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Dept. of the Army Memphis District Corps of Engineers B-202 Clifford Davis Federal Bldg. Memphis, TN 38103			173
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New Madrid County, Missouri-

A Negative Finding

U.S. Army Corps of Engineers

Memphis District

Jimmy D. McNeil

Staff Archeologist

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July 1988

Abstract

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On 8 July 1988 an intensive cultural resources survey was conducted by staff archeologist, Mr. Jimmy McNeil, of the Environmental Analysis Branch of the U.S. Army Corps of Engineers, Memphis District over approximately 19.5 acres. The project is located near New Madrid, along the river bank, Township 22N, Range 14E, Sections 4 and 5 in New Madrid county, Missouri. The proposed project includes grading portions of the river bank to a stable angle and then placing concrete matting and stone rip rap along the bank. This will connect the ends of the New Madrid Bend Revetment and the New Madrid Revetment, making them all one unit. All equipment will be brought in by boat or over existing roads. A records and literature research indicated no sites within the project area. TABLE OF CONTENTS

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INTRODUCTION

An intensive cultural resources survey was conducted by staff archeologist, Mr. Jimmy McNeil, on 8 July 1988. The area surveyed was 8,500 feet long and 100 feet wide, approximately 19.5 acres. The survey consisted of a visual inspection of the river bank and the surface landward of top bank. The pedestrial survey and literature search was in accordance with requirements outlined in the National Historic Preservation Act of 1966 (Public Law 89 365) and the National Environment Policy Act of 1969 (Public Law 91.190).

STUDY AREA AND PROJECT DESCRIPTION

The project is located near New Madrid in Township 22N, Range 14E, Sections 4 and 5, along the river bank, New Madrid County, on the New Madrid Mo-Ky topographic map (Figure 1). The right-of-way extends 30 meters (100 feet) 1.ndside from the riverbank.

The purpose of the project is to build a bank revetment that connects the two existing reverments and effect emergency bank repair.



ENVIROMENTAL SETTING

GEOLOGY AND PHYSIOGRAPHY

The New Madrid area is situated in the braided relict alluvium-deposited by the Mississippi-Ohio River complex. The are consists of predominately all the low land lying between the Sikeston Ridge (a ridge extending southward to New Madrid) on the west and the Mississippi River on the east and south. There is a gradual change from the low country on the east to a series of low, sandy ridges with swampy sloughs between them. These low ridges are in reality fingerlike tongues of sand which stretch southward and have survived previous stream erosion. These are found only in the western portion of the lowland (Figure 2).

The top strata consists of Recent or Pleistocene deposits of alluvium composed of sand, silts, and clays to a depth of 0.35 to 6.10 meters (1-20 feet). The substrata consists predominately of fine to medium sand with some local graveliferous strata to a depth of 37 to 60 meters (120-200 feet) below the top strata. The area is underlain by the Wilcox formation of the lower Eocene which is composed of lignitic sands, silty sands, and silty clay with some gravel.

Regional structure of the area is controlled by the Mississippi Embayment, a southerly plunging syncline whose axis is basically outlined by the present course of the Mississippi River. The Floodway area is located on the



FIGURE 2

Physiographic Regions in Southeast Missouri (Adapted from J. R. Williams 1971:39)

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western limb of the syncline, and as a result, the strata dips at a low angle southeastward. The project area is located within the Seismic Risk Zone 3. The New Madrid earthquakes of 1811 to 1938 affected the project areas and included ten earthquakes with intensities ranging from IV to X on the modified Mercalli scale.

The following data was compiled from geologic mapping experience in all portions of this physiographic region by Saucier in 1964 and 1974. Within the impacted areas, an outline of specific topstratum deposits is presented:

1) Natural levee; "low ridges which flank both sides of streams that per odically overflow their banks."

2) Point bar; "sediments laid down in broad shallow basins during periods of stream flooding."

3) Abandoned channels or clay plugs; "partially or wholly filled segmerts of stream channels formed when the stream shortens its course."

4) Braided-relict alluvial fan; "sediments that were laid down by rapidly shifting, aggrading streams during the earlier stages of valley alluviation."

5) Swale-like areas; "of various origins containing thick fine-grained deposits which are found within the point bar surface" (Saucier 1964).

Some of these topstratum deposits ". . . may exist discreetly, e.g. point bar, abandoned channel, and braided-relict alluvial fan, while others are laid down over previous deposits: a natural levee may be veneered over point bar, abandoned channel, and braided relict alluvial fan deposits, and swale-like areas occur on point bar deposits with or without an overlying natural levee. These deposits, whether occurring discreetly or in combination, are the land surface on or near which human habitation has occurred" (Saucier 1964).

Human occupation predating 6,000 years before present would necessarily have occurred on braided stream terraces, because these land areas were the oldes land forms extant. The later and more stable aboriginal settlements were agriculturally inclined, and the intense cultivation demanded certain varialles in soil characteristics such as particle size, fertility, periodic flooding, and soil management by interplanting (Ward 1965). A fine sandy loam is characteristically found on later aboriginal sites in the area; i.e. site location is controlled by dependence of the later Indian peoples on intensive maize cultivation within the limits of their technological capabilities.

SOILS

Four major soil associations are extant in the New Madrid Floodway vicinity: Snarkey-Alligator, Commerce-Caruthersville, Lilbourn-Dundee, and Tiptonville-Reelfoot (Tanderich and Reagan, 1973).

Soils of the Sharkey-Alligator association are nearly level, poorly drained, and clayey. The particles composing the soils are small and result from deposition off and away from the natural levees. Sedimentation from slackwater pools and back swamps is the most common method of production of these soils. These, then, are normally found in broad, shallow lenses.

Commerce-Caruthersville soils are found in a 1.5-5 kilometer (1-3 mile) wide strip along the banks of the Mississippi (Brown 1977). These soils are loamy and occur in nearly level patches. These are relatively recent alluvial deposits; they are somewhat poorly drained in some areas and moderately drained in others. Minor soils in this association include: Bowdre, Sharkey, Crevasse, Sikeston (Brown 1977). This association occupies the present Mississippi River floodplain, and areas not protected by levees are periodically flooded.

The Lilbourn-Dundee association soils are poorly drained on nearly level to depressional terraces or natural levees that are loamy throughout. The association is composed of low to depressional terraces or natural levees that have little difference in the elevation of the two soils. The minor soils in this association are in the Canalou and Jackport series. The Canalou soils occur on higher levels of the terraces and they are more sandy. The Jackport soils occur on the lower parts of the terraces and have clayey textures.

The Tipton-Reelfoot association is represented by deep, moderately well and somewhat poorly-drained soils on old, natural levees that are silty throughout. These soils consist of nearly level to those that are gently sloping on high terraces or old natural levees. The majority of these slopes are nearly level. The gently sloping areas occur along and around the sloughs and channels adjacent to this association. Tiptonville soils are nearly level and are moderately well-drained; Reelfoot soils, on the lower part of the terraces, are nearly level and are somewhat poorly-drained.

The minor soils in the Tipton-Reelfoot association are in the Bowdre, Dubb, Roellen, and Towsahgy series. The Bowdre soils are ridgetops or terr ces on elevations similar to the Tiptonville. The Dubbs and Towsahgy soil are on the higher parts of the terraces and are well-drained. Roellen soil are in low slackwater areas in small spots within and ir areas around this association (Festervand, et al., 1977).

CLI: TOLOGY AND VEGETATION

The National Weather Service Records at Cairo, Illinois, maintained sinc= 1871, reveal that average monthly temperatures in the area range from $-1^{\circ}C$ (30°F) in January to 27°C (81°F) in July. The maximum observed temperature was 42°C (106°F) and minimum was $-14^{\circ}C$ (16°F).

<u>Precipitation</u>. Annual precipitation varies from 69 to 203 cm (27-80 inches) with a normal rate of precipitation for the area of about 127 cm (50

inches). The heaviest rainfall generally occurs in the period of January-May.

Winds and Growing Season. The prevailing winds are from the southwest. The growing season has a length of approximately seven months with the first and last killing frost occurring in the early parts of November and April, respectively.

<u>Vegetation</u>. A description of a model of biotic communities was presented as developed from U.S. Government Land Office survey notes and plats, historical accounts, and ecological studies of adjacent areas. The following summary describes these biotic communities, which are typical of those that exist in the project vicinity presently or that did exist in the area previously to settlement and exploitation (Lewis 1974):

COTTONWOOD-SYCAMORE NATURAL LEVEE FOREST

"Sycamore, cottonwood, and elm formed the dominant aboreal species with an undergrowth of lianas and cane. Large mammals included deer, mountain lion, bear, and possibly elk. Smaller mammals, such as opossum, raccoon, cottontail rabbit, red and gray fox, eastern fox, gray squirrel, bobcat, and striped skunk were locally abundant. Important avian fauna included several gallinaceous species, in addition to parakeets and passenger pigeons. The community was restricted to natural levees of the active river channel, locally occurring on Sharkey soils and infrequently inundated."

SWEET GUM-ELM "CANE RIDGE" FOREST

"Dominant plant species were sweetgum, elm, and hackberry with a dense cane undergrowth. Mammalian populations were essentially the same as in the previously described biotic community. This community appears to have been very widespread in the region and was situated on almost any soil of the region except clays or newly-deposited lands. It was not normally inundated except in times of high floods."

SWEET GUM-ELM-CYPRESS SEASONAL SWAMP

"This biotic community differs from the sweetgum-elm "cane ridge" forest in the presence of scattered bald cypress (7% of the sample), little undergrowth, and subjected to seasonal periods of inundation. During relatively dry periods, the large floodplain mammals probably wandered in and out of this community. Smaller mammalian populations would have similarly limited their activities in this biotic community to dry periods except for swamp rabbits. wood rats, and possibly more aquatic mammals in the damper fringes. This community appears to have developed in the floodplain interior on the lower portions of old backslope remnants and other low areas in the clay soils."

WILLOW AND/OR COTTONWOOD WATER EDGE BRUSH

"Willow and cottonwood in a variety of combinations formed the main component of this short-lived community. Undergrowth was probably limited to vines and then only in the more mature examples. As this community was frequently inundated, mammal populations would have fluctuated between the more terrestrial species and water-loving species such as mink, river otter, beaver, and muskrat. The community is characteristic of "newly made" ground along the river and in the interior on the fringes of bayous, swamps, and lakes."

CYPRESS DEEP SWAMP

"Bald cypress and probably water tupelo were dominant plant species with little under brush beyond vines. As this community is normally under at least a light sheet of water throughout the year, large mammalian species more or less avoided these areas. Some of the smaller species, such as mink, river otter, beaver, and muskrat, were present. Avian fauna included waterfowi in relatively small numbers. These were heronries, like those known from Reelfoot Lake, Tennessee during historic times, during the summer months. Fish, such as buffalo, catfish, fresh-water drum, and sunfish penetrated the deeper portions of the community."

WATER MILLET-LILY MARSH

"This community included the grassy and aquatic plant covered lake and slough edges just beyond the depth where trees, such as the bald cypress, could flourish. Animal populations of this community include a large number of waterfowl and aquatic mammals, as well as fish, turtles and amphibians."

RIVERS, BAYOUS, AND OPEN LAKES

"A considerable expanse of the surface of south Mississippi and New Madrid Counties was formerly lakes, bayous, and rivers. The community, as described here, is actually a "lump" category for the wide range of fish, reptiles, amphibians, and aquatic mammals and birds found throughout the water covered expanses of the region."

FIELDS AND SECOND GROWTH AREAS

"Those areas, for the most part created by human exploitation, provided animal populations with a subsistence supplement in the late summer and fall in the form of ripening crops and post-harvest gleanings. After abandonment of the plot or village area, the dense tangle of second growth vegetation provided both food and shelter to local animal populations" (Lewis 1974).

PREVIOUS INVESTIGATIONS

Southeast Missouri, and particularly the Cairo Lowlands, has long been the focus of intensive archaeological interest. Early professional field investigations, primarily focused on large civic-ceremonial centers, included the work of Swallow (1875), W.B. Potter (1880), Cyrus Thomas (1891, 1894), Gerard Fowke (1910), and Clarence B. Moore (1916). Two residents of the region, Houck (1908) and Beckwith (1911), also reported on prehistoric sites in the area. The first extensive archaeological excavation in southeast Missouri was conducted by Walker and Adams (1946) at the Matthews site on Sikeston Ridge, New Madrid County. The archaeology of southeast Missouri, including Sikeston Ridge, was summarized by Chapman (1947; 1975) and Griffin (1952). A major archaeological survey, including the Lilbourn, Otter Slough, Barker, Spanish grant and survey sites in the general New Madrid vicinity, was conducted in the early 1950's as part of the Central Mississippi Archaeological Survey (S. Williams 1954). A subsequent survey, focusing on Early Archaic (Dalton) sites, was conducted by James A. Ford and Alden Redfield (Redfield 1971). Several sites were tested and/or excavated during land-leveling salvage work (J. Williams 1967, 1968, 1974). Several fortified Mississippian villages were described by J. Williams (1964), who also investigated the Woodland (Baytown) sequence in the Cairo lowlands (J. Williams 1974). Marshall (1965) surveyed the proposed route of Interstate 55 along Sikeston Ridge in New Madrid County. Most recent research in the area has been a description and comparison of two large ceremonial centers, Lilbourn,

at the southern tip of Sikeston Ridge in New Madrid County, and Towosahgy, in the Cairo Lowlands, Mississippi County (Chapman 1974, 1976).

Recent cultural resource surveys have been conducted at New Madrid (C. Price and Harris 1976; J. Price and Harris 1978; McNerney 1979), North Lilbourn (Price 1976), and East Prairie (Harris 1977). Tandarich (1978) provided an excellent archaeological review of the Mississippi County Spillway area. Greer (1978) presents an informative synopsis of Southeast Missouri, northwest of the project vicinity, in his pipeline survey study. Kekkonan, Martin, and McNeil conducted a survey of Crevasses #1 and #2 in the Floodway in 1983.

Previous investigations within the regions adjacent to the study areas indicate that its highest potential for prehistoric occupation exists for the Late Archaic through the Mississippian Periods.

RESULTS OF THE RECORDS SEARCH

ARCHIVAL AND CARTOGRAPHIC REVIEW

A review of the National Register of Historic Places did not reveal any listings of prehistoric, historic, or architectural cultural resources of known significance for the study areas. A review of the Missouri Archaeological Survey site records indicated that there are no sites within the project area.

A Civil War map (Davis, 1978) dated approximately 1862, (Figure 3) indicates a fort near the town of New Madrid. No indications of this fort was found during the survey. Figure 4 shows the location of the river bank during various years. As can be seen the river bank for that time period has been washed away. It is probable that no traces of the fort remain.

SURVEY METHODOLOGY AND RESULTS

The exposed river bank was walked the entire length of the project. Approximately every 60 meters the bank was scraped from the surface down to about 2 meters. No indication of non-recent cultural materials were found. Shovel cuts were dug every 30 meters where the surface viribility was less than 40°. Shovel cuts were dug approximately 65 meters landward of the top bank. No cultural materials were found within the shovel cuts nor on the cleared surface areas. The entire length of the river bank was covered with recent hash (cars, bottles, wire, bathroom fixtures, etc).

CONCLUSIONS

No archeological sites were discovered within the project right-of-way. If cultural resources are discovered during the course of construction or should any part of the proposed project be relocated, of if additional project areas are proposed, these conditions will be reported immediately to the Missouri Office of Historic Preservation and District Archeologist, U.S. Army Corps of Engineers, Memphis District for appropriate action.





Figure 4



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