

## RESEARCH DESIGN AND METHODOLOGY

This investigation involves the intensive survey of select portions of the Salt Fork of the Arkansas River basin in Grant and Kay counties to identify prehistoric sites. Previous research has involved very little survey of the Salt Fork River basin. One survey has included a small part in far western Grant County and portions of the river valley in Alfalfa County (Ferring et al. 1976). This survey, however, recorded no prehistoric sites and only one historic dugout. Some small surveys have been conducted along tributaries in Kay County. Wallis (1980) investigated Lost and Duck creeks, tributaries of the Chikaskia River, finding evidence of prehistoric occupation from the Middle Archaic period to the Late Prehistoric, plus some late historic farmsteads. Most of the prehistoric sites, however, are considered to be Late Archaic or Woodland camps. In addition, avocational archeologists have reported a variety of sites along Bois d'Arc Creek, the Chikaskia River, and the Arkansas River near its junction with the Salt Fork (see Table 1). These sites include Middle to Late Archaic camps, Woodland camps and villages, and some Late Prehistoric villages. Other research includes extensive survey and excavation in Kaw Lake northeast of the study area and surveys and tests along Salt Creek in western Osage County near the Florence-A sources.

The current project is part of the Oklahoma Historic Preservation survey and planning process. Thus, one objective of the survey is to record and assess archeological resources for future land management and preservation planning. Given the relatively high

density of sites recorded in the eastern end of the Salt Fork basin and in nearby areas just east of the basin, we chose to concentrate the efforts of this project on the middle portion of the Salt Fork basin in western Kay County and the eastern half of Grant County. There are only 24 sites recorded in this portion of the Salt Fork basin. These range from the historic 101 Ranch to Middle Archaic camps related to the Calf Creek culture. There has been limited investigation of 34GT9, a Woodland or Late Prehistoric camp, but there is no published data on this site. The survey, thus, should permit preliminary evaluation of prehistoric and historic site distributions west of the Arkansas River, and it may provide evidence to determine if different types of occupations occurred on the western prairies. The survey should also provide some information on the extent of use of Florence-A chert in the prairies west of the source area and quarries. In general, the survey is designed to provide information on the distribution and types of prehistoric sites in the middle portion of the Salt Fork of the Arkansas River basin.

In terms of site distribution, previous research in north central Oklahoma has provided some comparative data on settlements in the area just east of our project. Research from the Kaw Lake and Salt Creek projects indicates occupation of that area from at least the Middle Archaic period through the historic period. Reported sites related to the Archaic are typically small limited activity camps scattered along terrace settings, or upland lithic extraction locales. Archaic occupations are not common and the majority of these

appear to be Late Archaic. There is evidence, however, that some Archaic sites are deeply buried in terraces along both small streams and rivers (e.g. the Calf Creek component at the Kubik site is buried over 1.4 meters beneath the current surface). In contrast, the Woodland period is marked by larger hamlets, base camps, and small activity sites. In the Kaw Lake area, Woodland period sites are the most common occupation identified. This period is suggested to include a seasonal settlement pattern. Base camps or semi-permanent villages on second and third terraces of the Arkansas River may have been “the loci for summertime horticultural activities” (Hartley 1974:131). Winter and fall hunting/gathering camps are smaller and usually lack ceramics. These small camps may be on smaller streams or lower in the river valley.

Vehik (1985b) has divided the Woodland into three periods (I, II, and III) with diverse settlement characteristics. Woodland I is distinguished by base camps and villages on higher terraces of the Arkansas River and along tributary streams to Salt Creek. Woodland II includes base camps and possibly villages along the Arkansas River. Settlement appears to have been less permanent or less intense at this time. Woodland III seems to be characterized by base camps and temporary camps on low terraces along both the Arkansas River and smaller streams. Late Prehistoric occupation includes villages on higher terraces of the Arkansas River and larger streams, and smaller temporary occupations usually along streams. The villages appear to be permanent occupations associated with horticulture, whereas the

temporary sites are hunting/gathering locations or lithic extraction sites. Some large villages also appear on smaller creeks near the Florence-A quarries. These Late Prehistoric villages may have been used to control access to this key resource (Vehik 1985b:324).

Based on the work east of the project area several questions can be addressed with survey work in the middle Salt Fork basin. Of obvious interest is the question of the existence of sites related to various prehistoric periods in this part of the basin. Previously reported sites indicate that the area was occupied prehistorically, but the information is limited on which periods are represented and in what settings these sites occur. Another research objective of the current project is to compare site densities and settlement patterns for sites of various periods in the Salt Fork basin with those documented in the nearby Arkansas River basin. Are sites of various prehistoric periods similar to those found near the Arkansas River, and are they found in similar settings? A related problem is the use of lithic resources. Given the location of the project area some distance from the Florence-A quarries and other Flint Hills chert sources, are Salt Fork prehistoric groups using primarily local lithic resources or transporting and trading nonlocal materials from the Flint Hills or other locations? Do the patterns of lithic material use change through time?

In order to determine settlement patterns for Archaic, Woodland, and Late Prehistoric period groups, the project will attempt to identify the period of occupation for prehistoric sites and determine the type of occupation or the function of each site. Diverse

topographic settings are included to evaluate the distribution of sites in various settings. The frequency of Archaic, Woodland, and Late Prehistoric sites in the area can then be examined to compare potential settlement patterns through time and between this area and the Arkansas River area to the east. Although emphasis is on prehistoric occupations, historic sites are recorded and provide some insights into late historic use of this part of the river basin.

### **METHODOLOGY**

The territory surveyed encompasses 4.3 square miles (11.1 square km) within the Salt Fork of the Arkansas River basin in Grant and Kay Counties (Figure 4). This represents a very small portion of the basin. Specific locations chosen for survey were selected to sample diverse settings in the area. Four general settings or zones were identified for study. Two zones encompass tributary settings in the western portion of the study area. The Salt Fork has a relatively high saline content, and most of the previously recorded sites in the study area are on the tributaries. The first survey zone was selected to determine site distributions and densities off of the main river setting. A second zone is in similar settings but includes a tributary south of the river and a third zone is along a tributary at the eastern end of the study area that contains more loamy soils. The fourth zone is terraces and ridges along the Salt Fork River.

The first survey zone consists of areas along Pond Creek just north of the Salt Fork, and the second is along parts of Wild Horse Creek and Coldwater Creek south of the Salt Fork. Two tributary settings are included due to variations in

the topography on the north and south sides of the Salt Fork. The Pond Creek location incorporates some upland ridge settings as well as terraces and a portion of the large Salt Fork bottom that is cut by the creek. In the second survey zone, Wild Horse Creek is one of the larger southern tributaries. In general, the divide between the Salt Fork basin and Red Rock Creek is within a few miles south of the Salt Fork. Wild Horse Creek, however, drains a fairly large area south of the river. A few other tributary locations were examined at the western end of the project area, but most of these locations were difficult to study due to deep sand deposits. Sand deposits are present along both sides of the Salt Fork in most of Grant County, but these dunes are much more extensive at the west end of Grant County and on the north side of the river due to prevailing south-southwesterly winds. A sample along a creek or a river terrace in the sand deposits was initially considered for this survey, but this setting had been partially sampled (without any finds) during an earlier survey in western Grant County (Ferring et al. 1976). A small area of sandy and loamy dune soils in the western part of Grant County was briefly examined during the survey resulting in the location of no sites. Most of these sandy soils are in pasture, and extensive subsurface testing or areas exposed by erosion would be needed to find and evaluate sites in these types of soils. Given the limited time frame for the project, most effort was expended in other settings where site observation was considered more likely. This restricts evaluation of prehistoric occupation of dune settings in western Grant County, and future research should consider an intensive subsurface evaluation of these

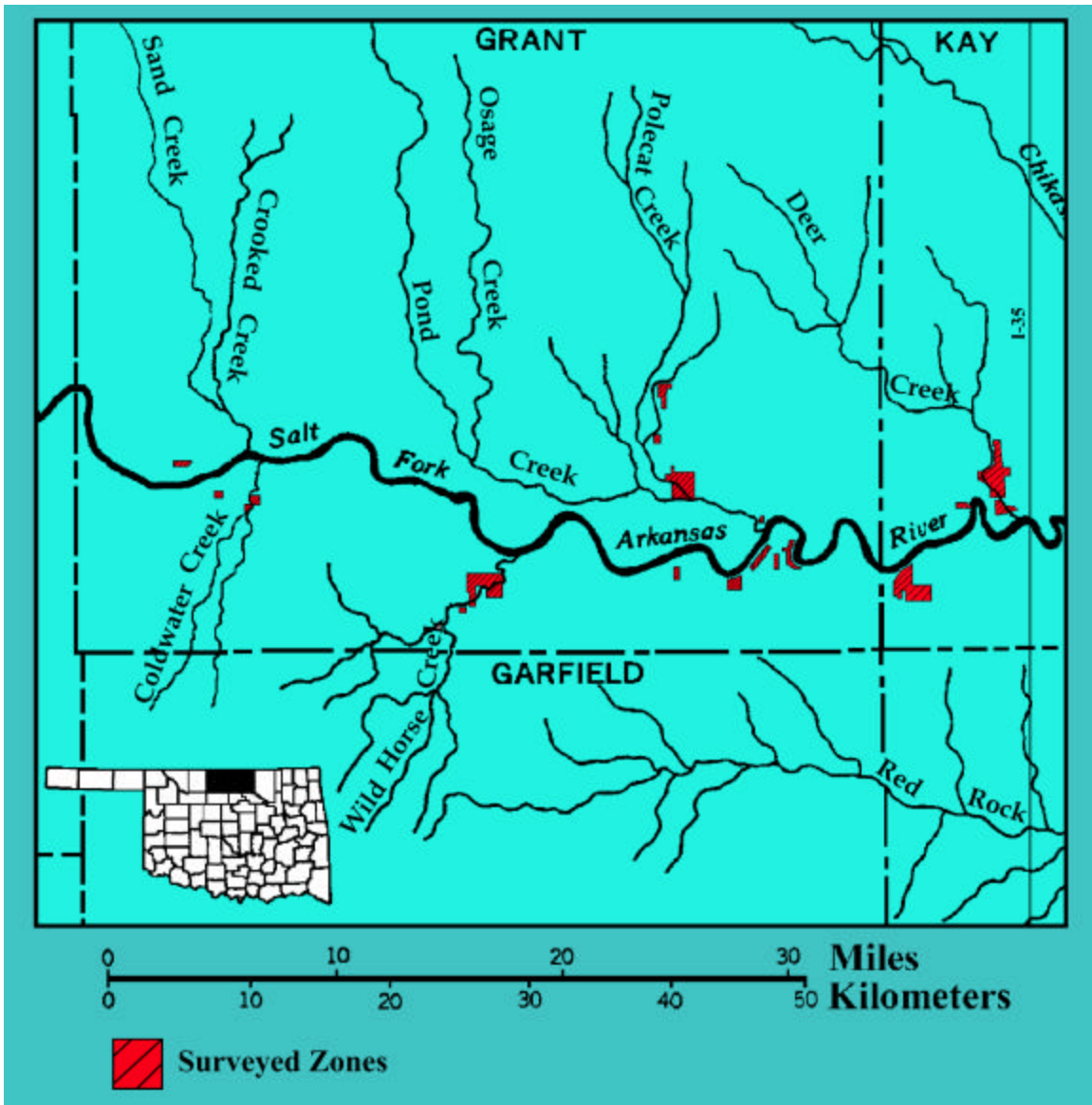


Figure 4: Surveyed areas in the Salt Fork of the Arkansas River basin.

settings to identify prehistoric occupations. About 1.2 square miles were surveyed in zone one and about .76 square miles in zone two.

The third survey zone is similar to zones one and two, but it is farther east. It incorporates locations along a large tributary, Deer Creek, above its junction with the Salt Fork. There are a few previously recorded sites along the upper portions of this tributary, but none were known for the lower area near Salt Fork.

This zone includes upland and terrace settings in a loamy soil. It was chosen to evaluate a large tributary near the eastern end of the project area, closer to the Florence-A sources and the numerous sites recorded along the Arkansas River and smaller streams near the river. Just less than one square mile was surveyed in zone three.

The fourth survey setting is along ridges and terraces adjacent to the Salt Fork of the Arkansas River. Parts of the tributary

surveys, especially in zone one, included Salt Fork bottomland, but the zone four survey concentrated on prominent terraces and ridges close to the river. Some of these settings incorporate locations adjacent to where small tributaries enter the river. Due to large dune fields covering extended areas on the north side of the river, all but a small portion of this survey setting is on the south side of the river. Research in the Kaw Lake area north and east of the Salt Fork suggests that large sedentary sites of the Plains Village period may be present on high terraces near the Arkansas River with a few also found along smaller streams near the Florence-A quarries. There is only one previously recorded site located in this setting within the survey area and it does not appear to be a village. The objective of this part of the survey was to evaluate prehistoric site potential along the middle portion of the Salt Fork River and determine if villages are present. Surveys to the west had failed to find sites in such settings, whereas several sites are recorded along the Salt Fork close to its junction with the Arkansas River. This zone encompasses about 1.4 square miles.

The survey involved a systematic ground inspection of all selected areas. Specific parcels in each survey zone were selected nonrandomly to sample different settings such as uplands (usually near streams), bottomlands, terraces, and high terraces. Time and manpower limitations, plus our attempts to avoid damage to crops and pastures prevented any significant subsurface testing. Also, examination of eroded creek banks and road cuts indicated that some old surfaces, which may contain cultural deposits, were deeply buried and

not accessible by shovel testing. Material densities at most sites were low and extensive subsurface testing would have been necessary to find the buried cultural materials at many of the camps.

To aid site identification, survey locations were also selected to maximize ground visibility. Two to five individuals conducted a pedestrian survey with spacing of transects at intervals 15 to 20 meters apart. This spacing enhanced the possibility of identifying small sites. Overall ground visibility during the survey was good and several plowed fields had high ground visibility, virtually 100%. Some pastures and woodlands were included in each survey zone. Vegetation densities in pastures were typically much lower than cultivated fields, but wheat fields examined late in the winter also had reduced ground visibility. Shovel testing was minimal, but we attempted to locate and examine cut banks and other exposures that might reveal buried soils and, possibly, cultural deposits. These buried soils were examined to provide clues to the potential for buried cultural resources in the river valley. We profiled two bank exposures and noted depths of buried soils at several other exposures along road cuts, creeks, and the river. Contact with landowners and collectors was planned to increase our chances of identifying archeological sites and delimiting temporal placement of the archeological resources. Unfortunately, we found very few collectors, and landowners usually had no materials from sites on their properties.

When sites were identified estimates of the size and site boundaries were recorded along with any features and concentrations of artifacts. Site size was

based on the surface distribution of artifacts, but local topography was also considered if it appeared that sites were buried. Oklahoma Archeological Survey site forms were completed for each site and isolated find locale, and site photographs were taken. All site locations were plotted on U.S.G.S. 7.5 minute topographic maps, and site numbers were obtained from the Oklahoma Archeological Survey. A few private collections from sites within survey zones were located and documented.

Sites visited during the survey were distinguished by the presence of prehistoric or historic artifacts and debris. Isolated artifacts consisting of less than five items were usually given isolated find numbers rather than site numbers unless the setting or conditions of discovery indicated a high potential for buried or unexposed cultural deposits. Artifacts were collected and analyzed with the goal of determining each site's temporal and cultural affiliation, plus the site function. Artifact densities were low on many of the sites, and all visible prehistoric materials (with the exception of burned rock) were collected to evaluate site type and temporal period. At historic sites, any extant structures were recorded, and a sample of debris was collected to provide information on the groups who may have occupied the site, the general period of use, and the types of activities at the site. Landowners, also, provided some information on historic sites in the survey zones.

Determination of prehistoric site function is based on broad site and artifact characteristics with categories including villages/base camps, camps,

and workshops. Information gathered from private collections, when available, is used to help make these determinations. These are very broad categories, but the limited information available from most of the sites restricts classification to these categories. None of the sites appear to be classic large sedentary villages, but several have artifact diversity and evidence of features to indicate a small village or base camp locale. Villages/base camps are the largest sites identified and usually are over 100 square meters and some may be several acres in extent. They may have features such as pits, hearths, or structures, although there was very little evidence of these from the surface survey. Villages/base camps have a diverse assortment of artifacts that may indicate long-term or repeated occupation. Camps are small, usually less than 100 square meters, and contain small amounts of debris with few tools or only broken tools from the refurbishing of tool kits. These sites are assumed to be limited activity camps rather than villages/base camps, but limited exposure of artifacts due to dense vegetation or the burial of cultural bearing deposits makes this a tentative classification in some cases.

Workshops are defined by the presence of numerous tested cobbles or cores and debitage principally associated with initial stages of reduction and tool manufacture. These sites, typically, are found at cobble outcrops in upland settings. Ogallala gravels are present in some upland settings in the study area, and these materials appear on various prehistoric sites. The Ogallala cobbles in the Salt Fork area, however, are generally very small and often are sparse in any given deposit. Thus, none of the

sites examined appear to be simply workshops sites, but some may be camps where some local lithic acquisition was a part of the activities. Site types are also evaluated in relation to geographical and environmental features (such as springs, river crossings, high terraces, etc.) to identify distribution patterns that may aid management decisions concerning cultural resources in this area of the state.

Historic materials are treated slightly different from prehistoric artifacts. Most historic sites were easily identifiable as farmsteads and collections emphasized debris that might provide dates for the occupations. Thus, only samples of historic debris were retained at most historic sites. Early cemeteries were also recorded. Counts of graves were made and, where legible, death dates and names were noted. Isolated historic items were sometimes found at sites with primarily prehistoric materials, and these

items were usually collected to document the multiple components. Some of these finds may relate to nearby farmsteads, whereas some historic debris probably results from farming and ranching activities away from homesteads.

In sum, upland and bottomland settings along tributaries as well as the Salt Fork River were examined to determine the location of Archaic, Woodland, Late Prehistoric, and historic sites in the middle Salt Fork basin. Information was collected on the presence or absence of various types of sites in different settings. The survey was designed to provide basic information on the distribution and density of prehistoric sites in this area of north central Oklahoma. The project also attempted to increase the inventory of sites in this area and provide preliminary assessments of the resources.