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A PHASE I ARCHAEOLOGICAL SURVEY OF
PROPOSED BARRIER ISLANDS
NAVIGATION POOL 8
UPPER MISSISSIPPI RIVER
(DACW37-89-M-1104)

REPORTS OF INVESTIGATIONS NO. 101
THE MISSISSIPPI VALLEY ARCHAEOLOGY CENTER
AT
THE UNIVERSITY OF WISCONSIN-LA CROSSE

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19. ABSTRACT (Continue on reverse if necessary and identify by block number) The portion of pool 8 on the Upper Mississippi River is primarily open water, and has been since the completion of lock and dam 8 at Genoa, WI. Remnant exposed landforms in these lower ends have been subjected to severe erosion due to unabated wave action. The destruction of these landforms has not only impacted potential cultural resources, but affected wildlife habitat in the Upper Mississippi Wildlife Refuge. The St. Paul District, Corps of Engineers and the U.S. Fish & Wildlife Service have initiated a program of creating barrier islands, the intent of which is to reduce wind and wave action at the lower ends of the navigation pools. A cultural resources survey of the area did not reveal any significant cultural activity. Therefore, no recommendations for additional cultural resources investigations in advance of construction of the pool 8 barrier islands are offered. <i>Keywords: Barrier Islands; Landforms; Erosion; Inland Waterways; Upper Mississippi River.</i>					
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By: Robert F. Boszhardt



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AUGUST, 1990

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Management Summary

Like the lower end of all 26 artificial pools of the upper Mississippi River, the portion of Pool 8 from navigation mile 684-688 is primarily open water, and has been since the completion of lock and dam 8 at Genoa (Wisc.) in the late 1930's. Remnant exposed landforms in these lower ends have been subject to severe erosion due to unabated wave action on the artificial pool. The destruction of these landforms has not only impacted potential cultural resources, but affected wildlife habitat in the Upper Mississippi Wildlife Refuge. Consequently, managing agencies including the St. Paul District Corps of Engineers and the U.S. Fish and Wildlife Service have initiated a program of creating barrier islands, the intent of which is to reduce wind and wave action at the lower ends of navigation pools.

The proposed barrier islands at the lower end of navigation pool 8 follow a ring of low narrow islands that mark the approximate north and east shore of Island 120, formerly an extensive floodplain landform. Survey of this shoreline was undertaken during the summer of 1989 and consisted of two parts. A literature/archival review found no evidence of recorded archaeological or historic sites within the project area with the exception of a 1930's trail ending at the northeast shore of Island 120. The literature review did reveal the presence of several mid-19th century fur trading posts at the lower end of Island 120 and two steamboat wrecks in Coon Slough along its eastern edge, but apparently downstream of the proposed barrier islands. In addition, contact with informants identified the location of two unreported prehistoric sites further upstream in pool 8.

The second aspect of the survey was field inspection of the proposed barrier islands. This was undertaken during a low water stage when conditions

were ideal for pedestrian survey of the shoreline. Surface inspection found a scattering of late historic artifacts along the shore for some 40 meters southeast of a short concrete and rock wall located at the very northern tip of Island 120. The wall and some artifacts (eg. round nails) suggest the presence of a structure there. Other materials reflect visits to the island by various sportsmen over the years. In addition, examination of exposed verticle banks, complimented by selective coring found that Island 120 was covered with well over a meter of post-settlement (1850) alluvium. Consequently, buried pre-1850 cultural deposits may exist within the project area. Furthermore, the survey documented evidence of loss of several lateral meters of shoreline since completion of lock and dam 8. Therefore, potential site surfaces may also have been removed.

In sum, the only cultural resources identified at the project area were recent historic materials, some perhaps related to an apparent structure at the head of Island 120. With the exception of historic rock revetment and some materials left by sportsmen, no other evidence of cultural activity was located at the project area. Therefore, no recommendations for additional cultural resources investigations in advance of construction of the pool 8 barrier islands are offered.

Introduction

The lower end of navigation pool 8 of the upper Mississippi River was impounded in the late 1930's with the completion of lock and dam No. 8 at Genoa. This action caused permanent innundation of vast tracts of floodplain that formerly would have been subject to seasonal or periodic flooding, but would normally have been above water. The highest landforms in the lower end of pool 8 remained above water as low islands that were then subject to accelerated ero-

sion due to increased wind and wave action. Consequently, after 50 years, little remains of these islands, though action is currently proposed to stabilize and rebuild them for habitat improvement (Figure 1).

Unfortunately, cultural resources are generally not replaceable, and there is virtually no account of the number or types of prehistoric and historic sites that may have been lost to erosion since the completion of lock and dam 8. The pre-lock and dam configuration of the lower end of pool 8 suggests that it was a strategic location for prehistoric and historic activities. This inference is based on the fact that Island No. 120 in effect split the main channel into two sub-channels that flowed on either side. The eastern sub-channel was historically called Coon Slough, the western "Raft Channel". Early accounts describe Coon Slough as deeper and more swift than Raft Channel, but also more crooked. These channels merged again at the lower end of Island 120, just above lock and dam 8.

Other than study of adjacent terraces at Stoddard and Goose Island, along the Wisconsin side, and mound surveys, along the Minnesota and Wisconsin bluff line, there is virtually no record of previous cultural resources study of the lower end of pool 8. Sporadic shoreline surveys in the upper end of pools 8 (Rodell 1989) and 9 (Benn 1976) have noted the presence of some prehistoric materials on Mississippi River floodplain islands. More thorough survey of Pool 7 upstream found extensive floodplain utilization during prehistory despite the presence of extensive quantities of post-settlement alluvium on lower landforms (Boszhardt 1989a; Overstreet et. al. 1986). At downstream pool 10, prehistoric sites are common on virtually all floodplain landforms (Boszhardt 1982, Overstreet 1984, Theler 1987). Historically there is also little record for the lower pool 8 floodplain. However, accounts do document several 1840's fur trade

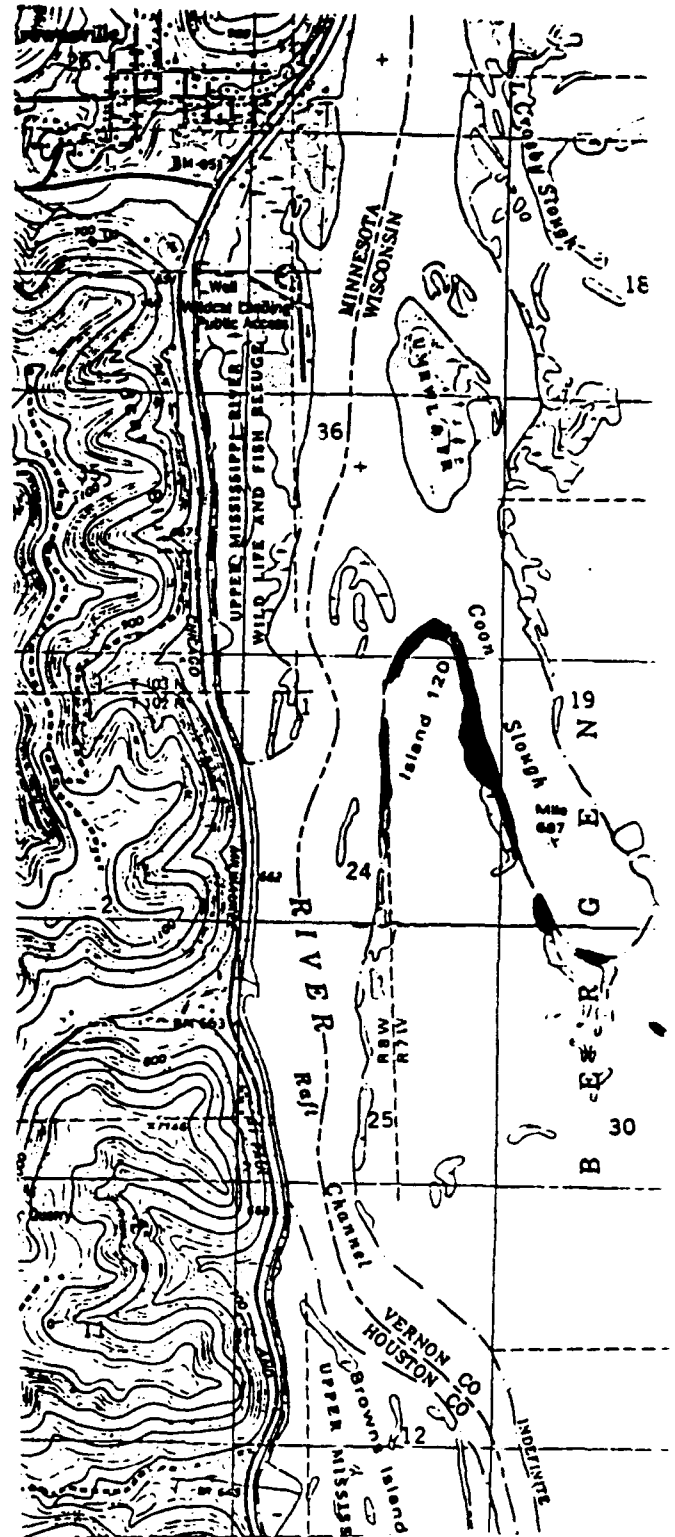
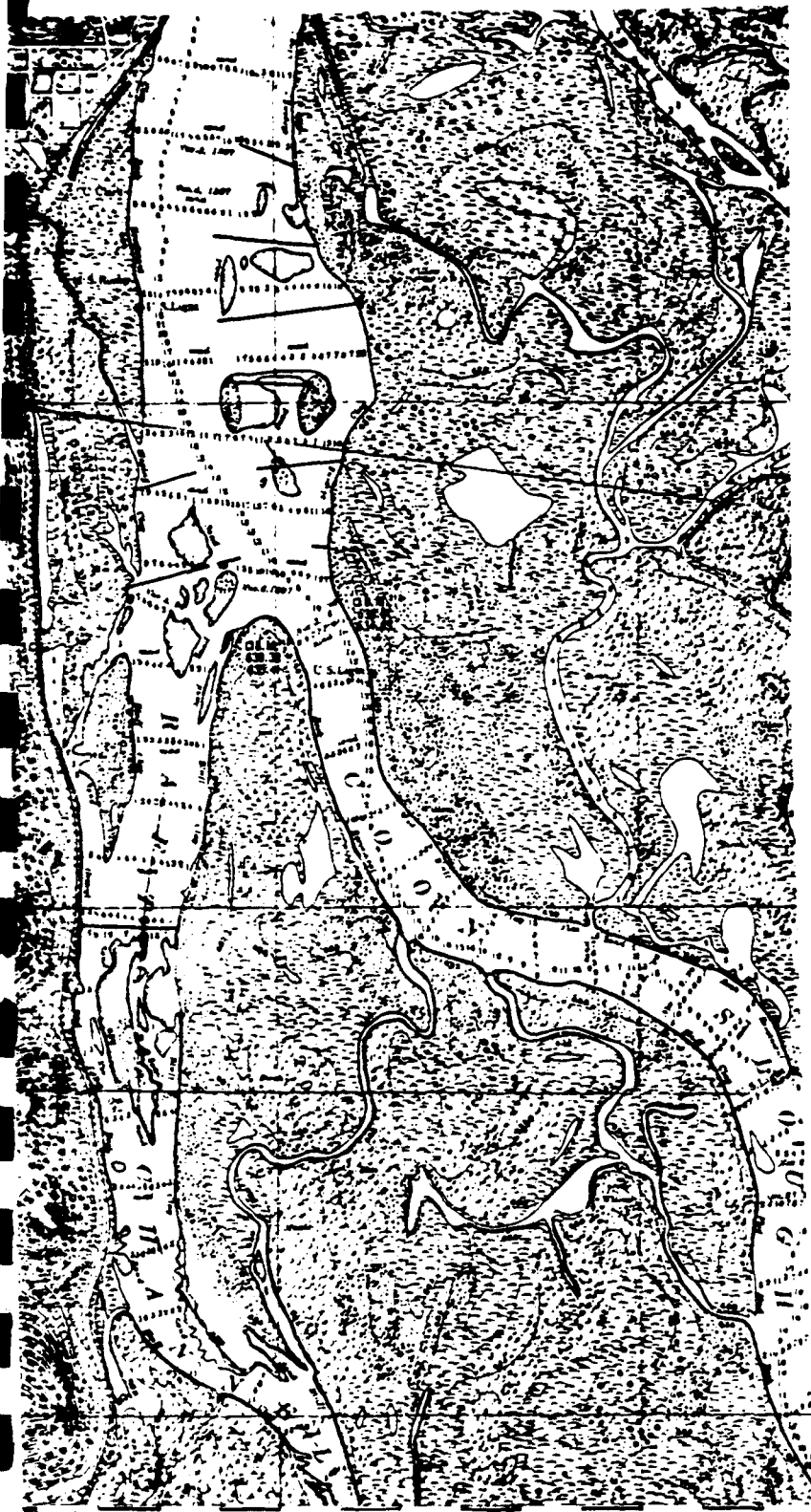


Figure 1: Location of project area on USGS (Brownsville, Minn. 7.5') Topographic map (right), and pre-lock and dam configuration as depicted on 1890's Mississippi River Commission Chart (No. 171; left).

posts there and several steamboat wrecks in Coon Slough.

A Phase I survey of selected islands at the lower end of pool 8 was undertaken in early summer of 1989. This survey focussed on landforms that were proposed to become the base for barrier island construction. The survey was undertaken during a relatively low water period allowing pedestrian inspection of exposed shorelines. This methodology was complimented by occasional soil probes to verify stratigraphic interpretations.

The results of the survey find that no prehistoric and only recent historic materials are exposed along the current shorelines. It is also apparent that many meters of lateral shoreline and thus possible sites, have been lost to erosion. Furthermore, exposed bank profiles and soil cores revealed 1.5-2 meters of post-settlement alluvium over most of the remnant islands. In fact, pre-1850 sediments were exposed in only a few small areas, and these were at water level at the time of the survey.

In sum, the survey found no evidence of potentially significant cultural resources, although it seems probable that past peoples did utilize at least portions of the study area. The absence of any definite pre-lock and dam age artifacts or record of earlier sites at these locations, therefore, precludes recommendations for additional cultural resources study.

Environmental Setting

The project area lies within the unglaciated Driftless Area of southwestern Wisconsin and adjoining Minnesota, Iowa and Illinois. The Driftless Area is typified by deeply dissected terrain reflecting mature drainages that have eroded into sedimentary dolomite and sandstone in dendritic patterns (Martin 1965). The Driftless Area is bisected on its western edge by the trench of Mississippi River which formed during the Pleistocene Epoch. Repeated torren-

tial floods of glacial meltwaters to depths approaching 1,000 feet from the bluff tops, and then partially filled it back up with sand and gravel outwash. The last major glacial outwash flood in the Mississippi trench occurred approximately 9500 B.P. coinciding with the beginning of the Holocene Epoch.

During the Holocene, the upper Mississippi River has alternatively eroded and aggraded leaving sand and gravel terraces above the present floodplain at places. The pre-lock and dam floodplain configuration was for the most part a Holocene creation with islands, marshes, channels, sloughs, ponds, and bars that were subject to inundation annually, if not more frequently. Native flora and fauna adapted to these floodplain habitats included elm, silver maple, river birch and occasional red oaks on islands with understories of poison ivy and wild grape; lotus, arrowleaf, lily pad and occasional wild rice in the wetlands with beaver, muskrat, and other small mammal; and a vast assortment of fish, freshwater mussels and waterfowl the latter fluctuating dramatically in population according to migration patterns.

The character of the upper Mississippi floodplain appears to have varied dramatically during the Holocene due to prevailing climatic conditions. For the first several thousand years, corresponding with the warm dry "Altithermal", the floodplain was much drier than over the past 4,000 years when moister conditions resumed.

The project area consists of remnant islands at the lower end of navigation pool 8 of the upper Mississippi River. Pool 8 is one of a series of artificial impoundments along the upper Mississippi, each characterized by expansive bodies of water at their lower ends. The permanently raised water levels above the lock and dams that created the pools, has inundated extensive tracts of former floodplain and resulted in active erosion of remnant islands.

Prior to the completion of lock and dam 8 in the late 1930's, the lower end of what is now pool 8 was a broad floodplain encompassing several river channels, sloughs, marshes, backwater ponds, and islands. Of significance is the fact that the main channel of the Mississippi River divided at the head of island No. 120 into two sub-channels that rejoined six miles below at present day Genoa, Wisconsin. To the east of Island 120 flowed Coon Slough, to the west Raft Channel. The latter was considered the main channel for purposes of determining the boundary between Minnesota and Wisconsin, although records indicate Coon Slough was the principal one used by historic boat traffic. For example, the Government Land Office Survey records for township T13N R7W states "Coon Slough is not so wide as the main channel, but is very deep and rapid and is used as the steamboat channel.," and for T14N R7W "The ground near the bluffs seems lower than on the river from the strong current in Middle and Coon Sloughs and the latter is the steamboat channel, and is also preferred by the lumbermen to the main channel" (Brown 1846).

Previous Investigations

No overview cultural resources study involving field work has been undertaken in navigation pool 8. A literature/archival records review (Overstreet 1983) found a number of prehistoric and historic sites along the margins of Pool 8 that include mounds, camps, villages, and structures representing some 10,000 years of human presence. Within the pool itself, archaeological sites were only previously recorded for two higher sandy landforms that likely represent cutoff or outlier terraces these places are Goose Island and the White Camp area on a point just southwest of Stoddard. Both of these landforms were found to have extensive remains of prehistoric occupation ranging in time from Late Archaic to Oneota (see Harris 1979, Salkin 1979, Hays et. al. 1982 for Goose Island, and

McKern 1931 and Sasso 1987 for the White Camp sites). The 1983 literature/ records overview also documented a few historic sites in pool 8, consisting of a bridge and the sunken steamboat wreck the War Eagle, both near the city of La Crosse well above the barrier island project area.

A few surveys of selected or specified portions of pool 8 have been undertaken in the 1980's. These include a survey in 1983 by an undergraduate student at the University of Wisconsin-La Crosse as an independent study project, a compliance survey of Hintgen Island by the Mississippi Valley Archaeology Center (MVAC) in 1988 (Rodell 1988) and a survey of a small area at the upper end of the pool by MVAC (Boszhardt 1988). These surveys found little evidence of cultural remains other than a few flakes on the upper end of Hintgen Island and remains of the former steamboat ferry landing ("Grand Crossing") that connected La Crosse and La Crescent prior to bridges. In addition, informants have reported a prehistoric archaeological site at Pettibone Island and MVAC undertook an archival study of that island that focussed on reports of 1830's-40's fur trade posts and Winnebago camps (Boszhardt 1989b).

Methods

Survey of the proposed barrier island sites in navigation pool 8 included an archival/literature review and field work. The literature review included examination of county histories on either side of the Mississippi River (Houston-Minnesota; Vernon-Wisconsin), accounts of early explorers and travellers through this portion of the upper Mississippi River, historic maps of the relevant portion of the Mississippi floodplain beginning with the Government Land Office Surveys (1846 for Wisconsin and 1851-53 for Minnesota) and continuing until the lock and dam construction, and miscellaneous documents such as steamboat records housed at the Area Research Center at the University of

Wisconsin-La Crosse and fur trade accounts from the Green Bay and Prairie du Chien records on the archives of the State Historical Society of Wisconsin (copies of which are on file at MVAC). In addition, local collectors or other persons familiar with that portion of the floodplain were interviewed.

The field work consisted of travel to the various islands in a flat-bottomed boat. At the time of the survey, the water level was at a relatively low stage allowing pedestrian survey of the shorelines and beaches. Conditions for this type of coverage were excellent. The shorelines were walked from the boat down the shore and back again by two persons, and thus examined four times. In addition, exposed back cuts were trowelled clean and corings using a 1" diameter oak-field soil probe allowed evaluation of stratigraphic sequences. Field notes were taken as were black and white photographs. All notes, records and artifacts from these efforts are curated at MVAC.

Results

Informant interviews did not reveal knowledge of archaeological or historic sites in the project area specifically, but did lead to the reporting of two prehistoric sites farther upstream in pool 8. Historic accounts found reference to an 1842 fur trade post at the foot of Coon Slough (down river of the proposed barrier islands), and several steamboat wrecks in Coon Slough itself. One of the wrecks may have occurred along the shore of the proposed barrier island.

The 1842 fur trade post was recounted by Nathan Myrick some 40 and 50 years later (Myrick 1881, 1892). In these accounts he referred to a post operated by Henry B "Scoots" Miller at the foot of Coon Slough. Miller became Myrick's partner later that year at Prairie La Crosse. Two trading posts are also documented on the G.L.O. survey plats for the area at the foot of Coon Slough, though these were probably not the same as Miller's. One post is shown on the

Wisconsin mainland (NW $\frac{1}{4}$, SW $\frac{1}{4}$, SW $\frac{1}{4}$, Sec. 21, T13N R7W) just above the present town of Genoa (Brown 1846). The second post is shown nearly opposite the main channel on the Minnesota shore (NE $\frac{1}{4}$, NE $\frac{1}{4}$, Sec. 6 T101N R3W) on what is floodplain (Trygg 1964; Figure 2). These posts were located several miles down river of the project area. They were, however, strategically situated at the point where Raft Channel and Coon Slough merge, thus providing control over fur trade traffic along the river and as convenient points to provide wood fuel for steamboats in the summer months. Farther upstream in pool 8, accounts refer to a post opposite the mouth of the Root River operated by Francois La Bathe in the late 1830's-early 1840's. La Bathe is known to have operated both trading posts and woodyards ("Chantiers") along this portion of the upper Mississippi River during that period (Boszhardt 1989b).

As noted earlier, though the main ("Raft") channel flowed west of the Island 120, the deeper swifter current of Coon Slough to the east was preferred by steamboats. However, as Coon Slough was more crooked than Raft Channel, this led to several recorded steamboat wrecks. These include the wreck of the Lady Franklin at the foot of Coon Slough in 1856 (Merrick 1987:278) and of the Northern Light at the first bend below the bend of Coon Slough in April of 1866 (Merrick 1987:103, 283; Peterson 1968:479). The description of the location of the wreck of the Northern Light as of the first bend below the bend of Coon Slough could correspond with the lower (southeast-most) proposed barrier islands; however, Merrick (1987:103) described the wreck as having occurred at the sharp bend in Coon Slough which probably referred to a bend lower down Coon Slough than the project area. Merrick also states that Northern Light was wrecked in the fall, but Peterson (1968:479) states that it occurred in April. Both refer to the wreck being caused by ice.

Island 120

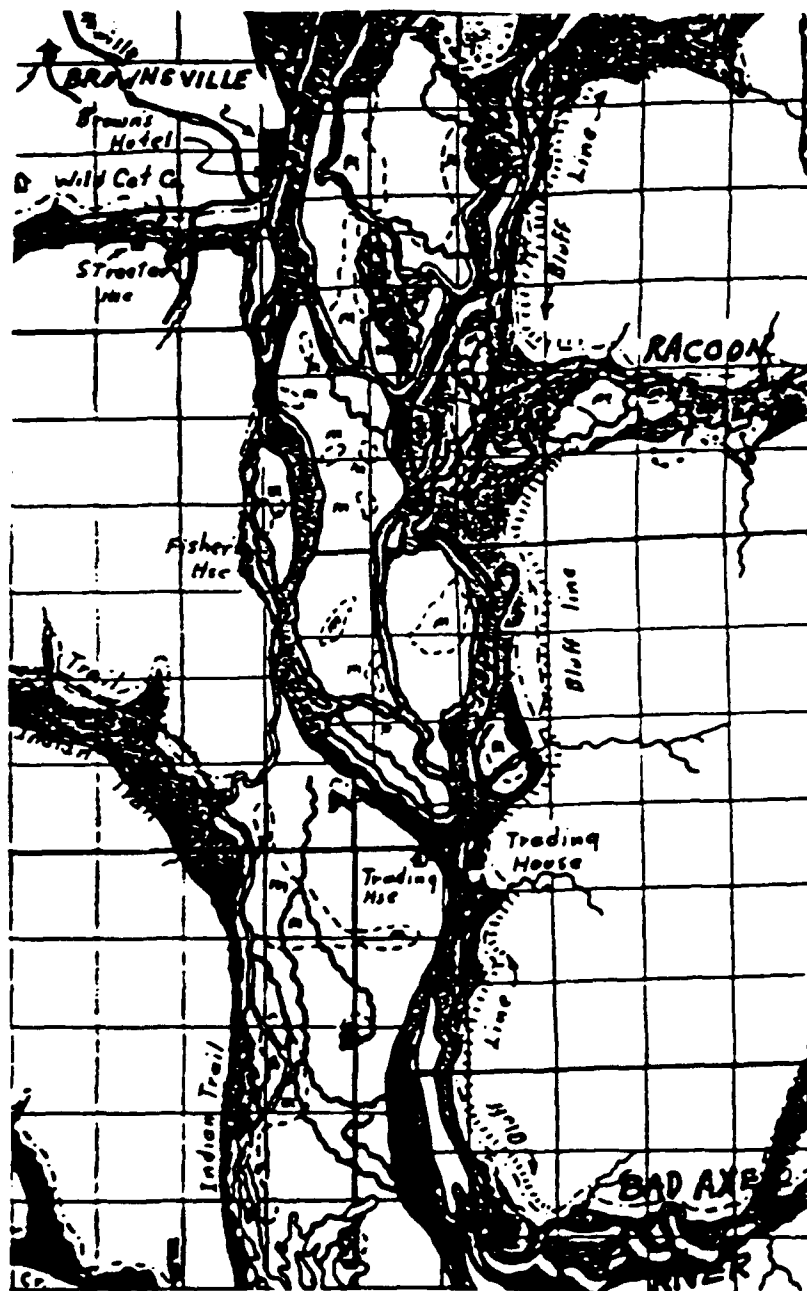


Figure 2: Portion of Mississippi River encompassing project area (Island 120) from Trygg's (1964) composite maps of General Land Office Survey records. Note trading posts where Raft Channel and Coon Slough re-merge into the main channel at the foot of Island 120.

No wrecks were found to be recorded for Raft Channel along the west side of Island 120 and other than maps, no reference to Raft Channel was located in the documents reviewed. It seems logical though that this channel, being straighter than Coon Slough, was preferred by the large lumber rafts after about 1850. In fact, several saw mills are recorded in 1878 at Brownsville just upstream from Island 120, including one at the head of the island immediately below the town (Anonymous 1878). The first wreck of the steamboat lumber raft Bella Mac occurred in April 1882 two miles above Brownsville as it was returning to La Crosse for a load of lumber. This wreck was caused by a boiler explosion with a loss of nine lives. The stricken vessel drifted two miles down river where it became stranded on the Wisconsin shore (probably just above Island 120). The Bella Mac was salvaged and rebuilt later that summer. No other record of historic sites on Island 120 or adjacent floodplain landforms was located.

Surface collection of exposed shorelines found a short concrete and rock wall at the very northern tip of Island 120. The wall is now actually separated from the island by a few meters and lies slumped due to erosion. From this foundation to the southeast for ca. 40 meters were scattered late historic artifacts including round nails and round spikes. These suggest the possibility that a small building was located at this site; however, no structures were found to be depicted on any historic maps of the area including the detailed 1929-31 Brown surveys. The index to 1933-34 pre-lock and dam flowage charts shows a trail leading from this area of Island 120 down along the west shore, that may be related to these materials (Figure 3).

In addition, other artifacts recovered along the northeast tip of Island 120 include a chain and padlock (stamped on one side with "XLNT" and on the other with), a boat plug, a 1937-38 copper Wisconsin trappers tag, and a

Island 120

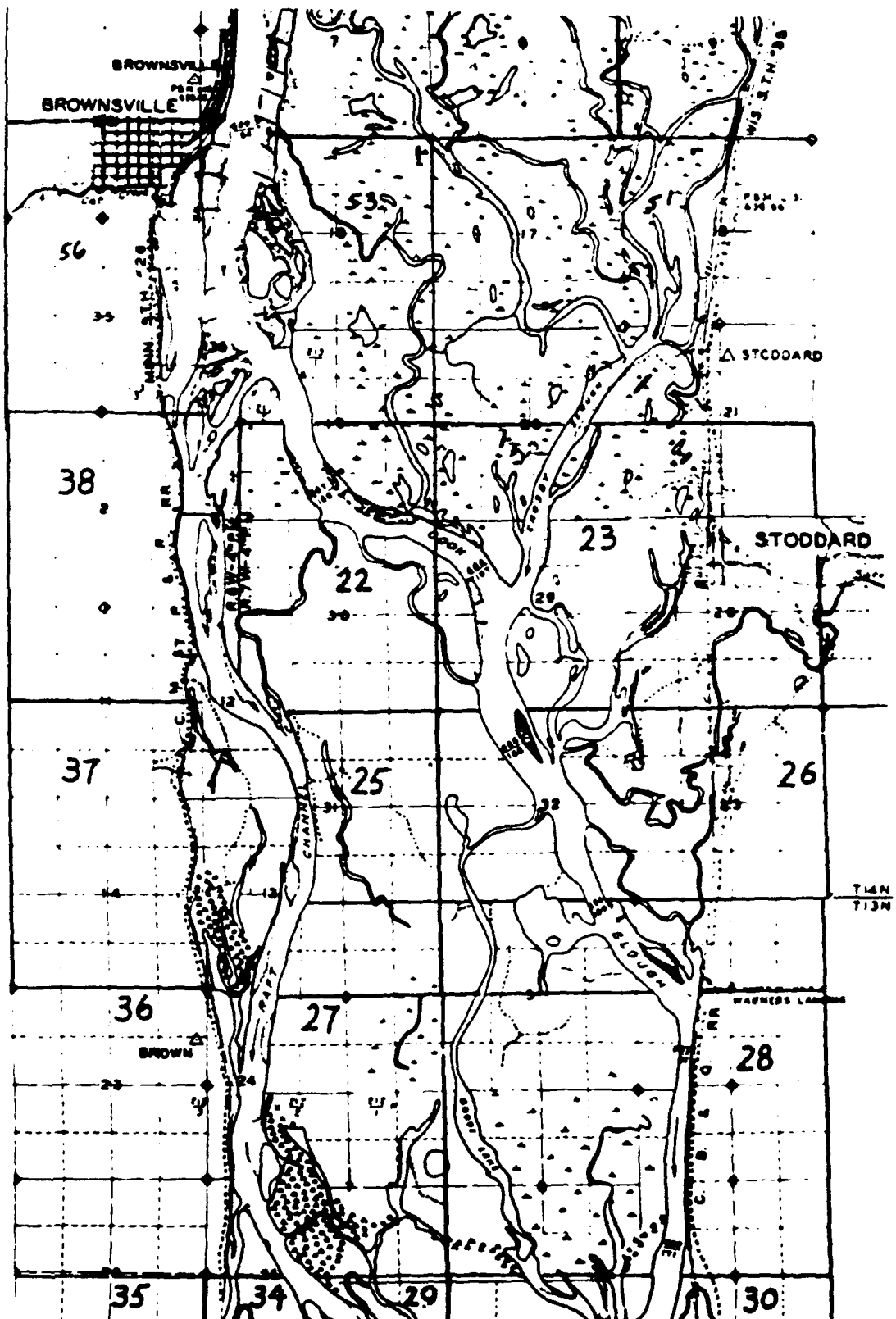


Figure 3: Location of Project area as depicted on Index sheet for pre-lock and dam flowage maps (1933-34). Note trail crossing north end of Island 120.

railroad spike. Other than the railroad spike, these materials probably reflect sporadic visits to this site by boaters, trappers, hunters, etc. The presence of a railroad spike is anomalous. It may have been associated with installment of rock revetment along this shore in the late 1800's. This revetment is shown as having been in place on the 1894 Mississippi River Commission Chart (No. 171), and pencilled-in notations on 1877 Navigation Improvement maps indicate the revetment was placed here in the 1880's. Small sections of old revetment were observed in places along this shore, generally several meters out from the present shore.

In addition, the pedestrian survey along these shores observed numerous large stumps several meters out into the water suggesting extensive erosion since the construction of the lock and dam as well as evidence of historic sediment alluviation. The observed stumps were of large trees and all shered-off at the same level (Figure 4), presumably reflecting clearing practices in advance of innundation of pool 8. In fact, the remnants of Island 120 that are being considered for the barrier islands now support very few trees (the oldest appear only 10-15 years old) and are mostly grass covered due in part to the artificially raised water table.

Evidence for historic alluviation was observed in exposed bank profiles along the extreme northeast end of Island 120 and in several soil probes. The highest exposed banks at the time of the survey stood 1.4 meters above the water level. Sediments exposed in these banks consisted of banded light and dark medium-fine sand suggesting recent flood aggradation. In a few places, solid silt benches were exposed at the water level. These likely represent the original (pre-1850) island matrix. Coring farther down the shore of Island 120 found only medium-fine sand to the water table suggesting the original island surface



Figure 4: Two views of project area at time of survey. Top shows north tip of Island 120. Concrete and Rock wall is just left of defoliated tree trunk. Bottom shows large stumps of old trees in water out from shore. These presumably represent original vegetation removed in advance of pooling above lock and dam 8 in the late 1930's.

is entirely submerged at these places.

In addition, on the southeastern most islands being considered for the barrier island, the survey found rock scattered over their grassy surfaces. This undoubtedly represents ice movement of the old rock revetment across the island surface. Ice-formed ramparts were observed at several places along these shorelines. In front of these small island remnants numerous large old stumps also mark the original island shore several meters into the water.

Summary and Recommendations

A Phase I archaeological survey of proposed barrier island at the lower end of navigation pool 8 of the upper Mississippi River was undertaken in the summer of 1989. The survey consisted of archival review and field work. The records review found no indication of historic sites at the proposed barrier islands with the exception of a trail terminating at the extreme northeast end of Island No. 120 in 1933-1934. The archival study did reveal a number of historic sites in the adjacent portions of the upper Mississippi River including 1840's-50's fur trading posts and two steamboat wrecks in Coon Slough which forms the east side of the project area.

The field survey consisted of pedestrian shoreline survey under ideal conditions, complimented by soil probes at selected locations. The field efforts identified the remnant of an historic structure in the form of a short concrete and rock wall at the extreme northern tip of Island 120. Immediately to the southeast of this wall, and extending for ca. 40 meters is a debris field of miscellaneous late historic artifacts, some of which may be related to the wall/structure. Others reflect occasional visits to this island by hunters, fisherman, and trappers. The only other historic remains encountered during the field survey was remnants of rock revetment that had been installed in the

1880's.

Sedimentary evidence obtained through inspection of eroding banks and soil cores reveal that the highest portion of the proposed barrier island consists of ca. 1.4 meters of post-settlement alluvium. A silt bench, probably representing pre-1850 island matrix, was exposed in places along Island 120 at the water level. The survey also found evidence of dramatic loss of floodplain land since the construction of lock and dam No. 8 in the 1930's. This evidence consisted of exposed vertical banks at the upper end of Island 120, stumps of large trees in the water several meters out from the current shore, and ice-transported rock deposited across the surface of the lower island.

In conclusion, it is clear that much of the original island formation at the proposed barrier island has been either lost to erosion or innundated from the pooling above lock and dam 8. While these islands continue to erode, the survey also found that they had been subjected to historic accretion since EuroAmerican clearing of the land was initiated upstream about AD 1850. In light of the strategic location of the proposed pool 8 barrier islands at a point where the main channel of the Mississippi River divides, and given documented prehistoric and early historic utilization of the upper Mississippi River floodplain by numerous successive cultures, it seems likely that archaeological deposits exist on the proposed islands, either buried by post-settlement alluvium and/or now beneath the artificially raised water levels of pool 8. However, no evidence for potentially significant cultural resources were located during this Phase I survey. Furthermore, the proposed action of adding dredged material to build the barrier island over the core of the remnant natural islands seems more of a long-term preservation impact rather than destructive. Consequently, no recommendations for additional cultural resources investigations are offered as regards these proposed barrier islands.

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SCOPE OF WORK
PHASE I CULTURAL RESOURCES INVESTIGATION
BARRIER ISLAND RESTORATION PROJECT,
POOL 8, MISSISSIPPI RIVER

1.00 INTRODUCTION

1.01 The Contractor will undertake a Phase I cultural resources investigation of a series of islands along the southern main channel and the Stoddard Bay area in Wisconsin and a potential borrow area in the lowlands of the Wildcat Landing area just south of Brownsville, Minnesota.

1.02 This investigation partially fulfills the obligations of the Corps of Engineers (Corps) regarding cultural resources, as set forth in the National Historic Preservation Act of 1966 (Public Law [PL] 89-665), as amended; the National Environmental Policy Act of 1969 (PL 91-190); Executive Order (EO) 11593 for the "Protection and Enhancement of the Cultural Environment" (Federal Register, May 13, 1971); the Archeological and Historical Preservation Act of 1974 (PL 93-291); the Advisory Council on Historic Preservation "Regulations for the Protection of Historic and Cultural Properties" (36 CFR, Part 800); and the applicable Corps regulations (ER 1105-2-50).

1.03 The laws listed above establish the importance of Federal leadership, through the various responsible agencies, in locating and preserving cultural resources within project areas. Specific steps to comply with these laws, particularly as directed in PL 93-291 and EO 11593, are being taken by the Corps "... to assure that Federal plans and programs contribute to the preservation and enhancement of non-federally owned sites, structures, and objects of historical, architectural, or archeological significance." A part of that responsibility is to locate, inventory, and nominate to the Secretary of the Interior all such sites in the project area that appear to qualify for listing on the National Register of Historic Places.

1.04 EO 11593 and the 1980 amendments to the National Historic Preservation Act further direct Federal agencies "... to assure that any federally owned property that might qualify for nomination is not inadvertently transferred, sold, demolished or substantially altered." In addition, the Corps is directed to administer its policies, plans, and programs so that federally and non-federally owned sites, structures, and objects of historical, architectural, or archeological significance are preserved and maintained for the inspiration and benefit of the people.

1.05 This cultural resources investigation will serve several functions. The report will be a planning tool to aid the Corps in meeting its obligations to preserve and protect our cultural heritage. It will be a comprehensive, scholarly document that not only fulfills federally mandated legal requirements but also

serves as a scientific reference for future professional studies. It will identify resources that may require additional investigations and that may have potential for public-use development. Thus, the report must be analytical, not just descriptive.

2.00 PROJECT DESCRIPTION

2.01 The Pool 8 Habitat Restoration EMP Project is located in lower Pool 8 between river miles 684 and 688. (See enclosed maps.) After inundation during 1939, a narrow rim of islands remained along the southern main channel border and in the Stoddard Bay area. Some of these islands are the remnants of a large mid-channel island that existed prior to inundation (see enclosed historic map.)

2.02 The project area presently consists of a number of barrier islands, shallow marsh habitat, and deeper open areas, which are bordered by three major flow channels and the main river. Vegetation consists of lowland hardwood forest, willow and other shrubs, arrowhead, bulrush, pondweed, coontails, and wild celery.

2.03 A dramatic decrease in the project area island land mass has occurred since inundation and has accelerated in the past ten years. The islands are composed of sand, and once the protective cover of vegetation is removed by wave action, erosion appears to proceed rapidly. The most stable islands in the project area appear to be those that have been created or raised in elevation by dredged material deposition. Turtle Island, and the islands at the head of Raft Channel and at River Mile 685 are example.

2.04 The proposed project is to stabilize and construct islands in the lake-like portion of Pool 8 to reduce wind and wave action.

The islands would be constructed of dredged material and protected with riprap and other means to prevent erosion. It is anticipated that the project would be constructed in phases because of its large size. The first phase is slated to begin in June, 1989. So this survey must be completed by that date.

2.05 The areas to be surveyed are marked in yellow on the enclosed xerox of a USGS quad for Brownsville, Minnesota. The survey should be conducted in two phases. The first phase will consist of cutbank/eroding bank examination along the affected islands followed by soil coring to determine the depth of the original island surface and/or the discernible depth of alluvium or dredge material fill and the presence/absence of buried sites. The second phase will only take place if sites are located in phase 1 and will consist of the testing of those sites to determine their limits and state of disturbance.

3.00 DEFINITIONS

3.01 Cultural Resources include any building, site, district,

structure, object, data, or other material relating to the history, architecture, archeology, or culture of an area.

3.02 A Phase I Cultural Resources Survey is an intensive, on-the-ground study of an area sufficient to determine the number and extent of the resources present and their relationships to project features. It will provide (1) data adequate to assess the general nature of the sites present; (2) recommendations for additional testing of those resources that may provide important cultural and scientific information; and (3) detailed time and cost estimates for Phase II testing.

3.03 Phase II Testing is the intensive testing of a resource that may provide important cultural or scientific information. This testing will result in (1) information adequate to determine whether the resource is eligible for inclusion on the National Register of Historic Places; (2) a Phase III mitigation plan for any eligible resources that will undergo a direct or indirect impact; and (3) detailed time and cost estimates for the mitigation.

3.04 Phase III Mitigation is the mitigation of the direct or indirect impacts of construction upon eligible sites through the systematic removal of data. It typically includes the excavation of either complete cultural deposits or a systematic sample of them and the thorough analysis and interpretation of the data recovered. The excavation, analysis, and interpretation methods must be adequate to address the important research questions based on which the resource was determined eligible. In addition, because the mitigation process destroys the resource, data should be recovered that may be needed to address future research questions.

4.00 SURVEY REQUIREMENTS

4.01 The Contractor will conduct a Phase I cultural resources investigation on selected islands and a potential borrow site in Lower Pool 8, Mississippi River, in accordance with Sections 2.01 to 2.04 and 3.02 above.

4.02 The Contractor's work will be subject to the supervision, review, and approval of the Contracting Officer's representative.

4.03 The Contractor will employ a systematic, interdisciplinary approach in conducting the study, using techniques and methods that represent the current state of knowledge for the appropriate disciplines. The Contractor will provide specialized knowledge and skills as needed, including expertise in archeology and other social and natural sciences.

4.04 The Contractor will provide all materials and equipment necessary to perform the required services expeditiously.

4.05 The Contractor's survey will be an on-the-ground examination sufficient to determine the number and extent of any cultural resources present, including standing structures as well

as prehistoric and historic archeological sites.

4.06 The Contractor's survey will include surface inspection in areas where surface visibility is adequate to reveal any cultural materials that are present and subsurface testing in all areas where surface visibility is inadequate. Subsurface investigation will include shovel testing, coring, soil borings, cut bank profiling, or other appropriate methods. If the field methods used vary from those that are required, they must be described and justified in the Contractor's report.

4.07 The survey interval required for subsurface testing is 15 meters (50 feet). However, this interval may vary depending upon field conditions, site density, or size. If a larger interval is used, this decision must be justified in the Contractor's report.

4.08 The Contractor will screen all subsurface tests through 1/4-inch mesh hardware cloth.

4.09 The Contractor will recommend any Phase II testing measures that are warranted, including time and cost estimates.

4.10 If it becomes necessary in the performance of the work and services, the Contractor will, at no cost to the Government, secure the rights of ingress and egress on properties not owned or controlled by the Government. The Contractor will secure the consent of the owner, or the owner's representative or agent, in writing prior to effecting entry on such property. If requested, a letter of introduction signed by the District Engineer can be provided to explain the project purposes and request the cooperation of landowners. Where a landowner denies permission for survey, the Contractor must immediately notify the Contracting Officer's representative and must describe the extent of the property to be excluded from the survey.

4.11 The Contractor will return all surveyed areas as closely as practical to presurvey conditions.

4.12 The Contractor must keep standard records that include field notes and maps, site survey forms, subsurface testing forms, and photographs.

4.13 State site forms will be prepared for all sites discovered during the survey, and records on previously reported sites will be updated if new information is obtained. Data should be included on the present condition of each site and on the contents and locations of any collections from it. The Contractor will also submit all site forms and updates to the appropriate State agency.

4.14 Cultural materials and associated records from the study should be curated at an institution that can ensure their preservation and make them available for research and public view. Curation should be within the State and as close as possible to the project area. The Contractor will be responsible for making curatorial arrangements, coordinating them with the appropriate officials of the states of Minnesota and Wisconsin ,

and obtaining approval from the Contracting Officer's representative.

5.00 GENERAL REPORT REQUIREMENTS

5.01 The Contractor will submit the following documents, described in this section and Section 6.00: a field report, a draft contract report(if necessary), and a final contract report.

5.02 The Contractor's field report will be a brief summary of the nature, extent, and results of the field work conducted. It may be in the form of a telephone call followed by a letter to the Contracting Officer's representative.

5.03 The draft contract report will detail the approach, methods, and results of the investigation, and make recommendations for further work. It will be submitted to the Contracting Officer's representative, who will review it and forward it to other appropriate agencies for review. Comments will be returned to the Contractor, who will make the necessary revisions and submit the final contract report.

5.04 The Contractor's draft and final reports will include the following sections, as appropriate to the study. The length of each section depends on the level of detail required of the study and the amount of information available. The reports should be as concise as possible, yet provide all the information needed for evaluating and managing the project and for future reference.

a. Title page: The title page will provide the following information: the type of study; the types of cultural resources assessed (archeological, historical, and architectural); the project name and location (county and State); the date of the report; the Contractor's name; the contract number; the name of the author(s) and/or Principal Investigator; the signature of the Principal Investigator; and the agency for which the report is being prepared.

b. Management summary: This section will provide a concise summary of the study, containing all the information needed for management of the project. This information will include the reason the work was undertaken, who the sponsor was, a brief summary of the scope of work and budget, a summary of the field work and lab analysis, the limitations of the study, the results, the significance of the results, recommendations for further work, and the repository for records and artifacts.

c. Table of contents

d. List of figures

e. List of plates

f. Introduction: This section will identify the sponsors (Corps of Engineers) and their reason for the study and present

an overview of the study with each site located on USGS quad maps. It will also define the location and boundaries of the study area (using regional and area-specific maps); define the study area within its regional cultural and environmental context; reference the scope of work; identify the institution that did the work and the number of people and person-days/hours involved; give the dates when the various phases of the work were completed; identify the repository of records and artifacts; and provide a brief outline of the report and an overview of its major goals.

g. Previous archeological and historical studies: This section will briefly summarize and evaluate previous archeological and historical research in the study area including the researchers, dates, extent, adequacy, and results of past work and any cultural/behavioral inferences derived from it.

h. Environmental background: This section will briefly describe the current and prehistoric environment of the study area, including its geology, vegetation, fauna, climate, topography, physiography, and soils. The relationship of the environmental setting to the area's prehistory and history should be stressed. The level of detail in this section will be commensurate with that of the other report sections.

i. Theoretical and methodological overview: This section will state the goals of the sponsor and the researcher, the theoretical and methodological orientation of the study, and the research strategies that were applied to achieve the goals.

j. Field methods: This section will describe all field methods, techniques, and strategies and the reasons for using them. It will also describe field conditions, relevant topographic/physiographic features, vegetation conditions, soil types, stratigraphy, general survey results, and the reasons for eliminating any uninvestigated areas.

k. Laboratory and analysis methods: This section will explain the laboratory methods employed and the reasons for selecting them. It will reference accession or catalog numbers of any collections, photographs, or field notes obtained during the study and state where these materials are permanently housed. It will also describe and justify the specific analytical methods used, including any quantitative analysis of the data, and discuss limitations or problems with the analysis.

l. Results: This section will describe all cultural resources found during the study. It will minimally include each site's description (including size, depth, and artifact density); its location (USGS quad, legal description, elevation, and address if appropriate); the amounts and types of remains recovered; its environmental setting; its current condition; the direct and indirect impacts of the project upon it; and any additional interpretations (e.g., site type, cultural components, and human behavioral information).

m. Evaluation and conclusions: This section will formulate

conclusions about the location, size, condition, and distribution of the resources found; their relationships to other sites in the area; and their possible importance in terms of local and regional prehistory, protohistory, and history. It will also relate the results of the study to the stated goals; identify any changes in the goals; assess the reliability of the analysis; and discuss the potential of and goals for future research.

n. Recommendations: This section will recommend any further work deemed necessary. It will summarize Phase II evaluation measures that would be needed to determine whether specific resources are eligible for the National Register of Historic Places, as well as a time and cost estimate for this work. It will also describe any areas that were inaccessible, and recommend future treatment of them. If the Contractor concludes that no further work is needed at any site, the evidence and reasoning supporting this recommendation will be presented.

o. References: This section will provide bibliographic references (in American Antiquity format) for every publication cited in the report. References not cited in the report may be listed in a separate "Additional References" section.

p. Appendix: This section will include the Scope of Work, resumes of project personnel, copies of all correspondence relating to the study, and any other pertinent information referenced in the text. It will also include State site forms for all sites identified during the survey, including find spots and previously recorded sites.

q. Figures: The location of all sites and other features discussed in the text will be shown on a legibly photocopied USGS map bound into the report. In addition, the locations of all subsurface tests will be indicated on maps of appropriate scale and detail and keyed to the subsurface testing forms included with the field notes. Other recommended figures are regional and project maps, photographs of the project area, and line drawings or photographs of diagnostic artifacts, structures, and unit or feature profiles.

r. Tables: The report should include tables of cultural materials by site and provenience (for example, excavation unit and level). Information that may require more detailed tabulation includes lithic tool types and raw materials, ceramic attributes, and floral and faunal remains.

5.05 The Contractor will submit to the Contracting Officer's representative the negatives for all photographs that appear in the final report.

6.00 REPORT FORMATS

6.01 There are no specific format requirements for the field report. A letter report is usually sufficient.

6.02 Formats for both the draft and final contract reports are as follows:

a. The Contractor will present information in whatever textual, tabular, graphic forms are most effective for communicating it.

b. The draft and final reports will be divided into easily discernible chapters, with appropriate page separations and headings.

c. The report text will be typed, single-spaced (the draft report should be space-and-one-half or double-spaced), on good quality bond paper, 8.5 inches by 11.0 inches, with 1.5-inch binding and bottom margins and 1-inch top and outer margins, and may be printed on both sides of the paper. All pages will be numbered consecutively, including plates, figures, tables, and appendixes.

d. All illustrations must be clear, legible, self-explanatory, and of sufficiently high quality to be reproduced easily by standard xerographic equipment, and will have margins as defined above. All maps must be labeled with a caption/description, a north arrow, a scale bar, township and range, map size and dates, and map source (e.g., the USGS quad name or published source). All photographs or drawings should be clear, distinct prints or copies with captions and a bar scale.

7.00 MATERIALS PROVIDED

7.01 The Contracting Officer's representative will furnish the Contractor with access to any publications, records, maps, or photographs that are on file at the St. Paul District headquarters.

8.00 SUBMITTALS

8.01 The field work completion date for this project will be June 2, 1989. The Contractor will contact the Contracting Officer's representative at least 7 days before the field work begins to discuss the work schedule and plans.

8.02 The Contractor will submit reports according to the following schedules:

a. Field report: Because of the limited time before construction begins, the field report may initially be a phone call to the Environmental Resources section of the St. Paul District, giving the results of the survey. A letter may follow in seven days. The phase 1 results should be reported as soon as phase 1 of the survey is completed.

b. Draft contract report: Seven copies of the draft

contract report will be submitted no later than 30 days after completion of the field work. The draft contract report will be reviewed by the Corps of Engineers, the State Historic Preservation Officer, the State Archeologist, and the National Park Service. The draft contract report will be submitted according to the report and contract specifications outlined in this scope of work.

c. Final contract report: The original and 15 copies of the final report will be submitted 60 days after the Contractor receives the Corps of Engineers comments on the draft report. The final report will incorporate all the comments made on the draft report.

9.00 CONDITIONS

9.01 Failure of the Contractor to fulfill the requirements of this Scope of Work will result in rejection of the Contractor's report and/or termination of the contract.

9.02 Neither the Contractor nor his representative shall release any sketch, photograph, report, or other materials of any nature obtained or prepared under the contract without specific written approval of the Contracting Officer's representative prior to the acceptance of the final report by the Government. Dissemination of survey results through papers at professional meetings and publication in professional journals is encouraged. However, professional discretion should be used in releasing information on site locations where publication could result in damage to cultural resources.

9.03 All materials, documents, collections, notes, forms, maps, etc., that have been produced or acquired in any manner for use in the completion of this contract shall be made available to the Contracting Officer's representative upon request.

9.04 Principal investigators will be responsible for the validity of material presented in their reports. In the event of controversy or court challenge, the principal investigator(s) will be placed under separate contract to testify on behalf of the Government in support of the findings presented in their reports.

9.05 The Contractor will be responsible for adhering to all State laws and procedures regarding the treatment and disposition of human skeletal remains. Any human remains recovered will be treated with respect and will not be placed on public display.

42°30'

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40'

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35

7771 III NE
(BROWNSVILLE)

MISSISSIPPI

17

NORMAL POOL ELEVATION 631

UPPER MISSISSIPPI RIVER WILD LIFE AND FISH REFUGE

Mile
686

30

29

Boat
Ramp

Sew
Disp

28

Stoddard
(BM 659)

Sandpit

Cem

B

E

St Matthews
Cem

R

G

E

PROKCH

21

Stoddard

BM 649

16

BM 639

SCHOOL

SECTION

Radio
Towers

RD

BLUFFVIEW

15

Ridge

LANE

Radio Tower

WISSE

Stoddard

LANE

BURLINGTON

BM 641

BM 649

Mm



THE STATE HISTORICAL SOCIETY OF WISCONSIN

H. Nicholas Muller III, Director

816 State Street
Madison, Wisconsin 53706
608 262-3266

January 16, 1990

Mr. Robert J. Whiting
Chief, Environmental Resources Branch
Planning Division
St. Paul District, Corps of Engineers
1421 U.S. Post Office & Custom House
St. Paul, Minnesota 55101-1479

SHSW: 89-0494

RE: Barrier Island Restoration- Pool 8 Mississippi River

Dear Mr. Whiting:

We have reviewed the archeological report entitled, "A Phase I Survey of proposed Barrier Islands Navigation Pool 8 Upper Mississippi River" by Robert Boszhardt.

The survey procedures utilized were sufficiently thorough to justify the conclusion that there are no cultural resources eligible for inclusion on the National Register of Historic Places within the areas surveyed. Based on the results of this study, we understand the possibility for the identification of both buried sites and inundated sites is high. This should be considered in any future undertakings.

This completes our review of this project, with this letter constituting our final comments. Should project plans be modified, please submit any changes for review. We look forward to receiving two copies of the final report.

Sincerely,

Jennifer L. Kolb
Archeologist
DIVISION OF HISTORIC PRESERVATION

JLK:jlk (2468N)

cc: Robert Boszhardt, MVAC
Dave Berwick, CORPS