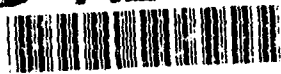


AD-A264 274



A SURVEY LEVEL REPORT
of the
BIRD'S POINT-NEW MADRID FLOODWAY
INFLOW/OUTFLOW CREVASSE #1
and
CREVASSE #2 PROJECT AREAS
NEW MADRID and MISSISSIPPI COUNTIES, MISSOURI

Archaeology, History, and Architecture

DTIC
ELECTE
MAY 17 1993
S A D

Prepared For



US Army Corps
of Engineers
Memphis District

Prepared By

S. Alexis Kekkunan
and
Robert J. Martin

This document has been approved
for public release and sale; its
distribution is unlimited.

Principal Investigator

Jimmy D. McNeil
Jimmy D. McNeil
District Archaeologist
U.S. Army Corps of Engineers
Memphis District

February 1983

93 5 14 047

93-10851

REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.				
1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE FEB 1983		3. REPORT TYPE AND DATES COVERED final
4. TITLE AND SUBTITLE A Survey Level Report of the Bird's Point New Madrid Floodway Inflow/Outflow Crevasse #1 and Crevasse #2 Project Areas New Madrid and Mississippi Counties, MO			5. FUNDING NUMBERS 96X3112	
6. AUTHOR(S) S. Alexis Kekkoan Robert J. Martin				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) in house			8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) Dept. of the Army Memphis District Corps of Engineers B-202 Clifford Davis Federal Bldg. Memphis, TN 38103			10. SPONSORING / MONITORING AGENCY REPORT NUMBER 125	
11. SUPPLEMENTARY NOTES				
12a. DISTRIBUTION / AVAILABILITY STATEMENT Unlimited			12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 words) One previously recorded site 23NM234 was examined during the survey and was found to be outside the described right-of-way boundaries. Scatter was found during the survey of the inflow/outflow crevasse #2 project area. Available evidence indicates that it is a historic dump with no particular cultural or legal significance.				
14. SUBJECT TERMS			15. NUMBER OF PAGES 34	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT		18. SECURITY CLASSIFICATION OF THIS PAGE		19. SECURITY CLASSIFICATION OF ABSTRACT
				20. LIMITATION OF ABSTRACT

GENERAL INSTRUCTIONS FOR COMPLETING SF 298

The Report Documentation Page (RDP) is used in announcing and cataloging reports. It is important that this information be consistent with the rest of the report, particularly the cover and title page. Instructions for filling in each block of the form follow. It is important to *stay within the lines* to meet optical scanning requirements.

Block 1. Agency Use Only (Leave blank).

Block 2. Report Date. Full publication date including day, month, and year, if available (e.g. 1 Jan 88). Must cite at least the year.

Block 3. Type of Report and Dates Covered. State whether report is interim, final, etc. If applicable, enter inclusive report dates (e.g. 10 Jun 87 - 30 Jun 88).

Block 4. Title and Subtitle. A title is taken from the part of the report that provides the most meaningful and complete information. When a report is prepared in more than one volume, repeat the primary title, add volume number, and include subtitle for the specific volume. On classified documents enter the title classification in parentheses.

Block 5. Funding Numbers. To include contract and grant numbers; may include program element number(s), project number(s), task number(s), and work unit number(s). Use the following labels:

C - Contract	PR - Project
G - Grant	TA - Task
PE - Program Element	WU - Work Unit Accession No.

Block 6. Author(s). Name(s) of person(s) responsible for writing the report, performing the research, or credited with the content of the report. If editor or compiler, this should follow the name(s).

Block 7. Performing Organization Name(s) and Address(es). Self-explanatory.

Block 8. Performing Organization Report Number. Enter the unique alphanumeric report number(s) assigned by the organization performing the report.

Block 9. Sponsoring/Monitoring Agency Name(s) and Address(es). Self-explanatory.

Block 10. Sponsoring/Monitoring Agency Report Number. (If known)

Block 11. Supplementary Notes. Enter information not included elsewhere such as: Prepared in cooperation with...; Trans. of...; To be published in... When a report is revised, include a statement whether the new report supersedes or supplements the older report.

Block 12a. Distribution/Availability Statement. Denotes public availability or limitations. Cite any availability to the public. Enter additional limitations or special markings in all capitals (e.g. NOFORN, REL, ITAR).

DOD - See DoDD 5230.24, "Distribution Statements on Technical Documents."

DOE - See authorities.

NASA - See Handbook NHB 2200.2.

NTIS - Leave blank.

Block 12b. Distribution Code.

DOD - Leave blank.

DOE - Enter DOE distribution categories from the Standard Distribution for Unclassified Scientific and Technical Reports.

NASA - Leave blank.

NTIS - Leave blank.

Block 13. Abstract. Include a brief (*Maximum 200 words*) factual summary of the most significant information contained in the report.

Block 14. Subject Terms. Keywords or phrases identifying major subjects in the report.

Block 15. Number of Pages. Enter the total number of pages.

Block 16. Price Code. Enter appropriate price code (*NTIS only*).

Blocks 17. - 19. Security Classifications. Self-explanatory. Enter U.S. Security Classification in accordance with U.S. Security Regulations (i.e., UNCLASSIFIED). If form contains classified information, stamp classification on the top and bottom of the page.

Block 20. Limitation of Abstract. This block must be completed to assign a limitation to the abstract. Enter either UL (unlimited) or SAR (same as report). An entry in this block is necessary if the abstract is to be limited. If blank, the abstract is assumed to be unlimited.

ABSTRACT

An intensive survey for prehistoric, historic, and architectural properties was conducted on January 3 through January 14, 1983. The survey covered two parcels of land covering 130.4 acres and 176.8 acres, respectively. These were located near New Madrid, Missouri along the main levee paralleling the Mississippi River. The study methods included a review of published literature, a review of state and Federal Archival sources, a cartographic review, and intensive field examination. One previously recorded archaeological site (23NM234) was examined during the survey and was found to be outside the described right-of-way boundaries. Scatter was discovered during the field survey of the Inflow/Outflow Crevasse #2 project area. Available evidence indicates that it is a historic dump with no particular cultural or legal significance. It is recommended that the described projects proceed as currently planned.

TABLE OF CONTENTS

	<u>Page</u>
Abstract	i
Table of Contents	ii
Introduction	1
Scope of Present Study	1
Project Location and Description	1
Environmental Setting	2
Geology and Physiography	2
Soils	6
Climatology and Vegetation	8
Background Data	10
Archival and Cartographic Review	10
Archaeological Background of the Study Area	11
Historical Background of the Study Area	17
Field Methodology	23
Inflow/Outflow Crevasse #1	23
Inflow/Outflow Crevasse #2	24
Results and Recommendations	25
Overview	25
Site Descriptions	26
Recommendations	26
Bibliography	27
References Cited	27
Maps	34
Interviews	34

Accession for	
NTIS	CRAI
DTIC	TAB
Unannounced	
Justification	
By	
Distribution/	
Availability	
Dist	Avail for Special
A-1	

DTIC QUALITY INSPECTED 8

TABLE OF CONTENTS (CONT.)

	<u>Page</u>
Maps Appendices	
Map Appendix 1 Hubbard Lake MO-KY-TN 7.5' Quadrangle	--
Map Appendix 2 Bayouville MO-KY-TN 15' Quadrangle	

LIST OF TABLES

Table 1. Prehistoric Cultural Sequence of the Eastern Lowlands	15
--	----

LIST OF FIGURES

Figure 1. Project Locations	3
Figure 2. Inflow/Outflow Crevasse #1	4
Figure 3. Inflow/Outflow Crevasse #2	5
Figure 4. Physiographic Regions of Southeast Missouri	7
Figure 5. Plots of Indian Mounds in New Madrid and Mississippi Counties, Missouri	16
Figure 6. New Madrid Bend	20
Figure 7. Missouri Historic Preservation Program Drainage Map	27

INTRODUCTION

SCOPE OF THE PRESENT STUDY

An intensive survey for cultural resources was conducted by U.S. Army Corps of Engineers, Memphis District personnel within two specific study areas associated with the Bird's Point-New Madrid Floodway project.

The survey consisted of two parts. The first was a records check and literature search for information on previously recorded archaeological, historical, and architectural sites which may be in the project area, and which may, thus, be affected by the proposed project activities. General information on the prehistory and history of the area was also obtained. The second part was a field survey employing pedestrian survey and shovel testing as appropriate with area vegetation and field conditions.

The field work was conducted January 3 through January 14, 1983 by Jimmy D. McNeil, District Archaeologist, Memphis District, with assistance from S. Alexis Kekkunan, Robert J. Martin, Mitchell Childress, and Glenda Maness. The literature review and report preparation was completed by S. Alexis Kekkunan and Robert J. Martin under the supervision of Jimmy D. McNeil.

Cultural materials recovered during the course of the survey are presently curated by the Corps of Engineers, Memphis District.

The study was performed as required by the National Environmental Policy Act of 1969 (Public Law 91-190), "Protection and Enhancement of the Cultural Environment" (Executive Order 11593), the Procedures for the Protection of Historic and Cultural Properties (36 CFR 800), and the National Historic Preservation Act of 1966 (Public Law 89-665).

PROJECT LOCATION AND DESCRIPTION

The Bird's Point-New Madrid Floodway Project area for this study encompassed two sections of levee and abutting properties designated as Inflow/Outflow Crevasse #1 and #2. Crevasse #1 is an approximately 71.5 hectare (176.8 acres) tract located in southern Mississippi County, Missouri along the main Mississippi River Levee which parallels the Mississippi River. It lies across the Mississippi River from the northeast shoreline of Island No. 8. Crevasse #2 is an approximately 52.7 hectare (130.4 acres) tract located in south central New Madrid County, Missouri along the main Mississippi River Levee. It lies approximately 7 kilometers (4.2 miles) southeast of the town of New Madrid, Missouri.

Current design plans affecting both Inflow/Outflow Crevasse #1 and #2 call for degrading the levee 3 to 4.6 meters (10 to 15 feet) with bulldozers on the landward side and with barge-mounted drag lines on the riverward side. In addition, any area within the 182 meter (600 feet) right-of-way paralleling the riverward side of the levee and the 304 meter wide (1,000 feet) access lane (see Figures 2 and 3), which exceeds an elevation of 90.8 meters (298 feet MSL), will also be

degraded. The general effect of these actions is to allow outflow from crevasses to the north during periods of high water along the Mississippi River which will provide the cities of Cairo, Illinois and Hickman, Kentucky with a means of flood control.

Figures 2 and 3 show the proposed right-of-way boundaries in relation to the Mississippi River and the main levee.

ENVIRONMENTAL SETTING

GEOLOGY AND PHYSIOGRAPHY

The Bird's Point-New Madrid Floodway area is situated in the braided relict alluvium deposited by the Mississippi-Ohio River complex. The area 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.

The top strata consists of Recent or Pleistocene deposits of alluvium composed of sand, silts, and clays to a depth of .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 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 periodically 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 segments of stream channels formed when the stream shortens its course".

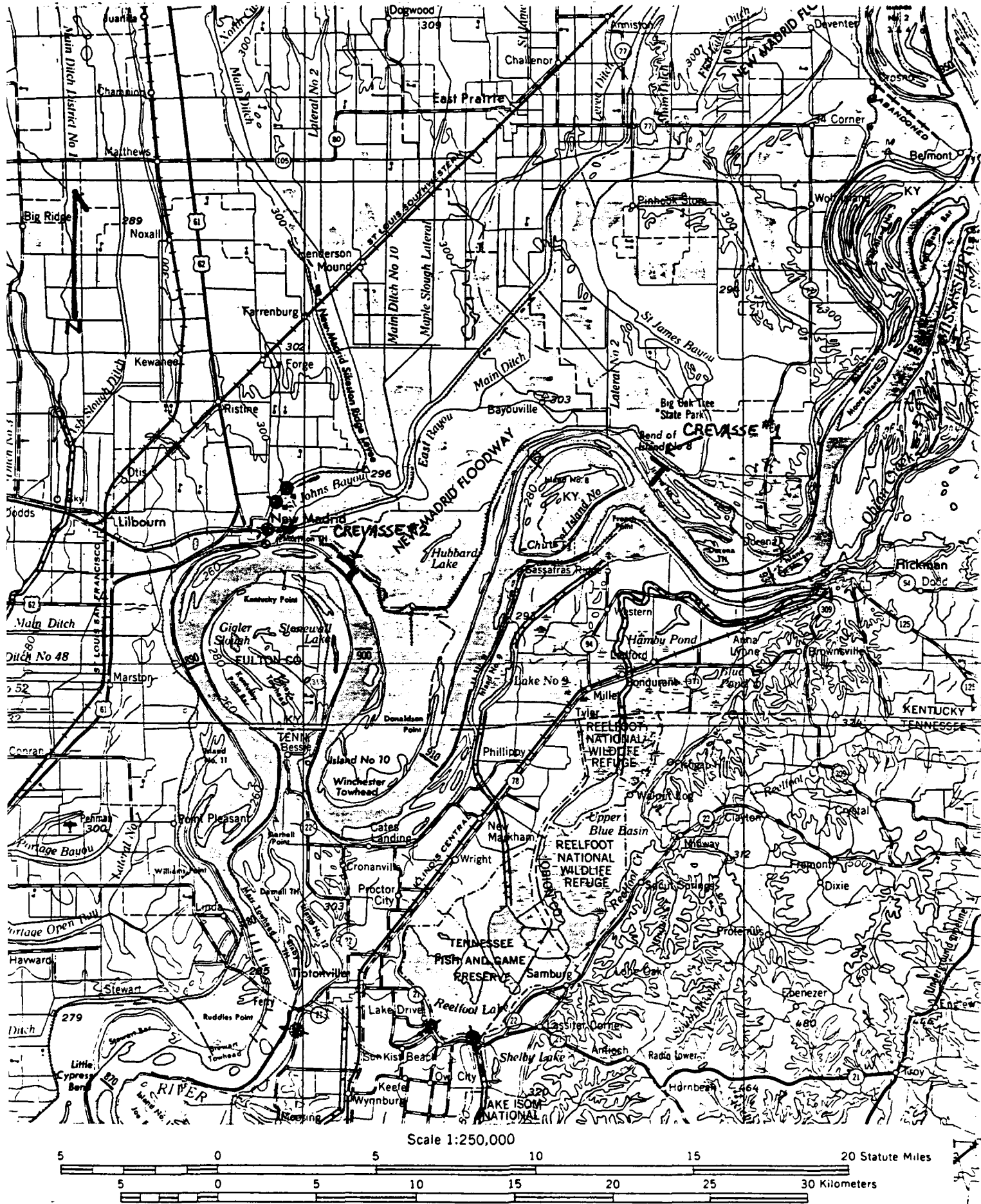
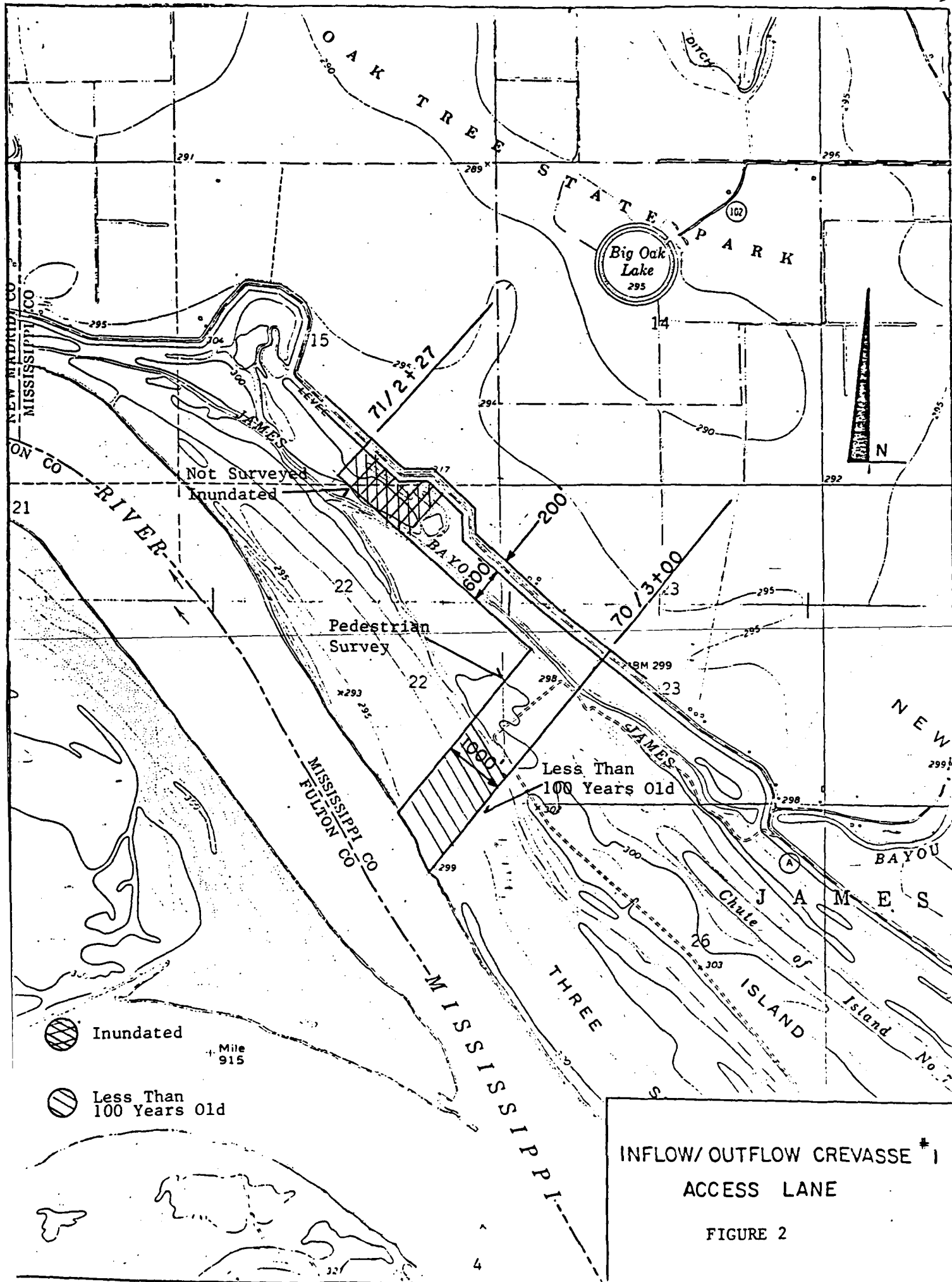
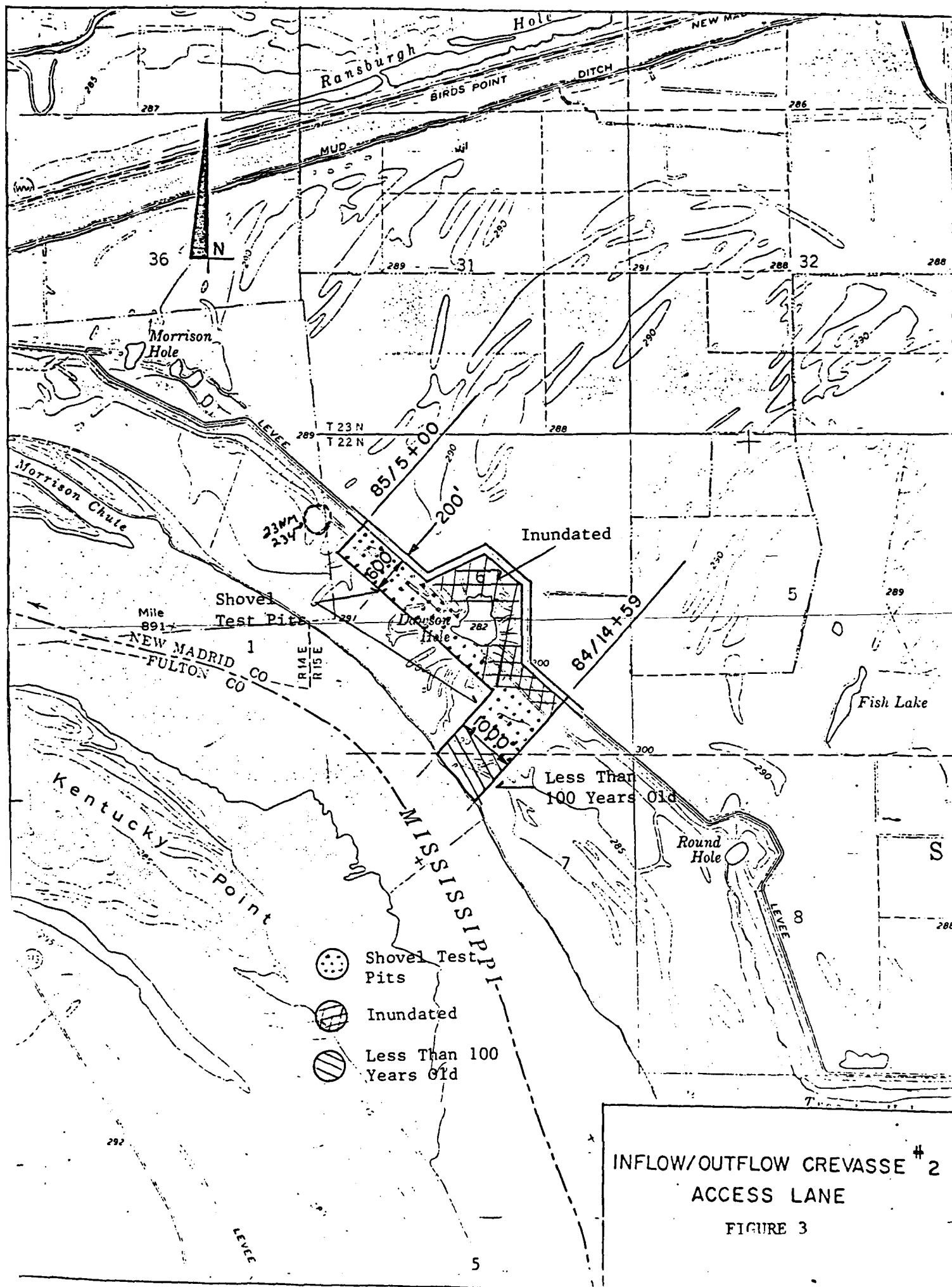


FIGURE 1. Project Locations



INFLOW/ OUTFLOW CREVASSE *
ACCESS LANE

FIGURE 2



INFLOW/OUTFLOW CREVASSE #2
ACCESS LANE

FIGURE 3

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 oldest land forms extant. The later and more stable aboriginal settlements were agriculturally inclined, and the intense cultivation demanded certain variables 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: Sharkey-Alligator, Commerce-Caruthersville, Lilbourn-Dundee, and Tiptonville-Reelfoot (Tanderich and Reagan, 1978).

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.

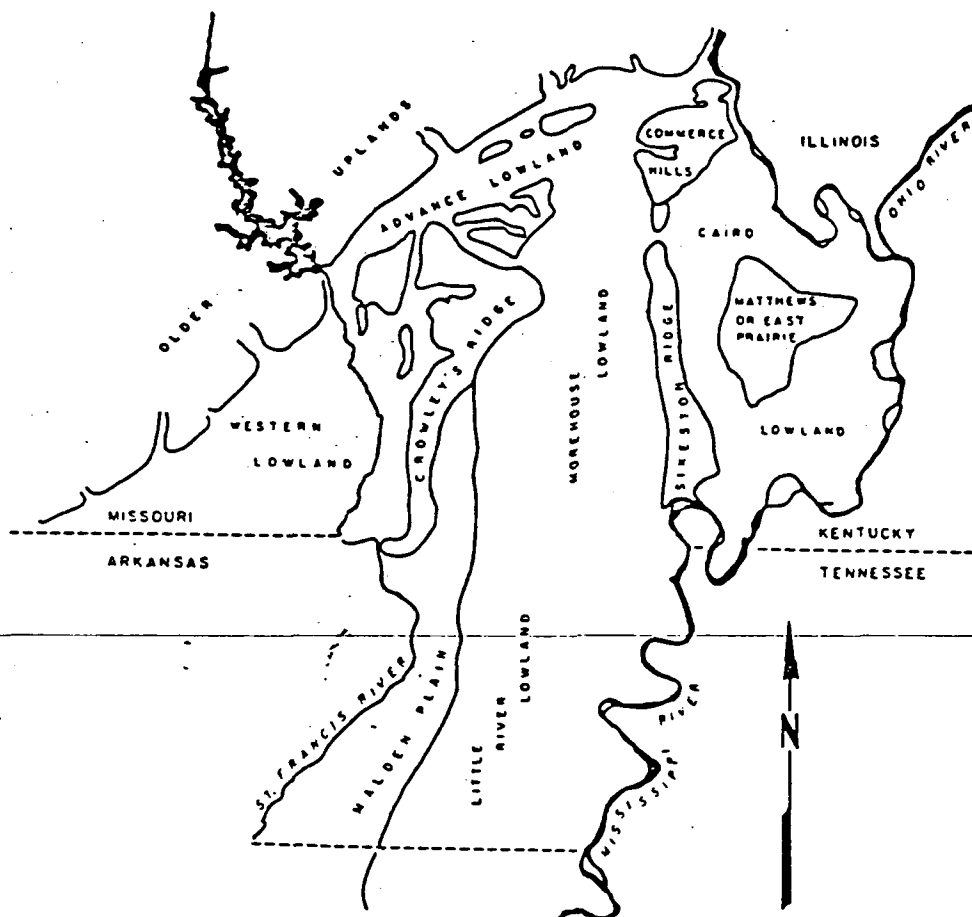


FIGURE 4. Physiographic Regions in Southeast Missouri
(Adapted from J. R. Williams 1971:39)

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

CLIMATOLOGY AND VEGETATION

The National Weather Service Records at Cairo, Illinois, maintained since 1871, reveal that average monthly temperatures in the area range from -1°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°C (16°F).

Precipitation. 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.

Vegetation. 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 waterfowl 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, freshwater 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 1973).

BACKGROUND DATA

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 resulted in one previously recorded site being in proximity to Inflow/Outflow Crevasse #2. Site 23NM234 is described as a Mississippian village site. The site was reported to the Missouri Archaeological Survey in 1964 by a local collector. Data pertaining to the surficial extent, artifact content, or other site attributes was unavailable from official records or from the original recorder (Jones 1983).

County surveyor records from the late 1800's and early 1900's were available for review at Mississippi County, Missouri courthouse. Several plats included the Inflow/Outflow Crevasse #1 study area. Specifically, the 1891 T.23N, R.16E, Section 23 plats; the 1914 T23N, R.16E, Section 23 plats; the 1904 T.23N, R.16E, Sections 15, 22, 23 plats; and the 1917 T.23N, R.16E, Section 22 plats were reviewed. No evidence of cultural habitation was detected for the study area.

The New Madrid County, Missouri County Recorder was unaware of the existence of any original survey plats for the study area of Inflow/Outflow Crevasse #2. In addition, he stated that the low elevation of the area which resulted in frequent flooding had precluded any historic habitation within his recollection.

The 1955 Bayouville, MO-KY-TN 15' quadrangle did not show any structures on the riverward side of the Mississippi River Levee which borders the study areas. However, seven structures are indicated on the landward side of the levee in the vicinity of Inflow/Outflow Crevasse #1. All of these structures are located along a road which parallels the levee. Present evidence suggests they are of modern historic origin.

A 1938 Mississippi River Commission chart describes channel movements of the Mississippi River at approximately 50 year intervals. It indicates considerable erosion and subsequent land formation within the vicinity of the project areas. River channel alignment is first recorded in 1765 and thereafter during the intervals of 1820 to 1830, 1881 to 1893, and 1930 to 1932.

The area of Inflow/Outflow Crevasse #1 has been affected most by the channel movement. The land surface extending from the river bank to a point approximately 2,000 feet from the bank, over which the access lane crosses, has been formed in the last 100 years from river deposition and channel movement. Less than 1,000 feet of the land area over which Inflow/Outflow Crevasse #2's access lane crosses has been formed in the last 100 years.

A comparison between the channel alignment, as shown for the period of 1930-1932 and as shown on the 1972 Bayouville, MO-KY-TN 15' quadrangle, indicates a more stable channel alignment over the past 50 years.

Presently available data indicates the one known cultural resource, site 23NM234, will not be impacted by the planned construction activities. Presently available data indicates that there are no known historic resources within the study area and that historic habitation in the vicinity probably dates from mid-twentieth century agricultural development of the area.

ARCHAEOLOGICAL BACKGROUND OF THE STUDY AREA

The Eastern Lowlands, within which the study areas are located, resulted from the meanderings of the Mississippi River and the associated process of deposition. Channel movement produced a varied physical environment characterized by abandoned natural levees, oxbow lakes and back water swamps with a variety of soil types. The diversity of landforms produced both aquatic and terrestrial habitats in close proximity throughout the meander belt zone. The interface between terrestrial and aquatic habitats was composed of a myriad of minor ecotones (Lewis 1974).

The natural diversity of the area formed a preferred environment for the subsistence needs of prehistoric cultures and appears to have been a locus of prehistoric cultural activity from approximately 12,000 years ago to the proto-historic era which began here about A.D. 1600. Differential utilization of the natural and physical environment occurred through time as cultures evolved and their complexity increased. Regional cultural evolution appears to have been in the mainstream of prehistoric cultural developments elsewhere in eastern North America as witnessed by the abundant archaeological material present (Greer 1978).

Prehistoric Cultural Sequence

The Paleo-Indian Period (12,000 B.P. to 10,000 B.P.), occurring at the end of the Pleistocene, was a time when big game animals were the major source of human food (Jennings 1974). The distinctive fluted points which are diagnostic of this time period have been found in the Ozark Border region but are rare in the lowlands (Price, Price *et. al.* 1975; Price, Price, and Harris 1976; Price and Krakker 1975). One fluted point from New Madrid County has been reported (Chapman 1975).

The nature of the tool assemblage that accompanies the fluted point tradition in the Mississippi Valley is not well-known, but it is suspected that the assemblage is similar to simple flake tools of the later Dalton Period of the Early Archaic. Most early sites, will probably be extremely difficult to identify because of the limited amount of archaeological material and the lack of distinctive artifacts, and they may go unrecognized (Klinger 1976:50).

The Archaic Period (10,000 B.P. to 2500 B.P.) was a long and complex era in the general cultural evolution and adaptation of prehistoric populations within a changing natural environment. The subsistence-settlement system continued to be characteristically hunting-gathering as in the previous Paleo-Indian Period though modified in scope with the extinction of the large game mammals. Generally, the Archaic Period can best be characterized as a transitional stage within the development of aboriginal cultures in North America.

The Transitional Dalton-Early Archaic Period (10,000 B.P. to 8500 B.P.) (Goodyear 1974) is generally poorly known for the Bootheel Region (Chapman 1975), but such material is sparse compared to that found in the Ozarks (north and west) and Western Lowlands. Redfield (1971) does report Dalton sites from New Madrid County west of the study area. Artifacts relating to the Middle Archaic (8500 B.P. to 5000 B.P.) are present in the Bootheel Region; but again are sparse compared to those found in areas to the north (Chapman 1975). Physiographic data (the placement of the study area within Meander Belt No. 5, which may contain landforms available for habitation from 0 to 6000 years B.P.) indicate a greater potential for Late Archaic occupations within the Bootheel Region and the study area.

The Late Archaic Period (5000 B.P. to 2500 B.P.) left larger and more numerous sites in the St. Francis Basin than any of the earlier periods (Krakker 1977; Price, Price and Harris 1976). Two sites, Burkett (23MI20) and Weems (23MI25) have a nonpottery component and appear to represent Late Archaic occupations in the New Madrid Floodway vicinity (Chapman 1975) described as the O'Bryan Ridge Phase by S. Williams (1954) and Phillips (1970).

The Woodland Period (2500 B.P. to 750 B.P.) is commonly defined as the stage when ceramics were widely adopted and horticulture became important to subsistence economics in the eastern forests of North America. Mortuary sites and trading also increased in complexity during this time period (Willey 1966; Jennings 1974).

There are basically two Woodland cultures represented in Southeast Missouri. In the Western Lowlands, sand-tempered ceramics (termed Barnes) are present on Woodland sites. In the Eastern Lowlands, Woodland ceramics are clay-tempered and are termed Baytown. In Southeast Missouri as well as Northeast Arkansas, the geographical boundary between sand and clay tempered wares is rather discreet (Morse 1969; C. Price 1976; Stewart 1976), and it appears that two socio-political groups occupied the central Mississippi Valley simultaneously (assuming that ceramic technology distributions indicate politico-cultural boundaries).

James B. Griffin originally proposed the name Baytown for Woodland period occupations in the Lower Mississippi Valley (Griffin 1941; 1952). S. Williams (1954)

also presented some discussion of Baytown though it was not until the late 1960's that researchers produced syntheses of the available Baytown material.

R. Williams (1968) discussed two sites in the Floodway vicinity, Jones (23MI503) and Story Mound (23MI510) as containing Baytown components. Williams also proposed a chronology for Baytown which he developed in his dissertation (R. Williams 1971). Other sites located in the area with identified Baytown components include: Hoecake (23MI18), Burkett (23MI20), Weems (23MI25), Redden-Hill (23MI29), Miller (23MI32), and Hess (23MI55) (Hopgood 1969).

R. Williams (1971, 1974) has presented the following chronology of Baytown in the Cairo Lowland:

<u>Hoecake Phase</u>	(1500 B.P. to 900 B.P.)
<u>Barnes Ridge Phase</u>	(1700 B.P. to 1500 B.P.)
<u>Ten Mile Pond Phase</u>	(2000 B.P. to 1500 B.P.)
<u>Burkett Phase</u>	(2300 B.P. to 1900 B.P.)

During the Mississippian Period (750 B.P. to 400 B.P.), some of the most complex villages with pyramidal earthen mounds, plazas, and dense resident populations were founded. Social organizations and religious life were complex, and corn agriculture provided the economic base for artistic achievements in pottery and other media. Social organization and site sizes and functions were heirarchically organized.

John Cottier (1974) and James Price (1974) have synthesized data on Mississippian settlement pattern and classified Mississippian sites by type within a proposed subsistence-settlement model. This classification may be outlined as follows (from Price 1974):

Extractive Sites - including hunting camps, lithic extraction (chert quarry and tool manufacturing sites), floral product extraction (wood, fibers, nuts), clay extraction (pottery and daub manufacture), and agricultural extraction (farmsteads, i.e... areas of cultivation).

Hamlets - small settlement, "probably less than fifteen structures", "probably occupied by less than fifty people".

Villages - most probably fortified, "structures in a well'planned arrangement", "occasionally have mounds but if they are present they seldom number over two".

Towns - "usually over ten acres in size," "fortified with palisades," "as few as a single mound to as many as one hundred and twenty," "largest mounds were truncated pyramids which had 'temples' on their summits". Crosno (23MI1) and Towosaghy (23MI2) are townsites.

Rather accurate predictions can be made concerning where Mississippian sites are likely to occur in Southeast Missouri (J. Price 1974). They are usually associated with agricultural soils, generally sandy loams that are easily tillable by

hand horticultural techniques. The importance of soils as a variable in Mississippian settlement has been known for some time (Ward 1965:45; Larson 1970:19; Cottier 1974; J. Price 1974). As pointed out by J. Price (1974), Mississippian settlement systems are very similar throughout the Central Mississippi Valley. A similar settlement strategy relative to landforms and soil type is reflected in Mississippian sites of the Powers Phase in the Western Lowlands, sites in the Lilbourn area (Cairo Lowland Phase) on the southern end of Sikeston Ridge, and Mississippian sites on Barnes and Sugar Tree Ridges in the Eastern Lowlands. Major Mississippian settlements occur on Beulah, Bosket, Brosely, and Dubbs soils, all sandy loams. In the lowlands of Southeast Missouri, large Mississippian towns and villages tend to be located along the edges and ends of major ridges which rise above the floodplain. Small Mississippian farmstead and farming hamlets are most likely to occur wherever sections of sandy loam soils occur on the surface.

There is sparse evidence of human occupation in the area during the protohistoric era, at the end of the Mississippi Stage. Most of Southeast Missouri and large parts of Northeast Arkansas were apparently abandoned, although the reason for this is unknown.

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

TABLE 1

Prehistoric Cultural Sequence of the Eastern
Lowlands (After Tandarich 1978)

<u>Cultural Periods</u>	<u>Local Chronological Sequence</u>	<u>Dates</u>	<u>General Chronological Sequence</u>
Historic	Shawnee	1800	Late Historic
Mississippian	Cairo Lowland Phase	1400	Late Mississippian
		1100	Early Mississippian
Baytown (Woodland)	Hoecake Phase		Late Woodland
		700	
		500	
	Ten Mile Pond Phase	100	Hopewell
		AD	Middle Woodland
		BC	
	Burkett Phase		
		300	Early Woodland
	O'Bryan Ridge Phase	1000	
		2000	Late Archaic
		3000	
	Faulkner	4000	
	Hidden Valley	5000	Middle Archaic
		6000	
	(Various Dalton Forms)	7000	
	Classic Dalton		Early Archaic
Paleo-Indian	Quad	8000	Plano
	Regional fluted variants	9000	
	Clovis	10000	Llano
Early Man		12000+	

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.

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.

HISTORICAL BACKGROUND OF THE STUDY AREA

New Madrid County

The original New Madrid District was a portion of a Spanish land grant which extended from the Cinque Home, south to the mouth of the St. Francis, and approximately 16-24 kilometers (10-15 miles) with an undetermined western boundary. Despite claims that Hernando DeSoto was the first European to pass through Missouri, there is a consensus among historians that the expedition never went further northward than Arkansas (March 1967). All sources concur that Louis Joliet and Jacques Marquette were the first notable Europeans to explore Missouri. Earlier French presence in the New Madrid area would probably have been represented by trappers or traders.

The first settlement in the area was made in 1783 by Francois and Joseph LeSieur near the present site of New Madrid at Point Pleasant (Douglass 1912:81). ~~The two were Canadian trappers who were engaged in trade with the Indians, and the~~ site was called "L'Anse a la Graisse" or "Cove of Fat". The New Madrid location was selected because of its location near the mouth of the Ohio River and the large Delaware Indian village in the vicinity. The house and trading post were built, and success of the venture reached rival traders; these began to come from Vincennes and other posts. The location soon became one of the most profitable trading posts in the country west of the Mississippi River (Goodspeed 1888).

There is little information available on historical Indian occupation of the New Madrid area, but the Shawnee and Delaware had been persuaded by the Spanish to settle in southeast Missouri during the late eighteenth century to serve as a buffer against Spain's enemies; they were removed by various treaties with the United States Government from 1815-1832 (Douglass 1912). A regional history mentions Shawnee living in the New Madrid area, although the date is unclear (Goodspeed 1888). Another regional history (Houck 1908) related that major Shawnee and Delaware settlements were located at Apple Creek (Cape Girardeau County), near Bloomfield (Stoddard County) and Kennett (Dunklin County) (C. Price and J. Price 1977).

During the seventeenth and eighteenth centuries, the lands west of and drained by the Mississippi River were claimed successively by France, Spain, and then France again. During the Spanish regime, the southeast Missouri bootheel was part of the Upper Louisiana District (Goodspeed 1888). The area was transferred to the United States under the Louisiana purchase (1803-4), while the present New Madrid County was attached to the New Madrid District (Goodspeed 1888).

After the Missouri Territory was organized by Congress (1812), the area was included in New Madrid County (Goodspeed 1888). New Madrid was selected as the County Seat in 1822 (Douglass 1912).

The first American to be settled in the New Madrid area was Colonel George Morgan, whom, while traveling the Mississippi on his way to New Orleans, conceived the idea of building a great commercial city in Spanish territory opposite or below the mouth of the Ohio River. He later successfully obtained a large tract of land from the Spanish government and published a prospectus of the city (Goodspeed 1888).

In 1789, Morgan led 50 to 60 immigrants down the Ohio and Mississippi Rivers to L'Anse a la Graisse, the site he had selected for New Madrid (Foley 1971). General James Wilkinson viewed Morgan as a rival and convinced Governor Miro that Morgan had deceived him (Miro) in regard to the conditions and extent of the land concession. Morgan was deprived of the concession and his influence and returned to New Jersey. Several of the colonists also returned to their former homes (Goodspeed 1888).

In July 1789, Governor Miro sent Lieutenant Pierre Forcher and a complement of 34 soldiers to build a fort and take civil and military command of the post at New Madrid. Forcher quickly laid out the town between Bayou St. John and Bayou de Cypriere and built a fort on the bank of the river. As an excellent administrator, he soon established order and brought prosperity to the community (Goodspeed 1888).

Since the first inhabitants of New Madrid were traders, trappers, hunters, or goatmen, no one farmed except those who cultivated small garden plots. By 1792, game became more scarce, and the Indians moved farther west. Since the Indians had provided most of the food for New Madrid through trade, it fell to the lot of resident hunters and traders to provide for the whole post (Goodspeed 1888).

There was then a move toward farming, but in 1794, all the settlers were enrolled in the militia and paid for their services. Being supported by the King was infinitely more desirable than farming for a living, but six months later when the militia was disbanded, what food was left was soon consumed. Forcher obtained enough provisions from surrounding communities to see the settlement through the winter.

A severe lesson and knowledge being acquired from virtual starvation induced the settlers to try farming, and amazing successes were realized by the newer arrivals. There was a rise in the volume of corn harvested from 6,000 bushels in 1794 to 17,000 bushels in 1796 (Goodspeed 1888).

By 1803, the Americans were approximately two-thirds of the population; the majority settled in French villages instead of on farms (Violette 1918). Usually they found the ease of land acquisition attractive, and in general discovered New Madrid to be a favorable location (Douglass 1912).

After a short period of fairly good economic and population growth, the constant shifting of the Mississippi River (see Figure 6) and a series of large earthquakes from late 1811 to 1812 destroyed the settlement and encouraged the migration of a large number of settlers.

The main shock of the New Madrid Earthquake first occurred at 2:00 a.m. on December 16, 1811, when structures throughout the region started to collapse. There were repeated shocks during the night, and the situation did not improve with morning; a tremor as severe as the first was noted at that time. The event continued through December 16 and 17, except the shocks occurred at shorter intervals and were not quite as severe as the first. The next two weeks were quiet, but on February 7, there were many tremors and shocks ". . . the last equalling or surpassing any previous disturbance, and for several days, the earth was in a nearly constant tremor" (Fuller 1966).

The ground in the New Madrid area was active for nearly a year at intervals of a few days, but none of the shocks was dangerous, and the inhabitants became used to them (Fuller 1966). History of the earthquake is better elucidated by an article taken from the New York Evening Post in 1812:

"We have seen a statement made by a couple of gentlemen just from New Madrid, which says that that place is much torn to pieces by the late earthquake; so much so, that it is "almost" impossible to get along in any way, but entirely so on horseback. The houses of brick, stone and log are torn to pieces, and those of frame thrown upon their sides. The ground near that place for 100 acres has sunk so low that the tops of the tallest trees can hardly be seen above the water, in other places more than half the length of the timber is under water. The citizens have fled to the mountains, and were, when the informants left there, waiting for an opportunity to move to Kentucky. It is said that they are near one-thousand in number! Merciful God! What a horrid situation."

New York Evening Post
March 1812

During the nineteenth century, the New Madrid bend of the Mississippi moved northwest and eventually cut through the original town (Goodspeed 1888). The present-day New Madrid is about 1.5-2 km (about 1 mile) north of the previous town site, which is now located in the river or farther south in Kentucky (Goodspeed 1888).

Most of the population of southeast Missouri sided with the Confederacy during the War Between the States, and the area of New Madrid was a part of the First Military District of Missouri (United States). In 1861, Confederate forces under General Pillow invaded southeast Missouri from Arkansas and captured New Madrid. There was a good deal of small scale action in the vicinity in 1861-1862 (Douglass 1912). The town and Island Ten (Island Ten is located in the Mississippi River) were captured by Union forces under General Pope in 1862 (Douglass 1912).

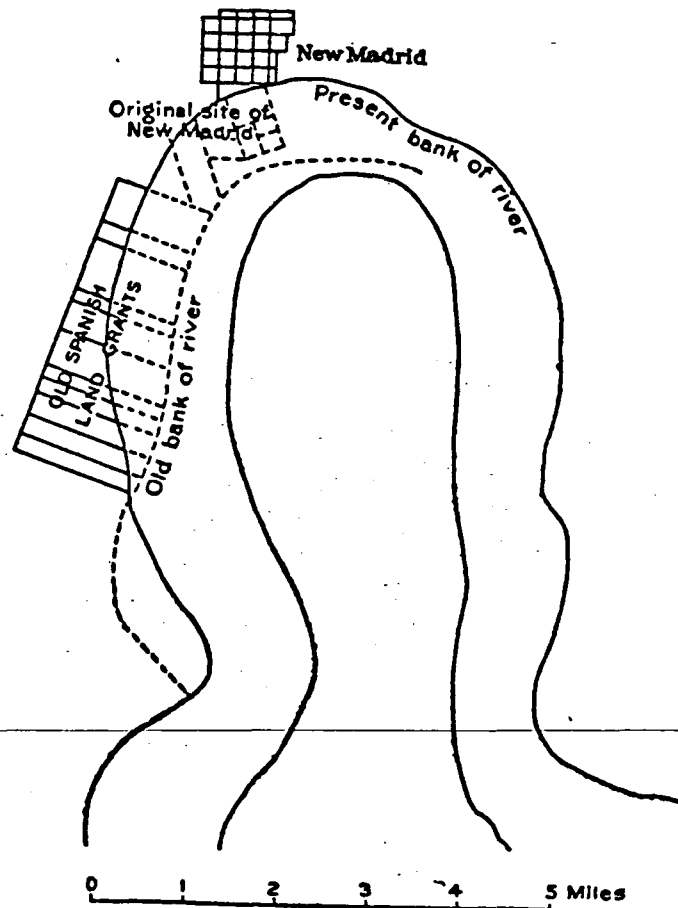


FIGURE 6. New Madrid Bend. The channel ca. 1912 and the river's course before 1811. Source: Fuller The New Madrid Earthquake. U.S. Geological Survey Bulletin 494.

During the siege of New Madrid (March 3-12, 1862), Pope headquartered in the Hunter-Dawson home (Caldwell 1963) which is located in New Madrid and 7 kilometers (4.2 miles) northwest of Crevasse #2. The Confederate district headquarters in Pocahontas, Arkansas, was captured in 1863, and the action ended Southern resistance in the New Madrid area, although there was some sporadic guerilla activity.

Following the War Between the States and a period of recovery in the 1870s, the town of New Madrid consisted of 20 stores, 2 steam saw and grist mills, 2 steam cotton gins and presses, various warehouses, storage and shipping facilities for grains and cotton, plus 3 churches, 2 schools, and 1 academy. The population was around 700 (Campbell 1874).

Other settlements in the New Madrid area include Little Prairie (now Caruthersville) founded by Francois LeSieur; Point Pleasant, settled in 1815; and Fredricktown, settled in 1819. Portageville, which was settled in 1848, attracted the former residents of Point Pleasant with the building of the St. Louis and San Francisco Railroad (Douglass 1912).

Mississippi County

The first explorers to investigate what is now present-day Mississippi County were Marquette and Joliet in 1673 and LaSalle in 1682; LaSalle claimed the territory for France. Control of the region passed to Spain in 1770, back to France, and then to the United States via the Louisiana Purchase of 1803 (Houck 1908, Vol. 1).

From the rather sparse history available of the area, the first settlement in Mississippi County was apparently founded in 1800 by Joseph Johnson near Bird's Point. Other early settlements were made on Mathews Prairie, which in earlier times was called St. Charles Prairie. Some of the first settlers were Edward Mathews and five sons, Charles Gray, Joseph Smith, John Weaver, George Hector, and Absolom McElmurry. Johnson sold his land in 1805 to Abraham Bird who settled on and developed the land previously occupied by Joseph Johnson. Bird remained there until the flood of 1814-1815, when he left for Louisiana (Goodspeed 1888). The settlement was then known as Bird's Point (Douglass 1912). "All of these . . . were farmers and traders . . . and were engaged in the actual cultivation of the soil" (Douglass 1912). The historian, Kniffen, stated that the early settlement was:

" . . . in the form of individuals or families living in almost complete isolation. The economy, such as it was, consisted of subsistence agriculture, hunting and fishing, trapping, trading, and limited exploitation of timber." (Kniffen 1971).

By 1810, the population in the area, comprising the present Mississippi County, was 100 and increased at a slow rate until 1830. Norfolk was the first town laid out (in 1836) and was followed in the next year by Charleston, which is the present County Seat. Until 1845, these were the only villages in Mississippi County (Powell 1972).

The information concerning Mississippi County's involvement in the War Between the States is rather sparse, but according to a Works Projects Administration (1941) report, General Grant led his army into the area in 1861 and engaged Confederate forces near Belmont. He eventually was forced to retreat. Skirmishes between small contingents of men and predatory guerilla action on the part of military free-booters provided the remainder of war action for a county that tendered predominately Southern sympathies. The most notable effect of the War Between the States in Mississippi County was to retard population and economic growth (Goodspeed 1888).

The roads in the county were not begun until the 1850's, and these replaced Indian trails which had been superior. According to historians, the plank or "corduroy" roads failed to span lowlands and swamps successfully, but rather were only passable during short periods of the year (Powell 1975). Only seven main roads existed in the whole county in the mid-eighteen hundreds.

The people of Charleston attempted to secure railroad connections in the early 1850's, and work was initiated by 1857. By 1859, a section of track connecting Charleston to Greenfield's Landing was completed. Work progressed toward Poplar Bluff until 1861, when the War Between the States interrupted construction (Powell 1972).

As cotton farming waned and vegetable and grain farming assumed following the war, hunters and trappers began to leave the area. By 1881, the county was rapidly filling with people from Kentucky and Tennessee, who began planting cotton along with corn, wheat, and oats which had become important cash crops.

The 1890's and demand for lumber products began the clearing of timber resources and high-yield agriculture initiated levee and drainage projects which reclaimed wetlands and protected agricultural investments.

Nathaniel Frissel was selected in 1893 by state legislation to head a survey for possible reclamation. Although he did not finish the survey within the time period, he submitted a partial report with maps. No money was appropriated for the survey or reclamation, so locals established their own ditching districts; these six were finished in 1901, and they measured 173.6 km (170 miles) (Powell 1975).

Expected Potential for Historic Resources

When one considers the nature of the Cairo lowlands environment, or for that matter, much of the environment of southeastern Missouri, the problem of settlement patterns becomes immediately apparent. Much of this area was permanently swampy and would have provided no areas suitable for habitation. In addition, these swampy areas provided effective barriers to travel throughout the year except in those years of extreme drought or during cold winters.

Large areas of the Cairo lowlands and southeastern Missouri which were not permanently wet were at least subject to seasonal inundation. During a large part of each year, these overflow areas were wet, and they would not have provided

suitable habitation areas for extended periods of time. These conditions affected the lives of the historic inhabitants of southeastern Missouri. It was not until the end of the 19th century and the beginning of the 20th century that these swamps and overflow areas were drained and the land made suitable for habitation.

Archeological and historical data suggest that settlement patterns prior to drainage involved selection of low risk areas. These low risk areas are areas of higher elevation which would normally be dry during periods of seasonal inundation. Natural levees, abandoned alluvial fans (Malden Plain, Sikeston Ridge, etc.), and upland remnants (Crowley's Ridge) were all low risk areas which would have provided suitable areas for year-round habitation.

From our knowledge of pre-drainage environment of the Cairo lowlands, we can hypothesize that:

- a. Major pre-drainage habitation areas will be limited to the elevated natural levees and ridges.
- b. Occupation of pre-drainage wetland and overflow areas will be limited to subsistence activities, such as hunting, trapping, and fishing.

FIELD METHODOLOGY

General methodologies employed during the course of the field examination of the individual study areas included pedestrian survey, shovel test pitting, and coring. Pedestrian survey was performed in those instances when ground surface visibility was greater than 50 percent. It was also employed in conjunction with the excavation of shovel test pits. Shovel test pits were excavated along paced transects at 20 meter intervals with transect intervals varying between 15 to 30 meters as determined by the specific right-of-way widths and the nature of the individual study areas. All shovel test pits were 30 x 30 x 30 centimeters in dimension. Soil from each shovel test pit was troweled thoroughly in search of cultural materials. Soil conditions, saturated fat clay, precluded screening of shovel test pits. Any stratigraphy evident in the profile was duly noted along with a description of soil color and type (if possible), inclusions, and any discernible anomalies. Coring was routinely performed across the study areas to discern the nature of the stratigraphy and if any cultural stratigraphy was discernible. A set of field notes was maintained in the field for all areas examined. In addition, areas examined and methodologies employed were placed on the appropriate project and/or quadrangle maps.

INFLOW/OUTFLOW CREVASSE #1

Field Conditions and Methodology

The physical location and natural attributes of the study area were not considered to be highly conducive for the occurrence of cultural resources during the course of the survey. As shown in Figure 2, a major portion of the right-of-way is

encompassed within the borrow areas paralleling the main levee or within James Bayou. The low elevation of the study area is conducive to flooding and as such would generally make the area undesirable for habitation. In addition, much of the access lane which extends from the levee to the Mississippi River crosses land surface which has been formed in the past 100 years.

At the time of the survey, the ground surface within the proposed access lane boundaries was a cleared cultivated field with 100 percent visibility. The area had also been subjected to extensive rainfall preceding the period in which field work occurred. Consequently, conditions were considered to be optimal for surface recognition of cultural resources. A pedestrian survey of the right-of-way within the access lane boundaries was performed.

In the northern portion of the right-of-way, a section of the levee bows out, leaving an approximate 1500 foot section of woods between the old borrow pits which abut the levee and James Bayou. Attempts to examine the area over a two week period were largely unsuccessful due to high water conditions. However, field observations made along the right-of-way peripheries noted extensive past disturbance associated with levee construction over the right-of-way area. In addition, the nature of the immediate vegetation indicated that the area was subjected to frequent flooding.

As noted during the pedestrian survey, soils within the access lane boundaries were generally a silty clay loam with clay content increasing approaching James Bayou. These soils are within the Commerce-Caruthersville association commonly described for floodplain areas of the Mississippi River. Core samples placed across the study area revealed an average depth for the silty clay loam of 60 centimeters (24 inches) which was underlain by sand.

INFLOW/OUTFLOW CREVASSE #2

Field Conditions and Methodology

The natural attributes of the study area greater lend themselves to the probability of cultural resources occurring during the course of the survey as compared to Crevasse #1. A more varied topography exists with a series of fingerlike sand ridges dissecting portions of the project right-of-way. In addition, the archival review indicated that a previously recorded archaeological site was in close proximity to the proposed project area.

At the time of the survey, the entire study area was covered by thick woods. Vegetative cover and thick leaf litter reduced ground visibility to less than 10 percent in most areas. This necessitated placing a series of shovel test pit transects across the study area. Shovel test pits were placed at 20 meter (75.6 feet) intervals beginning at Station 85/5+00 (See Figure 3) to approximate Station 84/27+80. Transect intervals varied from 15 to 30 meters (49.2 to 98.4 feet) depending upon the portion of the right-of-way covered by James Bayou. At Station 84/27+80, high water extended from Dawson Hole in a southeasterly

direction to the lower elevation beyond the edge of a sand ridge to approximately Station 84/22+80.

The high water necessitated gaining entry to the access lane from the levee. This was accomplished only after crossing an approximate 6.3 meter (20 feet) wide area of water that average .6 meter (2 feet) in depth. The area was covered in woods with ground cover reducing visibility to less than 10 percent. Shovel test pits were placed at 20 meter (75.6 feet) intervals across the width of the access lane with 15 meter (49.2 feet) transect intervals. High water extended from the river bank for a distance of approximately 219 meters (700 feet) into the access lane boundaries. These conditions precluded performing shovel testing in this portion of the right-of-way. However, archival review had previously indicated that this portion of the access lane right-of-way was characterized by land surface less than 100 years old.

Shovel testing and core samples placed across the study area revealed an undulating top stratum of silty clay loam whose depth varied according to immediate topography progressing north to south across the study area. North of Dawson Hole, the silty clay loam to clay top stratum averaged 33 centimeters (13 inches) in depth and was underlain by 45 centimeters (18 inches) of sand with clay and sand lenses alternating beneath the sand. In the vicinity of Dawson Hole, a series of fingerlike sandy ridges dissect the study area. The top stratum of clay averaged 15 centimeters (6 inches) in depth and was underlain by sand and percolating water. South of Dawson Hole, where water apparently pools more frequently, the top clay stratum extended 58 centimeters (23 inches) before the underlying sand was encountered.

Weather conditions during the survey period were generally sunny to partly cloudy with temperatures ranging from the high 20's (Fahrenheit) to 30's in the mornings to 40's and 50's later in the afternoon. The ground surface was generally frozen to mid-morning. High water conditions was the main impediment to field examinations over the duration of the survey.

RESULTS AND RECOMMENDATIONS

OVERVIEW

During the archival and cartographic review conducted for the Bird's Point-New Madrid Floodway Inflow/Outflow Crevasse #1 and #2 project areas, one prehistoric site (23NM234) was recorded to be in proximity to the Crevasse #2 project area. Field examination showed that the site boundaries did not extend into the project right-of-way. An approximate 30 meter (97 feet) buffer exists between the site periphery and the northern project boundary.

Field investigations located one cultural area within the project right-of-ways. This area of historic scatter was discovered during shovel test pit procedures conducted for the Inflow/Outflow Crevasse #2 project area.

The historic scatter was evidenced by the presence of surface and subsurface cultural materials scattered over an approximate 30 x 30 meter (97 x 97 feet) area. It is located on one of the fingerlike sand ridges which dissect the right-of-way.

Fragments of rusted metal were encountered in shovel test pits to an approximate depth of 25 centimeters (12 inches). Cultural materials noted over the surface area include a gas stove, seamed bottle glass fragments, plastic fragments, assorted metal beverage cans, and asphalt shingles. An assortment of clear bottle glass fragments were collected. No architectural materials other than asphalt shingles were observed. Nor was any evidence of a foundation or other structural components noted within the site area. Cultural materials collected and noted were of modern origin probably dating no earlier than the late 1950's to early 1960's. No structures are indicated in the immediate vicinity of the site area on the appropriate topographic maps.

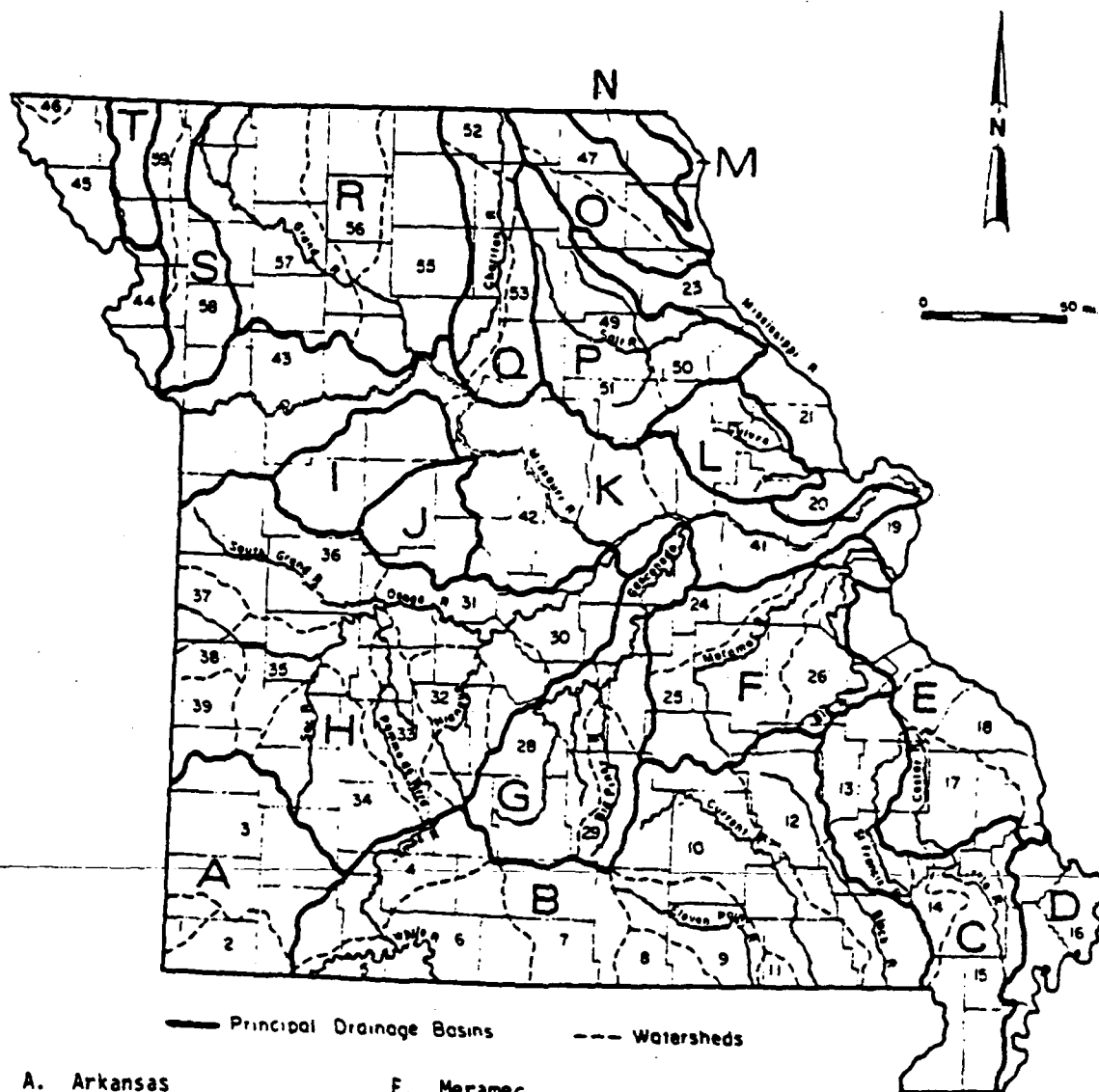
Available data indicate that the scatter is a modern refuse dump of a type commonly encountered along the Main Mississippi River Levee.

SITE DESCRIPTIONS

No archaeological sites were discovered within the project right-of-way.

RECOMMENDATIONS

It is recommended that the Bird's Point-New Madrid Floodway Crevasse #1 and #2 projects proceed as planned within the right-of-way boundaries described in this report. However, if cultural resources are discovered during the course of construction, or should any part of the proposed project be relocated, or if additional project areas are proposed, these conditions should be reported immediately to the Missouri Office of Historic Preservation and District Archaeologists, U.S. Army Corps of Engineers, Memphis District for appropriate action.



- | | | |
|-----------------------------|------------------------|------------------------|
| A. Arkansas | F. Meramec | |
| 1. Long Creek | 24. Bourbeuse | L. Cuivre |
| 2. Elk | 25. Meramec | M. Des Moines |
| 3. Spring | 26. Big | N. Wyaconda/Fox |
| B. White | G. Gasconade | O. Fabius |
| 4. James | 27. Lower Gasconade | 47. North Fabius |
| 5. Table Rock | 28. Upper Gasconade | 48. South Fabius |
| 6. White | 29. Big Piney | P. Salt |
| 7. North Fork | H. Osage | 49. North Fork |
| 8. Spring | 30. Lower Osage | 50. Salt 1 |
| 9. Eleven Point | 31. Lake of the Ozarks | 51. Salt 2 |
| 10. Current | 32. Niangua | Q. Chariton |
| 11. Fourche Creek | 33. Pomme de Terre | 52. Upper Chariton |
| 12. Black | 34. Sac | 53. Lower Chariton |
| C. St. Francis | 35. Upper Osage | 54. Middle/East Fork |
| 13. Upper St. Francis | 36. South Grand | R. Grand |
| 14. Lower St. Francis | 37. Marais des Cygnes | 55. Grand 1 |
| 15. Little River | 38. Little Osage | 56. Thompson |
| D. Lower Mississippi | 39. Marmaton | 57. Grand 2 |
| 16. Lower Mississippi | I. Blackwater | S. Platte |
| E. Upper Mississippi | J. Lamine | 58. Platte |
| 17. Whitewater/Castor | K. Missouri | 59. One Hundred & Two |
| 18. Mississippi 1 | 41. Missouri 1 | T. Nodaway |
| 19. Mississippi 2 | 42. Missouri 2 | |
| 20. Mississippi 3 | 43. Missouri 3 | |
| 21. Mississippi 4 | 44. Missouri 4 | |
| 22. Mississippi 5 | 45. Missouri 5 | |
| 23. North River | 46. Nishnabotna | |

FIGURE 7

BIBLIOGRAPHY

REFERENCES CITED

Beckwith, Thomas

- 1911 The Indian or Mound Builder. Cape Girardeau.

Brown, Burnton L.

- 1977 Soil Survey of New Madrid County, Missouri. USDA Soil Conservation Service.

Caldwell, Dorothy J. (Editor)

- 1963 Missouri Historic Sites Catalogue. State Historical Society of Missouri, Columbia, Missouri.

Campbell, R. A.

- 1874 Campbell's Gazetteer of Missouri. R. A. Campbell, St. Louis.

Chapman, Carl. H.

-
- 1947 A Preliminary Survey of Missouri ARCHAEOLOGY, Part 2: Middle Mississippi and Hopewellian Cultures. The Missouri Archaeologist 10(2).

- 1974 Investigation and Comparison of Two Nationally Registered Mississippi Archaeological Sites in Southeastern Missouri. Final report to the National Endowment for the Humanities.

- 1975 The Archaeology of Missouri, I. University of Missouri Studies 62.

- 1976 Internal Settlement Designs of Two Mississippian Tradition Ceremonial Centers in Southeastern Missouri. In Cultural Change and Continuity: Essays in Honor of James Bennett Griffin, edited by Charles E. Cleland, pp. 121-146.

Cottier, John W.

- 1974 The Area Archaeological Reconstruction. In: Investigation and Comparison of Two Nationally Registered Mississippi Archaeological Sites in Southeastern Missouri. Submitted by Carl H. Chapman. Final report to the National Endowment for the Humanities.

Douglass, Robert S.

- 1912 History of Southeast Missouri. Lewis Publishing Co.

Festervand, Dorris F.

- n.d.a. Checklist of Some Soil Properties for Soils of Cape Girardeau, Mississippi and Scott Counties, Missouri. Unpublished manuscript on file in the Soil Conservation Service Area 5 Office, Cape Girardeau Missouri.
- n.d.b. Soil Associations in Cape Girardeau, Scott and Mississippi Counties, Missouri. Unpublished manuscript on file in the Soil Conservation Service Area 5 Office, Cape Girardeau, Missouri.

Foley, William E.

- 1971 A History of Missouri, 1673-1820 (Vol. 1). University of Missouri Press, Columbia, Missouri.

Fowke, Gerard

- 1910 Antiquities of Central and Southeastern Missouri. Bureau of American Ethnography, Bulletin 37, Washington, D.C.

Fuller, Myron L.

- 1966 The New Madrid Earthquake. Reprint edition Ramfire Press. Cape Girardeau, Missouri.

Goodspeed

- 1888 History of Southeast Missouri. Goodspeed Publishing Company, Washington, D.C.

Goodyear, Albert C.

- 1974 The Brand Site: A Technofunctional Study of a Dalton Site in Northeast Arkansas. Arkansas Archaeological Survey Research Series No. 7.

Greer, John W. (assembler)

- 1978 A Cultural Resource Study of the P62 Products Line Across Southeast Missouri. Survey Report No. 2. Columbia, MO Archeological Services.

Griffin, James B.

- 1941 The Central Mississippi Valley Archaeological Survey. Southeastern Archaeological Conference Newsletter 2 (4).
- 1952 Prehistoric Cultures of the Central Mississippi Valley. In: Archaeology of the Eastern United States, edited by James B. Griffin, Chicago: University of Chicago Press.

Harris, Suzanne E.

- 1977 A Cultural Resource Assessment of a Proposed City Administration Building, East Prairie, Mississippi County, Missouri. Manuscript on file, American Archaeology Division, University of Missouri - Columbia.

Hopgood, James F.

- 1969 Continuity and Change in the Baytown Pottery Tradition of the Cairo Lowlands, Southeast Missouri. Unpublished M.A. thesis. Department of Anthropology, University of Missouri - Columbia.

Houck, Louis

- 1908 A History of Missouri Vols. I & II. Chicago: R. R. Don Nelley & Sons Company.

Jennings, Jessie D.

- 1974 Prehistory of North America. McGraw-Hill. New York.

Klinger, T. C. (assembled by)

- 1976 Village Creek: An Explicitly Regional Approach to the Study of Cultural Resources. Report submitted to the USDA - Soil Conservation Service, Little Rock. Arkansas Archeological Survey, Fayetteville.

Kniffen, Fred

- 1971 The Lower Mississippi Valley: European Settlement, Utilization and Modification. Report prepared for the National Park Service, Southeast Region and Arkansas Archeological Survey.

Kraker, J. J.

- 1977 Archaeological Survey in Mingo National Wildlife Refuge: An Investigation of Changing Adaptations in the Ozark Border. Final report to the Department of Interior, Mingo National Wildlife Refuge.

Larson, L. H., Jr.

- 1970 Settlement Distributions During the Mississippi Period, Southeastern Archaeological Conference, Bulletin 13.

Lewis, R. B.

- 1974 Mississippian Exploitative Strategies: A Southeast Missouri Example. Missouri Archaeological Society Series II.

March, David D.

- 1967 The History of Missouri. Lewis Historical Publishing Company,
New York.

Marshall, Richard A.

- 1965 An Archaeological Investigation of Interstate Route 55 through
New Madrid and Pemiscot Counties, Missouri, 1964. Highway Archaeology
Report No. 1, Missouri State Highway Department, University of Missouri.

Moore, Clarence B.

- 1916 Some Aboriginal Sites on Green River, Kentucky. Certain Aboriginal
Sites on Lower Ohio River. Additional Investigation on Mississippi
River. Academy of Natural Sciences of Philadelphia Journal 16.

Morse, D. F.

- 1969 Introducing Northeastern Arkansas Prehistory. The Arkansas
Archaeologist 10.

McNerney, Michael J.

- 1972 A Cultural Resources Literature Search for the St. John's Bayou and
New Madrid Floodway Project: New Madrid, Scott, and Mississippi
Counties, Missouri. Fischer-Stein Associates, Carbondale, Illinois.

Phillips, Phillip

- 1970 Archaeological Survey in the Lower Yazoo Basin, Mississippi, 1949-
1955. Part One. Papers of the Peabody Museum of Archaeology and
Ethnology, Harvard University, Vol. 60, Cambridge.

Potter, William B.

- 1880 Archaeological Remains in Southeastern Missouri. Contributions to the
Archaeology of Missouri. St. Louis Academy of Science, Part 1: 5-19.

Powell, Betty F.

- 1975 History of Mississippi County, Missouri, Beginning Through 1972.
Independence, Missouri: BNL Library Service.

Price, Cynthia R.

- 1976 Final Report of an Archaeological Survey and Cultural Resource
Assessment for a Sewage Treatment Project for the Village of North
Lilbourn, New Madrid County, Missouri. MS on file, Division of
American Archaeology, University of Missouri - Columbia.

Price, Cynthia R. and Suzanne E. Harris

- 1978 A Cultural Resources Survey of Proposed Sewer Line and/or Water Main Routes in New Madrid Industrial Park Area, New Madrid, New Madrid County, Missouri: 1978. Center for Archaeological Research Report No. 155.

Price, Cynthia R. and James E. Price

- 1977 An Archaeological and Historical Literature Review of the Cape Girardeau-Jackson Metropolitan Area, Cape Girardeau County, Missouri. Report submitted to the U.S. Army Corps of Engineers, St. Louis District. American Archaeology Division, University of Missouri - Columbia.

Price, James E.

- 1974 Mississippian Settlement Systems of the Central Mississippi Valley. Paper presented at an advanced Seminar on Mississippian Development, School of American Research, Santa Fe.

Price, James E. and Suzanne Harris

- 1978 A Cultural Resources Survey of the Proposed New Madrid Bend Access, New Madrid, New Madrid County, Missouri: 1978. Center for Archaeological Research, Springfield, Missouri.

Price, James E. and J. J. Krakker

- 1975 Dalton Occupation of the Ozark Border. Museum Brief No. 20. The Museum of Anthropology. University of Missouri. Columbia, Missouri.

Price, James E., Cynthia R. Price and S. E. Harris

- 1976 An Assessment of the Cultural Resources of the Fourche Creek Watershed. Prepared for the Soil Conservation Service by the University of Missouri, Southeast Missouri Archaeological Research Facility in fulfillment of Contract No. USDA-AG-29SCS-00527 between the Curators of the University of Missouri and the Soil Conservation Service.

Price, James E., Cynthia R. Price with S. E. Harris and J. H. House

- 1975 An Assessment of the Cultural Resources of the Little Black Watershed. Prepared for the Soil Conservation Service in fulfillment of a Cooperative Agreement between the Curators of the University of Missouri and Soil Conservation Service.

Redfield, Alden

- 1971 Dalton Project Notes, I. University of Missouri, Museum of Anthropology Museum Brief 13.

Saucier, Roger T.

- 1964 Geological Investigation of the St. Francis Basin, Lower Mississippi Valley. U.S. Army Corps of Engineers, Waterways Experiment Station, Technical Report, 3-659. Vicksburg.
- 1974 Quaternary Geology of the Lower Mississippi Valley. Arkansas Archaeological Survey Research Series 6.

Stewart, J. C.

- 1976 Kernett/Baytown Distributional Variability: An Analysis Using the 1976 Village Creek Collections. In: Village Creek: An Explicitly Regional Approach to the Study of Cultural Resources, assembled by Timothy C. Klinger. Manuscript on file with the Arkansas Archaeological Survey, Fayetteville.

Swallow, George C.

- 1875 Annual Report of the Peabody Museum, Harvard University 8.

Tandarich, John P. and Michael J. Reagan

- 1978 A Cultural Resource Overview of the Mississippi County Spillway Watershed and Peafield Drainage, Missouri. For: The Office of Historic Preservation, Missouri Department of Natural Resources.

Thomas, Cyrus

- 1891 Catalog of Prehistoric Works East of the Rocky Mountains, Bulletin 12, Bureau of American Ethnology, Washington, D.C.
- 1894 Report of the Mound Explorations of the Bureau of American Ethnology. 12th Annual Report of the Bureau of American Ethnology for 1890-1891.

Viollette, Eugene Morrow

- 1918 A History of Missouri. D. C. Heath and Company, Boston.

Walker, W. M. and R. M. Adams

- 1946 Excavations in the Matthews Site, New Madrid County, Missouri. Transactions of the Academy of Science of St. Louis, 31. St. Louis.

Ward, Trawick

- 1965 Correlation of Mississippian Sites and Soil Types. Southeastern Archaeological Conference Bulletin 3.

Willey, Gordon R.

- 1966 An Introduction to American Archaeology, Vol. 1, Prentice-Hall, Englewood Cliffs, New Jersey.

Williams, James Raymond

- 1964 A Study of Fortified Indian Villages in Southeast Missouri.
Unpublished M.A. thesis, Department of Anthropology, University of Missouri, Columbia.
- 1967 Land Leveling Salvage Archaeological Work in Southeast Missouri, 1966. National Park Service Manuscript.
- 1968 Southeast Missouri Land Leveling Salvage Archaeology: 1967.
National Park Service Manuscript.
- 1971 A Study of the Baytown Phases in the Cairo Lowland of Southeast Missouri. Unpublished Ph.D. dissertation. Department of Anthropology, University of Missouri - Columbia.
-

- 1974 The Baytown Phases of the Cairo Lowland of Southeast Missouri.
Missouri Archaeologist, Vol. 36.

Williams, Stephen

- 1954 An Archaeological Study of the Mississippian Culture in Southeast Missouri. Unpublished Ph.D. dissertation. Department of Anthropology, Yale University.

Work Projects Administration

- 1941 Missouri: A Guide to the "Show Me" State. Duell, Sloan, and Pearce, New York.

MAPS

- 1890 Mississippi County, Missouri Survey Records. Township 25 North, Range 17 East. Survey performed by J. C. O'Bryan Co., Surveyors.
- 1891 Mississippi County, Missouri Survey Records. Township 23 North, Range 16 East. Survey performed by J. C. O'Bryan Co., Surveyors.
- 1904 Mississippi County, Missouri Survey Records. Township 23 North, Range 16 East, Sections 15, 22, and 23. Survey performed by C. S. Reynolds Co., Surveyors.
- 1914 Mississippi County, Missouri Survey Records. Township 23 North, Range 16 East, Section 23. Survey performed by Toler.
- 1917 Mississippi County, Missouri Survey Records. Township 23 North, Range 16 East, Section 22. Survey performed by A. E. Swank, County Surveyor.
- 1938 Mississippi River Commission. Early Stream Channels, Cairo, Illinois to Baton Rouge, Louisiana. Mile 24 to 117. Scale: 1 inch to one mile.
- 1955 U.S.G.S. Bayouville Quadrangle, Missouri, Kentucky, and Tennessee. Scale: 1:62,500.
-
- 1972 U.S.G.S. Bayouville Quadrangle, Missouri, Kentucky, and Tennessee. Scale: 1:62,500.
- 1969 U.S.G.S. Hubbard Lake Quadrangle, Missouri, Kentucky, and Tennessee. Scale: 1:24,000

INTERVIEWS

4 January 1983

Mr. Sam Jones, a resident of East Prairie, Missouri, was interviewed by Jimmy McNeil, District Archaeologist, Corps of Engineers.