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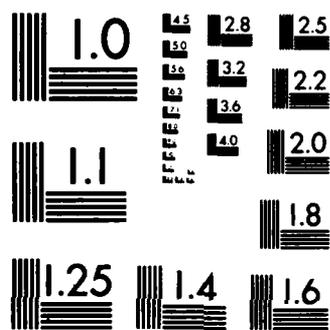
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AN ASSESSMENT OF CULTURAL RESOURCES
IN THE SALT CREEK BASIN

BUTLER, CASS, LANCASTER, SAUNDERS, AND SEWARD COUNTIES, NEBRASKA

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Edward Casimir Brodnicki
Omaha District, U.S. Army Corps of Engineers
October 1983

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ABSTRACT

A literature search and an assessment of cultural resources reported in the Salt Creek basin has been completed by the Omaha District, U.S. Army Corps of Engineers. A wide range of cultural resources has been found in the basin. The temporal range is from the Paleoindian period to the present and includes lithic scatters, prehistoric and historic Indian villages, and historic houses. The possibility of encountering additional cultural resources of a significant nature is considered good because of the density of previously located sites and the location of a critical resource, salt, in the area.

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INTRODUCTION

The Corps of Engineers was authorized under the Flood Control Act of 1958, to provide a system of improvements consisting of dams and reservoirs, channel clearings, enlargement and realignment of existing channels and levees. A total of 10 dams and other flood control measures were constructed in the Salt Creek basin. No cultural resource studies were done prior to construction because it was not judged necessary at that time for this type of project.

An assessment of cultural resources in the Salt Creek basin is being conducted for this study. This work will be integrated at a later time with the results of a pedestrian survey of land owned by the Corps of Engineers.

Project Description

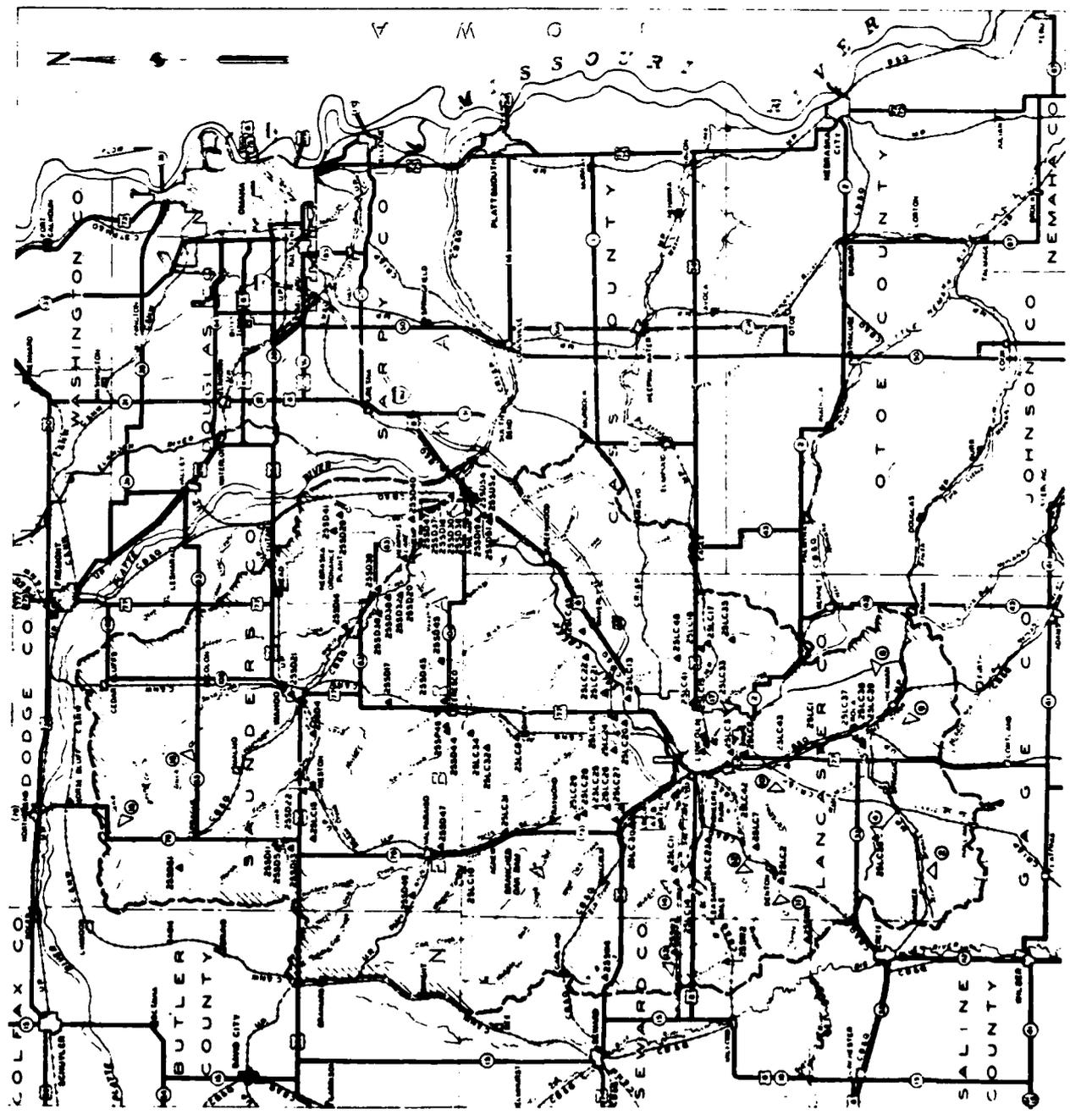
The 10 dam structures in the Salt Creek basin are Dam No. 2, Olive Creek, north of Kramer; Dam No. 4 Bluestem Dam, 2 miles south of Sprague; Dam No. 8, Wagon Train, 1 mile north of Hickman; Dam No. 9, Stagecoach, 1/2 mile south of Hickman; Dam No. 10, Yankee Hill, 2 miles southeast of Lincoln; Dam No. 12, Conestoga, 7 miles south of Lincoln; Dam No. 13, Twin Lakes, 6 miles south of Emerald; Dam No. 14, Pawnee, 3 miles southeast of Malcolm; Dam No. 17, Holmes Lake, in the northeastern periphery of Lincoln; and Dam No. 18, Branched Oak, 5 miles east of Garland (see table 1).

The Salt Creek basin is centered around the city of Lincoln. The basin includes Lancaster County, southeastern Butler County, Saunders County, northeastern Seward County, and western Cass County. Salt Creek originates in the area upstream from Roca in the southwestern corner of Lancaster County. The stream flows from Roca in a northerly direction to Lincoln and from there in a northeasterly direction to Ashland; it then empties into the Platte River a few miles downstream from Ashland. The Salt Creek basin drains an area of about 1,627 square miles (figure 1).

Study Definition

The purpose of this report is to present information on all reported cultural resources in the Salt Creek basin, evaluate the existing information, assemble a summary of the known information, assess areas for future research, and provide input that may be used for future management decisions in the Salt Creek basin by the Omaha District.

Figure 1



- LEGEND**
- WATER GAGE DATA
 - ⊙ DATA COMPLETED
 - ⊖ DATA IN CONTRACT
 - ⊕ DATA UNDERWAY CONSTRUCTION
 - ▲

SS - IRON VALLEY ENGINEERING - SS

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U.S. Army Engineers District
Contract No. 100-1-100-100

Salt Creek Watershed

Prepared by	
Checked by	
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The assessment includes information on all cultural resource loci in the Salt Creek basin that have been reported to the Nebraska State Historical Society. The work will not include the results of a pedestrian survey being conducted on all lands by the Omaha District, because these data are not available at this time.

Finally, the most important goal is to assemble a clear, concise summary of what is known about the area and provide clear direction for future research. This information can then be used when considering future development, such as further recreational use or construction within the damsite areas.

Justification

A large number of cultural resources are permanently lost to the public every year because of action initiated by man. The Federal Government has recognized its responsibility to conserve cultural resources. A series of mandates have been issued concerning the protection of cultural resources that may be impaired by projects constructed or funded by Federal agencies. These legal mandates and guidelines include the National Historic Preservation Act of 1966 (Public Law 89-665) as amended; Executive Order 11593, Protection and Enhancement of the Cultural Environment (13 May 1971: 36FR8921); the National Environmental Policy Act of 1969 (Public Law 91-190); and the Archeological Conservation Act of 1974 (Public Law 93-291). The Department of the Army and the Corps of Engineers has also issued guidelines. These include TM5-801-1, Historic Preservation, Administrative Procedures; ERs 1105-2-50, and 1105-2-55, Historic Preservation; DM 1130-2-11, Project Operations: Cultural Resources Protection, issued by the Omaha District, MRO PAM 1105-2-1, Cultural Resource Management Plan.

Project construction on the Salt Creek basin has been completed for more than 10 years and no new construction is planned. The purpose of this study is to present data on what is known about the cultural resources of the area, the study can then be used as a management tool for future decisions by the Corps of Engineers in the Salt Creek basin.

Study Methods

The methods employed in this study are found in various Federal guidelines, in particular 36 CFR, Part 66. These guidelines call for a literature review and a summation of data currently known concerning the area being studied. The following study methods were utilized to accomplish the goals outlined in the study definition previously presented.

1. Records Search. All records concerning archeological resources, including unpublished manuscripts; site records; survey reports; relevant correspondence; and university records were consulted at the State Historic Preservation Office, the University of Nebraska, and the Midwest Archeological Center (National Park Service). The resulting information was used to build a summary of all previous work reported in the area. This information helped to develop a pattern of spatial organization of the cultural resources.

2. Literature Review. Published and unpublished materials available in the University of Nebraska libraries, Midwest Archeological Center, and the Nebraska State Historical Society were consulted. These materials were examined to augment the materials previously mentioned and to provide a broader base for the planning of future research strategies.

3. National Register Consultation The most recent annual listing of the National Register of Historic Places was consulted, as well as subsequent notices published in the Federal Register. The purpose was to check the proximity of any of the structures in the basin to resources listed on the National Register of Historic Places.

4. Consultation. The professional staffs of the State Historic Preservation Office, Nebraska State Historical Society, and the University of Nebraska were consulted for information they might have concerning the project area. Their evaluation of the scope and quality of the study was also requested during the preparation of this report.

BACKGROUND

The purpose of this section is to provide information on the aboriginal utilization of the project area and to assess the potential for prehistoric occupation. This section should not be considered as an exhaustive appraisal of the local environment but rather a consideration of some factors that may have affected the occupation.

Natural Environment

The Great Plains region was initially thought to be a "great wasteland" by the original Euroamerican and European observers who visited the area (e.g. Henry 1856: 455-492). Early anthropologists and archeologists reflected this same bias. They felt that the Plains had been occupied by Native American groups only since the introduction of the horse and gun to the area. Archeological work has proven that the Plains has been inhabited

for 11,000 to 12,000 years. A reexamination of records of the Coronado expedition into the Plains illustrates examples of a nomadic lifestyle that is similar to the more well recorded one of the early historic period.

Flora and Fauna

The Salt Creek basin has been occupied by Euroamericans for more than a century. Many changes were made in the environment during this period. The native prairie has been plowed and replaced with domesticates such as wheat, rye, and soybeans. Other plants have been introduced for cattle raising, and grazing itself has altered the distribution and number of plants in the existing prairie communities. Timber cuttings during the historic period have reduced the number of trees and altered the distribution of trees (hardwoods would have been cut before softwoods) in the forest communities in eastern Nebraska.

Two major separate ecological communities can be identified in the Salt Creek basin. The predominant community is true prairie, dominated mostly by big and little bluestem prairie grasses, and is classified tall-grass-mid-grass prairie (Weaver 1965:3). The second community is the eastern deciduous forest. This plant community is limited to the major watercourses that ramify into the project area from the Missouri River. Typical trees found in this community are the oak, hickory, walnut cottonwood, elm, ash, elder, and hackberry. Succulent roots such as wild turnip and wild fruits (e.g. chokecherries and wild plum) are also located in this area.

The modern faunal assemblage of both the prairie and eastern deciduous forest communities has changed in presence and number since the advent of the Euroamerican and has been reduced in size and range (Gradwohl 1969:9). Important mammals of the prairie community include, the bison, pronghorn antelope, and smaller mammals such as the rabbit, prairie dog, and coyote. Important birds are the prairie chicken, Swenson hawk, rough-legged hawk, and ferruginous hawk (Shelford 1963:334).

The eastern deciduous forest includes such animals as beaver, muskrat, squirrel, deer, fox, rat, mink, skunk, wildcat, and bear (Gradwohl 1969:10). Streams in the area contain a variety of fish and molluscae.

A third minor environmental community is represented in the Salt Creek area. This community is associated with the saline springs and salt marshes. Saltgrass and wheatgrass are found in the more saline bottomlands.

A relatively wide variety of resources was available to the historic and prehistoric occupants of the area. Mammals from the woodland and prairie environment could have been exploited, in particular the bison which migrated through the project area. A variety of soft and hardwoods would have been available to the inhabitants. Floristic resources such as Indian turnip (*Psoralea esculenta*), Jerusalem artichoke (*Helianthus doloneices*), and a variety of berries could have been harvested from all environmental communities. The prehistoric inhabitants could have farmed the alluvial soil adjacent to the streams. These soils were very fertile and could have been tilled with simple tools. Prairie soils were not intensively tilled until the introduction of the steel plow that was capable of breaking the tough sod.

Climate

The climate of the Salt Creek basin can be characterized as continental and temperate (Beesley et al., 1948:6). The range of variation is typical for the corn belt; differences between winter and summer rainfall and temperature are wide. The Rocky Mountains obstruct westerly winds and consequently, southerly winds dominate in the summer and northerly winds dominate in the winter. The range of climatic variation in the Plains is greater than any other North American biome (Shelford 1963:329).

The average date of the last killing frost is 18 April and that of the first is 15 October. The average frost free season is 180 days. About 83 percent of the mean annual precipitation falls from April to October. The mean annual precipitation is 29 inches.

The climate is well suited for the production of crops raised by the modern inhabitants of the area. The frost-free season is long enough to raise all crops presently grown. The majority of precipitation falls during the growing season, when it is most needed. The climate is advantageous for modern farming and was probably favorable for prehistoric horticulture.

Geology

The surface of the Great Plains is dominated by debris transported or built by the streams in the area (Webb 1931:13). The top strata is loess, an aeolian transported material and is underlain by three layers of glacial drift, the Kansan, Aftonian, and Nebraskan series (Aikman 1926:7).

This debris rests upon a structured slope of uplifted marine rock sediments with a general eastward trend. The lowest members of the marine rock series is a thick series of limestone and shales, which are overlain by a thin bed of metamorphic

sedimentary rock, that dates to the Jurassic-Triassic periods which in turn, is overlain by a thick, stratum of red (Dakota Cretaceous) sandstone. The upper layers are respectively Graneros Shale, Greenhorn Limestone, Carlisle Shale, Niobrara Shale, and finally, Pierre Shale at the top (Aikman 1926:6 Condra and Reed 1943).

Sources of cryptocrystalline rock suitable for prehistoric tool manufacture are located in Nebraska and northern Kansas. Cryptocrystalline rock could have been extracted from the local stream and river gravels, but this rock appears infrequently in most sites in Nebraska, because of its poor working qualities (Carlson and Peacock 1975).

This loess deposit is the parent material for the majority of soils in the basin. The nature of the loess material and the underlying drift materials has resulted in the characteristic low rolling hills and deeply dissected stream channels. The bedrock is deeply buried and is only exposed in a few areas near major streams and rivers.

Pedology

The soils present in the project area have been transported by aeolian and glacial activity. In a few areas, the soils are derived from rock outcrops. The transported materials include loess, which is composed of fine grained, silt-sized particles deposited by the winds, and glacial drift, which is composed of materials of assorted sizes and types (Aikman 1926:9).

The soils in the Great Plains are noted for their ability to support extensive agriculture. The area was originally covered by a luxuriant tall grass vegetation (Beesley et al 1950:22). Because of this, the soil is friable; easily penetrated by air, roots, and water; and has a high moisture absorbing quality. The decay of the nature grasses has resulted in a soil containing an abundance of black, well-decomposed organic material (Beesley et al 1950:22).

The basin has been greatly modified over time by various forms of erosion and other geomorphological activities. The stream gradient is low and the stream pattern is a dendritic one with constantly fluctuating meanders. Soil movement is very dynamic in the area, resulting in a series of cutting and filling sequences of the local sediments. The end result is that previously unreported prehistoric sites are constantly being exposed and known ones are being buried. For example, site 25LC13 is a prehistoric hearth which is exposed in the cutbank of Salt Creek.

The predominant soil association is the Sharpsburg series, which has developed from the Peorian loess on the upland areas. These soils are considered characteristic of the Central Lowland Area (Beesley et al 1948:67). Other soil associations found in the basin are the Waukesha silty clay loam, Carrington silty loam and Butler silty clay loam (Beesley 1950:68).

Physiography

The original depositional surface of the area has been modified by erosion and only small patches of the original till plains remain in the flat table-like uplands (Sautter 1976:69). The general land surface consists of a succession of undulating and well-divided uplands separated by many relatively narrow valleys with gently sloping sides and nearly level bottoms.

The uplands in the basin can be characterized as moderately to steeply sloping with slopes gradually growing steeper near Salt Creek. Relief is most pronounced near the western edge of the basin. The alluvial bottomland occupy only a small portion of the total land area. Terraces are 10 to 30 feet above the present flood plain. Flood plain deposits follow all the streams and, in most cases, are relatively narrow with the tendency of the stream action to deepen rather than widen the valley.

Summary of Known Archeological Resources Paleoindian Period

The earliest documented period of occupation in the Great Plains is labeled the Paleoindian period; it dated between 10,000 B.C. to 5,000 B.C. Earlier occupations may have occurred, but they have not been conclusively documented. The earliest inhabitants of North America probably migrated from Siberia during interstadials of the Wisconsin glaciation or the preceding Sangamon interglacial epoch (Sanders and Marino 1970:27).

Material culture remains considered characteristic of the Paleoindian period consist of lanceolate-shaped projectiles, leaf-shaped knives, and small scrapers thought to be used for fleshing hides. Chipped stone tools associated with this period exhibit a high degree of technical proficiency. The subsistence of this period consisted of hunting and gathering, including exploitation of Pleistocene megafauna (Sanders and Marino 1970:27).

The Paleoindian period is subdivided into three phases, which are recognized by stylistic and technological change in the lithic industry. These three phases are the Clovis (10,000 to 9,000 B.C.), Folsom (9,000 to 7,000 B.C.), and Plano (7,000 to 5,000 B.C.).

We have very little actual knowledge about this period. Sites that have been identified are limited to special activity areas that contain the distinctive projectile points associated with the period. Material dated to this period is often observed in a disarticulated context. Isolated fluted points are eroding out of the present ground surface and thousands of artifacts have been found in such nonassociated contexts.

It is possible that sites that date to the Paleoindian period have not been correctly identified. The temporal affiliation of Paleoindian sites is generally identified only on the presence of diagnostic projectile points. A Paleoindian site that does not contain these diagnostic artifacts probably will not be identified correctly. Another point is that Paleoindian sites that were reported earlier may have been incorrectly identified.

A shift in the climate of the area began in the period between 13000 to 14000 B.P. to a drier, more arid climate. The streams and lakes of the earlier time dried up and the pine parkland environment of the plains shifted to a grassland between 9,000 - 10,000 B.C. The Pleistocene megafauna became extinct during this increasingly drier shift in the climate.

Two sites in the Salt Creek basin associated with the Paleoindian period have been reported to the Nebraska State Historical Society. A projectile point classified as Scottsbluff-Alberta has been found at Site 25LC39. A Scottsbluff point has a broad, sharp point biconvex in cross-section with prominent shoulders (Wedel 1961:66). Alberta points are commonly found in the northwestern plains; the points are smaller and the stem is longer than the Scottsbluff points, the base is slightly convex, and the tip is somewhat blunted (Wormington 1957:137).

An Agate Basin projectile point was found on site 25SD46, in addition to material associated with Archaic and Nebraska phase. Points associated with the Agate Basin are long and slender, with narrowed straight or rounded base and fine marginal retouching (Wedel 1961:72) (see table 2).

Archaic Period

The period following the Paleoindian period was considerably different. The climatic shift caused a change in the flora and fauna to those adapted to the drier climate. The resources that were available to the inhabitants of the basin also shifted. This period is also referred to as the Forager.

Table 2
 Sites Recorded in the Salt Creek Watershed
 Lancaster County

<u>Site</u>	<u>Affiliation/Type</u>	<u>Investigator/Agency</u>
25LC1 (Schrader)	Central Plains/ village site	Hill/NSHS
25LC2	Central Plains/ village site	Hill and Kivett/NSHS
25LC3	Central Plains	Frantz/NSHS
25LC6	Possible Woodland/ occupation	Frantz/NSHS
25LC7	Unknown	
25LC8	Woodland/occupation	Kivett/NSHS
25LC10	Possible late Archaic or Woodland	Marshall/NSHS
25LC11	Woodland and possible Central Plains	Marshall/NSHS
25LC12	Destroyed during highway construction	
25LC13	Prehistoric/Hearth exposed in Salt Creek cutbank	Carlson-Holen/NSHS
25LC14	Central Plains/village	Gant/NSHS
25LC15	Euroamerican/house outbuildings	R. Kivett/NSHS
25LC17	Central Plains/occupation site	Carlson/NSHS
25LC18	Archaic/camp	Carlson/NSHS
25LC19	Prehistoric/lithic scatter	Carlson/NSHS
25LC20	Unknown/lithic scatter	Carlson/NSHS

Table 2 (Cont'd)
 Sites Recorded in the Salt Creek Watershed
 Lancaster County

<u>Site</u>	<u>Affiliation/Type</u>	<u>Investigator/Agency</u>
25LC21	Central Plains/lithic scatter	Carlson/NSHS
25LC22	Unknown/dense lithic scatter	Peacock/NSHS
25LC23	Unknown	
25LC24	Unknown/midden lense in cutbank	Jones/NSHS
25LC25	Central Plains/bone and lithic scatter	Carlson/NSHS
25LC26	Central Plains (and possibly Woodland and Archaic)/lithic scatter	Carlson/NSHS
25LC27	Historic and prehistoric/lithic scatter and possible structure	Carlson/NSHS
25LC28	Prehistoric and historic	Carlson/NSHS
25LC29	Central Plains/scatter	Carlson/NSHS
25LC30	Central Plains/small occupation	Carlson/NSHS
25LC31	Unknown/camp	Carlson/NSHS
25LC32	Unknown/lithic scatter	Carlson/NSHS
25LC33	Historic/house	
25LC34	Paleoindian/isolated find	Jensen/NSHS
25LC35	Woodland/vessel discovered	NSHS
25LC37	Historic/occupation	McClure and Murphy/ NSHS
25LC36	Central Plains/occupation	Kivett/NSHS

Table 2 (Cont'd)
 Sites Recorded in the Salt Creek Watershed
 Lancaster County

<u>Site</u>	<u>Affiliation/Type</u>	<u>Investigator/Agency</u>
25LC38	Historic/occupation	Murphy/NSHS
25LC39	Historic/occupation	Murphy/NSHS
25LC40 (capitol addition)	Historic/structure	Murphy/NSHS
25LC41	Prehistoric/isolated find	Steinacher/NSHS
25LC42 (Lincoln Pottery Works)	Historic/industrial	Ludwickson/NSHS
25LC45	Prehistoric/lithic Scatter	McGinnis/NSHS
25LC48	Archaic/camp	Carlson/NSHS

Table 2 (Cont'd)
Sites Recorded in the Salt Creek Watershed
Seward County

<u>Site</u>	<u>Affiliation/Type</u>	<u>Investigator/Agency</u>
25SW2	Central Plains/possible village	Wedel/NSHS
25SW3	Woodland/lithic scatter	Marshall/NSHS
25SW4	Prehistoric/lithic scatter	Marshall/NSHS
25SW11	Prehistoric/bone and cobble fragments	Holen/NSHS

Table 2 (Cont'd)
 Sites Recorded in the Salt Creek Watershed
 Saunders County

<u>Site</u>	<u>Affiliation/Type</u>	<u>Investigator/Agency</u>
25SD4	Prehistoric/lithic scatter	Wedel/NSHS
25SD5	Prehistoric/lithic scatter	Marshall/NSHS
25SD11	Undetermined/shard and lithic scatter	Wedel/NSHS
25SD13	Unknown/bone and lithic scatter	Marshall/NSHS
25SD14 (Ithaca site)	Unknown/mass inhumation	Blackman/NSHS
25SD17 (Gibson site)	Unknown	
25SD18	Destroyed by borrow pit for Highway 63	Kivett/NSHS
25SD19	Unknown/lithic scatter	Frantz/NSHS
25SD20	Unknown/lithic scatter	Gant/NSHS
25SD21	Protohistoric Native American/inhumation	Jones/NSHS
25SD22	Late prehistoric/lithic scatter	
25SD29	Unknown/lithic scatter	Carlson/NSHS
25SD30 (Stambaugh house)	Historic/house	Peacock/NSHS
25SD32	Prehistoric/lithic scatter	Lindsay/DAR-UNL
25SD36	Prehistoric/lithic scatter	Lindsay/DAR-UNL

Table 2 (Cont'd)
 Sites Recorded in the Salt Creek Watershed
 Saunders County

<u>Site</u>	<u>Affiliation/Type</u>	<u>Investigator/Agency</u>
25SD37	Prehistoric/lithic scatter	Lindsay and McClure/ DAR-UNL
25SD38	Central Plains/possible village	Lindsay/DAR-UNL
25SD39	Prehistoric/lithic scatter	Lindsay & McClure/ DAR-UNL
25SD40	Prehistoric/lithic scatter	Lindsay & McClure/ DAR-UNL
25SD41	Prehistoric/lithic scatter	Lindsay & Hunt/ DAR-UNL
25SD42	Prehistoric/bones eroding out of cutbank at depth of 20 feet	Carlson/NSHS
25SD43	Prehistoric/burial mound (?)	Carlson/NSHS
24SD44	Historic/stage station site	Carlson/NSHS
25SD45	Prehistoric/burial	
25SD46	Archaic, Paleoindian, Central Plains/lithic scatter (Agate Basin point)	Carlson/NSHS
25SD47	Prehistoric/lithic and catlinite scatter	Carlson/NSHS
25SD48	Historic/sod house	Jensen/NSHS
25SD49	Prehistoric/shard and lithic scatter	Lueck/UNL
25SD51	Prehistoric/lithic scatter	Cook/DAR-UNL
25SD52	Prehistoric/lithic scatter	Ludwickson/NSHS
25SD54	Prehistoric/lithic scatter	Ludwickson/NSHS

The Archaic period is perhaps the second most poorly understood period in Great Plains prehistory. Research on this period was neglected by many archeologists until the 1940's. Few artifacts have been recovered from sites associated with the Archaic period, and it does not have the "glamour" of the Paleoindian or Plains Village periods. Some archeologists consider this period more closely related to the woodland environment (Wedel 1961; Caldwell and Henning 1978).

A wider variety of specialized tools are represented in the Archaic tool kit than the Paleoindian period. Chipped stone artifacts, bone awls, needles, harpoons, fishhooks, and pecked and ground stone tools such as axes, milling stones, and hand grinders have been found. This may mean that a wider variety of resources were being exploited during this period than in the earlier period. In summary, the Archaic lifeway did not differ greatly from that of the Paleo-Indian period. A wider variety of resources may have been exploited, but essentially a hunting and gathering existence was still followed.

At least three sites in the Salt Creek basin have been reported to the Nebraska Historical Society as containing Archaic material, such as 25LC10, 25LC13, and 25SD46. It is possible that some of the lithic scatters noted in the basin were deposited during the Archaic period, but no diagnostic artifacts were recovered (see table 2).

Woodland Period

Several important changes occurred during the Woodland period (ca. A.D. 1 to 1,000 A.D.) in the Great Plains, ceramics in limited quantities appeared for the first time and the first reliable evidence of agriculture can be observed (Wedel 1961:205). The climate became somewhat moister than it was during the Archaic period, and it seems to have been similar to the modern mesothermal climate of the Great Plains.

Materials associated with this Woodland period include small, temporary villages, campsites, mounds, and burials (Caldwell and Henning 1978:123). Sites that have been excavated are generally small and shallow, and contained small quantities of artifactual material. Increasingly complex mortuary practices such as formal burials and manmade mounds appear at this time.

Materials associated with the Woodland period have been reported to the Nebraska State Historical Society at six sites in the Salt Creek basin. Two sites appear to be occupation sites. Site 25LC6 is recorded as a Woodland period occupation site, and Site 25LC8 consists of a 50-foot-long stratum in a drainage ditch. Material recovered from this possible village site is

thought to be associated with the Loseke, Eagle and Scalp Creek Foci. These foci are defined from sites excavated in central and northern Nebraska and southern South Dakota; storage pits, hearths, and light pole structures been found at these sites.

Sites 25SW3 and 25LC26 were reported to the Nebraska State Historical Society to contain Woodland components. A possible Woodland ceramic vessel, according to the State site form, was recovered in a stream cut at Site 25LC35, at a depth of 10 feet below the modern land surface. Ceramics similar to those found in the Woodland component on the Walker-Gilmore site were observed at Site 25LC11 (see table 2).

The Plains Village Period

The Plains Village period marks the florescence of adaptation by Native Americans to the Great Plains. Material cultural remains associated with this tradition show a sophisticated and wide ranging subsistence strategy. Evidence of cultivation, hunting, and fishing are abundant; pottery is comparatively plentiful and the artifact inventory is more extensive and varied than that associated with the earlier Woodland period (Wedel 1961:94).

One of the characteristic artifacts associated with the Central Plains Tradition is the earthlodge. The earthlodge was a substantial living structure capable of providing the occupants a stable and relatively comfortable shelter through the extremes of the Great Plains climate. This structure was made by excavating a shallow pit and placing four posts around the center. Smaller posts were placed on the periphery, and rafters were placed from the center posts to the wall. The rafters were then covered with a layer of saplings, brush or grass mats, and finally dirt. A smoke hole was left in the center, and an entrance hall was generally placed to the east. The structure was generally rectangular in outline (historic earthlodges were round). The interior of the earthlodge contained a fire pit and a series of storage pits, called cache pits.

Corn, beans, squash, and sunflowers were cultivated on the alluvial soils adjacent to the rivers and streams. Tools characteristic of this period are bison scapula hoe and small triangular side-notched projectile points. Vessels associated with the Nebraska phase are commonly globular with simple outcurved rims; the exteriors were left smooth or treated with a cord wrapped paddle. These vessels often have small handles or lugs on the rim (Wedel 1961:96) Some vessels have shell temper or polished black finishes that may indicate associations with the Mississippian cultures farther to the east or south.

The people associated with the Plains Village period were probably antecedent to the Pawnee, who were present when the first Euroamerican observers arrived. The material culture associated with late prehistoric and early historic periods is very similar. The only substantive difference in material culture is the presence of Euroamerican trade goods among historic Native American remains and some differences in other tool types.

The density of sites identified with the Plains Village period is greater than the other preceding periods. It is difficult to account for this difference solely on the premise that the population was higher at this period (though this does seem to be the case). Sites dating from this period are more easily recognizable than those from earlier periods because of the extensive structures, rich artifact inventory, and the abundance of ceramics easily identified with this period. A relatively large quantity of sites associated with this period have been observed in the Salt Creek basin; another striking difference is the number of occupation sites reported.

A total of 15 sites with a component identified with the Plains Village have been reported to the Nebraska State Historical Society in the Salt Creek basin (see table 2). A total of eight sites, 25LC14, 25LC17, 25LC30, 25SD38, 25SW2, 25LC36, 25LC1, and 25LC2 are described on the State site forms as occupation or village sites. Site 25LC1, the Schrader site, is a particularly important site, since it is the only site that was excavated in the basin.

The Schrader site is located 9 miles south of Lincoln on Salt Creek. Three earthlodges, which appeared to be part of a more extensive village site, were excavated by the Nebraska State Historical Society (Hill and Cooper 1937). The artifact assemblage found at the site was thought to demonstrate a fusion of elements common to both the Upper Republican and Nebraska aspects (Bell and Gilmore 1936). This site was thought to be associated with the Table Rock Focus was later assigned to the Nebraska phase (Blakeslee and Caldwell 1979).

Historic Indian Occupation

The material culture of the Indian groups who occupied the project area during the historic period does not differ greatly from the immediate prehistoric period. The subsistence pattern, living structures, and artifacts, associated with everyday life are similar. One difference is that the earth lodge of this period was round in outline, rather than the rectangular form used in the prehistoric period. A variety of Euroamerican trade goods were introduced which include glass beads, metal projectile points, and metal cooking vessels. Native crafts such as

ceramics and chipped stone tools are found in a lower density on protohistoric sites than sites associated with the earlier periods.

It is difficult to determine which of the known Indian groups held hegemony in the project area because it seems to have changed. The three groups who occupied the project area were the Pawnee, a branch of the Caddoan group related to the Arikara, and the Oto and Omaha, who were part of the Chiwere Siouian group. The Oto and Omaha probably emigrated from the western Great Lakes area sometime by 1650 (Olson 1966:25) and originally followed a subsistence pattern oriented to the woodland environment. The Oto and Omaha were both following a subsistence pattern similar to the other seminomadic groups in the Great Plains when the Euroamericans arrived. The Pawnee had probably emigrated to Nebraska before 1541 (Olson 1966:25) from an area to the south and their life style can be considered typical of other seminomadic groups and similar to the Oto and Omaha groups. The Pawnee lived in substantial earth structures. They grew cultigens, such as corn, beans, squash, and sunflowers, which they traded to the completely nomadic groups. When the Pawnee left to hunt, they used the traditional skin covered tepee. The Pawnee had developed a successful subsistence strategy that was adapted to the special environment of the Great Plains; this strategy was adopted by later Native American immigrants. The Euroamericans also adopted or modified some parts of the Indian subsistence patterns for their own use, including some of the Pawnee cultigens, such as "Ree" corn, the Great Northern bean, and earth-sheltered homes.

The United States Government acknowledged a claim by both the Pawnee and Oto to the basin area. On 9 October 1833, the Confederated bands of the Pawnee ceded all rights or title to lands south of the Platte River (Royce 1897:750). The Oto and Missouriia were considered to have a claim to this same area. The Government also made a treaty with the Oto and Missouriia on 15 March 1854 to cede all territory they claimed west of the Missouri River (Royce 1897:790).

In actuality, the basin was intensively inhabited during the early historic period by the Oto and exploited by the Pawnee and Omaha at different times. There is some documentary evidence that a Omaha village was located along Salt Creek near the present site of Lincoln (Dorsey 1884, 1886). All other references state that the Oto inhabited the basin (see table 2).

As previously discussed, the basin contained salt in quantities that could be processed by the inhabitants. Bourgmout, an early traveler in the area, mentioned that the Oto processed salt in this area in 1714 (Hartley n.d.:91). Lewis and Clark bought

salt from the Oto during their journey of exploration (Hartley n.d.:91). Other Indian groups traveled into the area, which was considered the domain of the Oto, to collect salt (Gilmore 1914:149). The Ponca, who were settled near the mouth of the Niobrara, collected salt in this area (Hartley n.d.:94). The first Euroamerican settlers also collected the salt and the area was originally settled to process salt (Beesley et al 1948:11).

Euroamerican Occupation

The initial Euroamericans to enter the basin may have been trappers and traders in the seventeenth and eighteenth century. These individuals ranged throughout Nebraska trading with the Indians and trapping beavers for the lucrative markets in the eastern United States. The majority of these individuals did not leave written accounts that might document their presence in the area.

There is evidence that they were near the area. Etienne Veniard de Bourgmont wrote of the Platte River in 1714 (Creigh 1977:21) and a Spanish military expedition under the command of Villasur visited a Pawnee Indian village near the mouth of the Platte at about this same time (Olson 1966:25). Evidence that would be traceable to their influence would be trade items, such as iron arrow points, knives, copper vessels, and other metal artifacts.

Euroamerican settlers began to arrive in the 1850's. Some settlement occurred during the gold rush when travelers settled down in Seward County (Williams 1921:1). Nebraska was granted territorial status in 1854.

The speed of settlement increased after the end of the Civil War. The provisions of the Pre-Emption Act of 1841 allowed settlers who had taken possession of government land prior to official release to regularize their patent by paying \$1.25 an acre or use a military bounty land warrant. Settlers were able to lay claim to up 160 acres of land in Nebraska for the price of a filing fee after the 1862 passage of the Homestead Act (Creigh 1977:32). Both acts were the cause of the rapid settlement and development of the basin in between 1866 and 1890.

In 1869, the capital of Nebraska was moved from Omaha to Lincoln. This caused an increase in the speed of the settlement of the area. In 1870, the Burlington and Missouri River Railroad built a line that connected Lincoln to Omaha and Kearney. The establishment of the railroad caused many profound changes in the area. A rural economy developed that was heavily dependent on labor-saving devices and the export of agricultural products to eastern and European markets.

The basin was intensively settled by immigrants from several European countries. The area around Swedeburg, Malmo, and Mead were settled by 300 Swedish families who were organized by a Lutheran minister, Pastor Larson, in 1869 (Strom 1972:2). The area north and south of the University in Lincoln was settled by German-Russians and is called the "Russian Bottoms." German-Russians are the descendents of Germans who settled in Russia during the eighteenth century.

The Euroamerican settlement of the Salt Creek basin had a major influence on the land that was greater than the preceding occupation. Artifacts associated with this period include metal tools, ceramics, building foundations, and other things that are similar to those found in a contemporary setting. Rural development also resulted in the straightening of stream channels, erection of dams and structures and land improvement methods, such as landscaping. Documentary data also exists concerning some of the activities in the basin at this time.

National Register of Historic Places

The most recent annual listing and all subsequent additions to the National Register of Historic Places were consulted in the Federal Register. The following sites are listed:

Kennard House	Lincoln, Nebraska
South Bottom Settlements	Lincoln, Nebraska
25LC1/Schrader	8 miles south of Lincoln

Summary and Results of Previous Investigations

Knowledge is not gained in a vacuum, but it is the product of human interests and prejudice. Our knowledge of the archeological resources of the Salt Creek basin is the sum of research done by a variety of researchers. We, therefore, cannot accurately assess the archeological data base unless we have some understanding of the individuals who did the work and of their orientation. Individuals who worked in the Salt Creek basin concentrated on certain problem and geographical domains to the exclusion of other areas.

Previous Field Work

A relatively large number of sites have been located within the Salt Creek basin. The Salt Creek basin has not been the center of a particular research focus, but research was done in the basin because it simply happened to be located near the center of the Nebraska State Historical Society and a major population center. Research done in the area has contributed substantially to the development of a comprehensive view of prehistoric occupation of the Central Plains region, but have

provided little specific information concerning the range of cultural resource that might be expected within the Salt Creek basin.

The original field work within the Salt Creek basin, in particular, and Nebraska in general, was done by E. E. Blackman. Blackman worked sporadically in Nebraska from the turn of the century to the 1930's. He was typical of other archeological pioneers of the time. He had no formal training in archeology and his work was largely descriptive in nature. He visited the Gibson site (25SD17), which he described as an Indian village with a number of associated burials (Blackman 1903:297). He visited a series of important early historic Indian sites near Fremont, called Leshara (25SD2) and McClaine or McClean (255P8). He described artifacts on both sites and performed limited testing on the McClaine site. He stated that both sites had been inhabited until recently by the Pawnee (Blackman 1903:296). Blackman also visited the Ithaca site (25SD14), where an awesome amount of human bone was recovered (Blackman 1903:298). Blackman described and reported a wide variety of sites that were brought to his attention by local residents. He investigated historic and proto-historic indian sites, a research focus which was emphasized later in the studies of Nebraska prehistory.

A great expansion in the archeological knowledge of the area took place in the 1930's. A staff of professional archeologists at the University of Nebraska and the Nebraska State Historical Society began an ambitious research program. This program was concentrated on defining the cultural-historical framework for the State. One particular focus was the archeological sites associated with the historical Indian groups such as the Pawnee, Omaha, and Oto. A substantial portion of this work was subsidized by funds associated with the New Deal.

In 1935, A. T. Hill and Lamb of the Nebraska State Historic Society excavated the Schrader site. The site is located 9 miles south of Lincoln along Salt Creek (Hill and Cooper 1937:223). Three prehistoric structures were excavated. This site is important because it is the only site actually located along Salt Creek and it does represent a genuine Plains Village site.

In addition to these sites, a variety of other sites near the Salt Creek basin were recorded and analysed. These sites include the Yutan site, a protohistoric Oto site; the Leshara and McClaine sites, historic Pawnee sites; the Leary site, an Oneota site and the Walker-Gilmore site, a Late Woodland site. The archeological work done during this period filled in all major gaps in the prehistory of Nebraska and created several methodological advances, such as the direct-historical approach

(Willey and Sabloff 1980:108). The New Deal funding that supported a great deal of this work was terminated at the beginning of the Second World War.

Archeological work during the 1960's to present was quite different in nature and scope. The majority of work was designed to comply with the relatively new laws and guidelines on historic preservation, such as Executive Order 11593, the National Historic-Preservation Act, and other Federal legislation. Most research was done at this time to locate and evaluate cultural resources in advance of federally funded construction of water control projects and highway construction. The older research was primarily designed to define the cultural-historical framework and can be characterized by meticulously excavated sites chosen to explicate some particular period. The work associated with cultural resource management provided information largely derived from reconnaissance level studies in eastern Nebraska. The concentration was on geographical areas, irrespective of specific cultural-historical concerns that the researcher might have.

In 1970, Roye Lindsay surveyed land that would have been impacted by the construction of the Ashland reservoir. Lindsay, who was employed by the University of Nebraska at Lincoln, reported a number of sites that are located within the Salt Creek basin (Lindsay 1972). The largest number of sites reported after the Second World War was by employees of the Nebraska State Historical Society. These individuals include Gayle Carlson, John Ludwickson, Marvin Kivett, Curtis Peacock, Terry Steinacher, David Murphy, Richard Jensen, Wendell Frantz, James Marshall, and Robert Gant. Many of these sites were located during reconnaissance level studies done by these employees prior to the implementation of a wide variety of State sponsored projects, such as bridge building, road construction, and State recreation areas.

Archeological reconnaissance was also done in a number of areas around the Salt Creek basin. The Soil Conservation Service (SCS) has constructed or is planning to construct a series of flood retarding structures in eastern Nebraska. Consult Brodnicki and Pepperl 1981, Brodnicki 1981, and Brodnicki 1980 for more detailed information on the nature, extent, and location of archeological research funded by the SCS in eastern Nebraska.

In summary, what information does the previous research in Nebraska provide us with? We know, in a general way, the culture history of the area, the nature of the material culture associated with each period, and a good knowledge of the early historic Indian occupation, this knowledge is based upon ethno-historic data, life histories, and excavation of protohistoric

sites. We also have an idea of where sites are found in relation to the topography. The older work concentrated on sites located along the major drainages such as the Platte, Missouri, Elkhorn, and Niobrara Rivers. The later cultural resource management studies were concentrated in the flood plain and alluvial areas of secondary and tertiary streams.

The existing site data does not include information that would help us to examine a representative sample of cultural resources in the area. Our knowledge is limited to certain geographical areas in the State and certain kinds of sites, such as habitation sites. We cannot make accurate predictive statements about the appearance of cultural materials in the Salt Creek basin, based on the available information.

Future Research Orientation

One major goal of any future research should be to provide a more accurate and detailed understanding of the prehistoric and historic occupation of the Salt Creek basin. This work should extend further than simply assembling more pieces of data; a representative sample of sites should be examined and studied in a problem oriented approach. Sophisticated mathematical analysis could be done with data collected in this manner; most of these techniques could not be applied to the current data in a meaningful manner.

Another set of important questions relate to the historic Indian tribes who occupied the area and their relationship to each other. The location of the Omaha village on Salt Creek should be relocated and studied; this would represent an important source of information on the area and the Great Plains as a whole.

The Salt Creek basin is at the boundary between the Missouri drift hills zone to the east, which is an extension of the eastern woodland environment, and the mixed grass prairie to the west. The Omaha originally were a tribe that followed a subsistence pattern associated with the woodland environment, but made the adaptation to the prairie. This transformation occurred in and near the project area and should be studied.

A critical dietary necessity, salt, is located in the area. One important point would be to explore the manifestation of salt processing and trade. Salt must have played a critical role in the Plains interband trade network during the protohistoric and historic periods.

SUMMARY AND CONCLUSIONS

No systematic cultural resource investigations have been undertaken in any part of the Salt Creek basin. Our knowledge on the manifestation of cultural resources in the area is, therefore, uncertain. No representative sample of cultural resources exists and any predictive statements about the occurrence of cultural resources are very limited. It is possible to reliably discuss the presence of cultural resources, but we cannot extend our statements to include the absence or relative frequency of these resources. We can only make truly powerful statements about the density and distribution of cultural resources when we have reliably gathered data from statistically valid samples.

The previous research indicates several points. The Salt Creek basin shows evidence of human presence dating from the Paleoindian period to the present period. The Salt Creek basin contains a mineral critical in human nutrition, salt, and a unique environment, salt marshes. Salt was not available elsewhere in the area and might represent a critical trade good.

A number of habitation sites have been reported in the basin and one has been excavated. It is possible that other, unreported habitation sites may be located in the project area.

In summary, the research indicates that a wide variety of cultural resources are located in the basin and that the location and distribution of these resources are not well enough understood to easily predict their appearance. It will be necessary to prepare project specific research for all future work in the project area because it is very possible that unreported cultural resources may have been disturbed in the past.

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