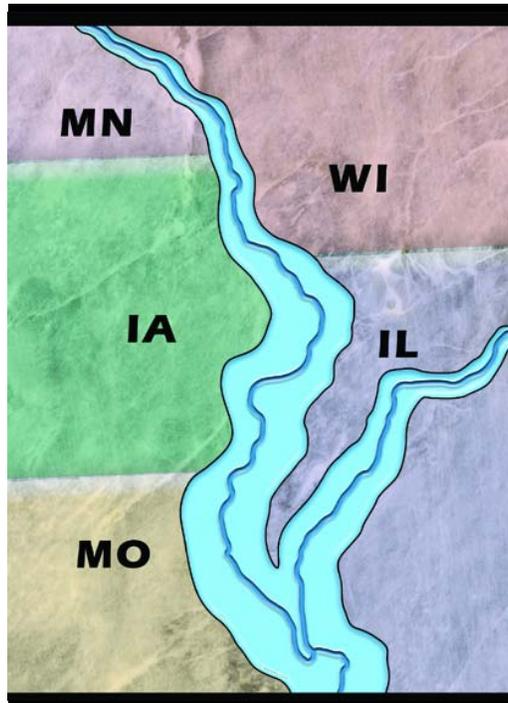


**UPPER MISSISSIPPI RIVER COMPREHENSIVE PLAN  
FOR SYSTEMIC FLOOD DAMAGE REDUCTION AND  
ASSOCIATED ENVIRONMENTAL SUSTAINABILITY**

**Draft**



**APPENDIX E**

**CULTURAL RESOURCES**

**Prepared by the  
U.S. Army Corps of Engineers  
Rock Island, St. Louis, and St. Paul Districts  
May 2006**



**UPPER MISSISSIPPI RIVER COMPREHENSIVE PLAN  
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**APPENDIX E**

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**CONTENTS**

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I. INTRODUCTION .....	E-1
II. CULTURAL OVERVIEW .....	E-1
A. Paleo-Indian Tradition (12,500-9,500 B.P.) .....	E-1
B. Archaic Tradition (9,500-2,400 B.P.) .....	E-2
C. Woodland Tradition (2,400-950 B.P.) .....	E-2
D. Mississippian Tradition (950-350 B.P.) .....	E-3
E. Oneota Tradition (950-350 B.P.) .....	E-3
F. Historic-Period Native Americans (1673-1832) .....	E-3
G. Historic Euro-American Settlement (1670s-1955) .....	E-4
III. DOCUMENTED RESOURCES .....	E-5
IV. SUMMARY TABLES .....	E-6
Table 1 NRHP Status of All Archeological Sites Identified in the UMR and IWW Navigation Zones .....	E-6
Table 2 Occurrence of Unknown Prehistoric, Paleo-Indian, and Archaic Components in UMR and IWW Navigation Zones .....	E-7
Table 3 Occurrence of Woodland, Mississippian, and Oneota Components in the UMR and IWW Navigation Zones .....	E-7
Table 4 Occurrence of Historic Period Components in the UMR and IWW Navigation Zones .....	E-7
Table 5 Occurrence of Submerged Historic Sites and Structures on the UMR and IWW as Identified Through Archival Research .....	E-8
Table 6 Observation of Archeological Site Frequency by LSA on the UMR MVR District .....	E-8
Table 7 IWW Archeological Site Frequency by Floodplain Landscape and Associated LSAs .....	E-9



# UPPER MISSISSIPPI RIVER COMPREHENSIVE PLAN FOR SYSTEMIC FLOOD DAMAGE REDUCTION AND ASSOCIATED ENVIRONMENTAL SUSTAINABILITY

## APPENDIX E

### CULTURAL RESOURCES

#### I. INTRODUCTION

The U.S. Army Corps of Engineers (the Corps) has historic properties management responsibilities on the Upper Mississippi River UMR and Illinois Waterway (IWW) as mandated by Sections 106 and 110 of the National Historic Preservation Act of 1966 as amended and its implementing regulations 36 CFR Part 800. Toward that end, the Corps has developed Historic Properties Management Plans (HPMPs) for both the IWW and the UMR. The HPMPs are comprehensive programs for the identification, evaluation, and preservation of cultural resources on federal property and on other lands that might be affected by project operations. In addition, research recently concluded in support of the Upper Mississippi River - Illinois Waterway System Navigation Study Integrated Feasibility Report and PEIS ("Navigation Study;" USACE 2004) summarized the extent of cultural resources management within the navigation zone on the UMR and IWW. The navigation zone is defined as those areas within the UMR and IWW main channel, island, and backwater corridor that extend landward one-quarter mile past the railroad grade or principal meander belt levee as shown on United States Geological Survey 7.5 minute quadrangle maps, regardless of ownership. The Navigation Study analysis also considered "bluff-to-bluff" cultural resources data as pertaining to ecosystem restoration measures. The present overview draws heavily from these HPMP and Navigation Study analyses.

#### II. CULTURAL OVERVIEW

This general discussion of cultural time periods and site types is based entirely on HPMP overviews. The following table identifies the cultural periods and associated date ranges used in this report. The data is general enough, however, to be applicable to the entire study area and provide an adequate background for the reader. The traditions follow standard nomenclature developed for the upper Midwest on the basis of diagnostic artifact and archeological site types. Each tradition listed is described in more detail in paragraphs A through G.

<b>TRADITION</b>	<b>DATE RANGE [(Years Before Present) (B.P.)]</b>
Paleo-Indian	12500-9500
Early Archaic	9500-8000
Middle Archaic	8000-4500
Late Archaic	4500-2400
Early Woodland	2400-2050
Middle Woodland	2150-1650
Late Woodland	1650-950
Mississippian	950-350
Oneota	950-350
Historic	350-Present

**A. Paleo-Indian Tradition (12,500-9,500 B.P.).** The earliest period during which strong evidence exists for prehistoric occupations in the American Midwest is the Paleo-Indian period. The period is characterized by small, scattered groups of people that moved across a tundra landscape. They hunted large game (mammoths) and collected wild plant foods during post glacial times. Paleo-Indian artifact assemblages include fluted Clovis and Folsom style projectile points as well as small endscrapers, graters or “spurred” flakes, hammerstones, pitted stones, bifacial knives, and other flake tools. Due to the low population density and nomadic lifestyle of Paleo-Indian groups, archaeological evidence for the tradition is extremely rare. Within the study area, evidence of Paleo-Indian occupations is represented primarily by surface finds of diagnostic fluted spear points on high river terraces.

Potential archeological site types from this time period include lithic scatters, kill sites, habitations, quarries, and rock shelters.

**B. Archaic Tradition (9,500-2,400 B.P.).** The three subdivisions of this period—Early, Middle, and Late Archaic—define the major cultural changes which occurred as their population increased, the climate became alternatively wet-dry-wet, and people began to stay in one place for longer periods of time. Most Early Archaic sites seem to represent low density, temporary encampments occurring in a variety of ecological settings. This pattern reflects a subsistence strategy of seasonal hunting and gathering of resources scattered across a number of different ecological zones. During the Middle Archaic, a noticeable shift occurred in the economic orientation toward forest and riverine resources. Almost all modern deciduous forest replaced the tundra environment in the Midwest by this time. Occupation of upland areas would have been limited to temporary resource procurement sites. By the Late Archaic, ecological conditions in the Midwest appear to have become stabilized to conditions similar to the historic era. Culturally, a trend toward sedentism begins to appear across much of the Midwest in the form of semi-permanent settlements and seasonal return to specific resource procurement locations. Dependence on plant foods and fish/mussels rises. Smaller game is sought more often than large game.

Projectile point styles change dramatically in size and shape. Ground stone tools (axes) begin to be made and formal burials reflect an increase in social interaction and belief in ritual. Other artifacts associated with Archaic occupations include a variety of polished and ground stone woodworking tools, including axes, adzes and wedges; plant processing equipment such as manos and metates; masses of fire-cracked rock used in pit-roasting and stone boiling; and other types of specialized artifacts such as drills, awls, needles and gouges. Grooved stone axes are somewhat diagnostic for the Middle and Late Archaic periods, shifting from a full-grooved form in the Middle Archaic to a three-quarter grooved form in the Late Archaic.

Typical archeological sites from this period include lithic scatters, habitations, quarries, cemeteries (Middle and Late Archaic), shell concentrations, petroglyphs, and rock shelters.

**C. Woodland Tradition (2,400-950 B.P.).** The Woodland Tradition is an archaeological complex of the eastern woodlands that is marked by the consistent manufacture of pottery, use of some cultigens, and the regular use of earthen mounds for burial of the dead. The tradition, which is divided into the Early, Middle and Late Woodland periods, developed within a climatic and vegetational setting relatively similar to recent times. These three subdivisions represent the origin of agriculture, an increase in the number of large villages located along rivers, and the extensive trade networks initiated during Archaic times that are expanded and elaborated. Exotic raw materials (such as shell, cherts, galena, copper, mica) were exchanged during this time as well as finished goods like

pots and jewelry. This time period also marks the invention of the bow and arrow. The “Hopewell” culture of Middle Woodland times affected most of the eastern United States. Many Native American groups adopted varying degrees of “Hopewell” culture, while also remaining distinct as geographical variants.

Archeological site types identified for this period include lithic scatters, shell concentrations, permanent villages, habitations, quarries, rock shelters, petroglyphs, and mortuaries (mounds, cemeteries, individual burials).

**D. Mississippian Tradition (950-350 B.P.).** The Mississippian cultures within the study area have been broadly categorized as Upper and Middle Mississippian on the basis of a variety of cultural markers. Middle Mississippian cultures in the Central Mississippi River valley and its major tributary valleys are characterized by numerous elements that reflect the achievement of new levels of social complexity. Large villages and towns with flat-topped temple mounds, such as the Cahokia site in the American Bottom, served as economic, political and ceremonial centers for surrounding homesteads and hamlets. Status differences within the society are indicated by variations in the treatment of burials. A diverse subsistence economy with increased reliance on the cultivation of maize sustained large sedentary communities.

The elaborate ceremonial objects that often accompanied the Middle Mississippian elite to the grave are rare at Upper Mississippian sites and large temple mounds are absent. In addition, Upper Mississippian hunter-farmers relied less on cultivated plants than did Middle Mississippians. Upper Mississippians were more mobile and were prone to moving whole villages to take advantage of seasonally available wild food resources. Those cultural markers which show an affinity between Upper and Middle Mississippian cultures consist primarily of small, portable artifacts that were used daily in most households. Artifacts diagnostic of both the Middle and Upper Mississippian cultures include distinctive shell-tempered pottery and small triangular arrow points with side-notches.

Recorded archeological site types dating to the Mississippian period include lithic scatters, shell concentrations, permanent villages, habitations, quarries, rock shelters, petroglyphs, pictographs, cemeteries, and mounds.

**E. Oneota Tradition (950-350 B.P.).** The Oneota tradition consisted of post-Woodland/Upper Mississippian groups living in the Upper Midwest from about 950 B.P. until the historic period. The Oneota were hunters, gatherers and cultivators whose tradition is recognized by diagnostic shell-tempered ceramic forms and a flake tool lithic technology. Artifacts diagnostic of the Oneota tradition have been identified throughout the Upper Midwest and extending northward into Canada. Some early historic archeological sites in Iowa have included Oneota tradition artifacts with European trade goods and have been identified as affiliated with the Otoe, Ioway, and Missouri tribes.

Documented archeological site types attributed to the Oneota period include lithic scatters, isolated houses, habitations, hamlets, rock shelters, rock art sites, and cemeteries.

**F. Historic-Period Native Americans (1673-1832).** Prior to European contact, Native Americans had lived in the study area for more than 10,000 years and through several successive cultural traditions. In post-contact times, the study area formed parts of the tribal estates of the Dakota Sioux, Illiniwek, Ioway-Oto, Sauk, and Fox tribes. Each of these tribal entities was divided into subtribes or bands which occupied recognized territories. Among the concentrations of Native

Americans along the Mississippi River and its tributary streams, the most influential in the early post-contact period were the Mdewakanton Dakota Sioux in the southern third of Minnesota and particularly along the Mississippi and Minnesota rivers and the Ioway-Oto and Fox-Sauk villages clustered near the mouths of the Wisconsin, Wapsipinicon, Lower Iowa, Rock, and Des Moines rivers during the 18<sup>th</sup> and early 19<sup>th</sup> centuries. No reservation lands remained within the alluvial valley below Prairie du Chien after the Winnebago removal from the Neutral Ground in 1848. Tribes that historically lived near the present day IWW spoke languages of the Algonquian family and included the Illini, Miami, Kickapoo, Mascouten, and Potawatomi.

Potential archeological site types associated with post-contact Native American groups include small campsites used by hunting and foraging parties, fur-trade related sites, habitations, galena mining and smelting pits, cemeteries, petroglyphs, pictographs, summer villages, and ceremonial sites.

**G. Historic Euro-American Settlement (1670s-1955).** In 1673 the Jesuit missionary Pere Jacques Marquette and the trader Louis Jolliet made their way southwest from Green Bay, transited the Fox-Wisconsin waterway, and carried out a reconnaissance of the Mississippi River as far south as the Arkansas River, before returning to Lake Michigan via the Illinois River and Chicago portage. They were the first Europeans known to have visited the Upper Mississippi and Illinois rivers. From the date of the Marquette and Jolliet expedition until the dispossession of the Native Americans following the Black Hawk War in 1832 and the U.S.-Dakota Conflict of 1862, the study area was considered a borderland region where French, Spanish, British, United States, and Native American interests converged. Initially the fur trade was pivotal to expansion into the area. Settlements were established at strategic locations and surveys were conducted in order to map the river channels primarily for navigation.

HPMPs for the UMR and IWW have identified historic contexts by which to evaluate early historical sites in the Mississippi Valley Division, Rock Island District (MVR). These contexts are applicable to the study area as a whole and include Exploration and Fur Trade, Early American Settlement, River Towns, Agriculture and Rural Lifeways, Industry and Commerce, Transportation, and Recreation and Conservation. Known and potential Euro-American archeological properties fall into several broad categories: agricultural sites, rural non-farm sites, urban sites, commercial-industrial sites, military sites, and transportation sites. The most common site type occurring in the study area is the farmstead in various forms. Although little analyzed as a significant cultural resource, historic farmstead sites document regional agricultural history and contain data of potential value in answering questions about local patterns of settlement and development within the floodplain of the UMR and IWW. Other site types with high research potential include fur trade posts, shipwrecks (including small craft), mills, steamboat landings, trails, and abandoned townsites. Archeological sites of potential importance to communities along the river include the locations of important historical events (e.g., campsites occupied by explorers, temporary military encampments, quasi-military conflicts, historic buildings destroyed by floods or fires); non-farm rural sites (e.g., schools, churches, campgrounds); clamming and fishing camps; and historic cemeteries. Sites associated with the construction of railroads, bridges, and navigation improvements are also likely to occur. Above-ground cultural resources are also present within the study area, including industrial and transportation structures (e.g., locks, dams, canals, levees, kilns, millraces and millponds, railroads, surface roads, monuments, and bridges).

### III. DOCUMENTED RESOURCES

This cultural analysis relied on geographic information systems (GIS) queries of HPMP and landform sediment assemblage (LSA) datasets developed and maintained by the Corps and on archeological site and survey queries of datasets developed and maintained by the States of Iowa, Illinois, Wisconsin, and Minnesota. MVR funded some GIS archeological site and survey data development on the UMR floodplain within Missouri in the early 1990s, but that data is limited to the MVR district. There are currently efforts by the State of Missouri to digitize archeological site and survey locations on the UMR within the Mississippi Valley Division, St. Louis District (MVS), but that data was not available for this analysis. In addition, the Minnesota data is limited to site location data only. Minnesota archeological survey data was not available for this analysis. Tables presenting the referenced data are included at the end of this chapter.

There are over 7,000 previously recorded archeological sites in the study area. Of that total, approximately 30 percent have been included in HPMPs prepared by the Corps for its operational projects on the UMR and IWW. There are a total of 1,257 recorded archeological sites on UMR lands and 785 recorded historic properties on IWW lands. On the UMR, 104 sites (8.3 percent) have been determined eligible for inclusion in the National Register of Historic Places (NRHP), 1,011 sites (80.4 percent) have yet to have their NRHP eligibility determined, and 142 sites (11.3 percent) have been determined ineligible for inclusion in the NRHP (table 1). On the IWW, 21 sites (2.7 percent) have been listed on the NRHP, 80 sites (10.2 percent) have been determined eligible for inclusion in the NRHP, 379 sites (48.2 percent) have yet to have their NRHP eligibility determined, and 305 sites (38.8 percent) have been determined ineligible for inclusion in the NRHP (table 1).

The record for prehistoric cultural components is consistent across the UMR and the IWW (tables 2 and 3). The earliest components, Paleo-Indian and Early Archaic, are the rarest representing just 0.2 percent (n=7) and 0.3 percent (n=10) respectively. This is likely due to the limited representation of Late Woodfordian and Early Holocene landforms within the HPMP subset of the study area. Middle Archaic and Late Archaic period sites are somewhat more common, 1.1 percent (n=30) and 2.5 percent (n=72) respectively, while Woodland period sites are by far the most common component at 44 percent (n=1,224). The dramatic increase is thought to represent both a general population increase during the Woodland period as well as perhaps an under representation of older sites due to alluvial burial. There is a rather significant decrease in Mississippian and Oneota components (5.7 percent, n=163 and 2.5 percent, n=74) following the Woodland period and may reflect a preference for settlement on landforms outside of the HPMP boundaries. Finally, non-diagnostic prehistoric components, that is archeological sites that lack diagnostic artifacts, represent 20.3 percent (n=584) of the components identified within the HPMP portion of the study area.

Historic period components identified in the HPMP study area represent Native American and Euro-American traditions and differ somewhat between districts on the UMR and between the UMR and the IWW (table 4). Historic Native American components represent 1.8 percent (n=52) of the total components identified within the study area. These components have been documented most frequently in the MVP district (n=34, 4.8 percent) compared to MVR (n=6, 0.9 percent), MVS (n=2, 0.6 percent), and the IWW (n=10, 0.9 percent). It is likely that the generally low numbers of historic Native American sites may be due to inadequate recognition of this site type and not a settlement pattern or preference. Historic Euro-American components represent 16.9 percent (n=480) of the total components identified within the HPMP study area. These components are further subdivided on the IWW into historic, colonial, pioneer, frontier, early industrial, urban industrial, and post-war study units.

In addition to those archeological sites documented by field investigations, archival research has identified a total of 964 potential submerged historic sites on the UMR and IWW (table 5). On the UMR, a total of 893 potential submerged historic sites were identified including shipwrecks (n=885) and submerged structures and navigation markers (n=8). On the IWW, a total of 71 potential submerged shipwreck sites were identified.

The potential for undocumented archeological sites across the study area is high, although it varies considerably according to landscape position and associated LSA. Geomorphological research has defined and mapped LSA units for most of the study area including the UMR in the Mississippi Valley Division, St. Paul ( MVP) and MVR districts and the IWW in the MVR district. LSA mapping is ongoing in the MVS district. LSA units are discontinuous geologic features that define Late Wisconsinan and Holocene alluvial fills. Each LSA unit has an ordered structure of development with predictable ages that provide the primary context of archeological deposits. LSAs have proven effective in determining the likelihood for near-surface and/or deeply buried archeological sites.

Approximately 10 percent of the UMR portion of the study area in the MVR District has been surveyed and an archeological site frequency of roughly 1 site per 42 acres has been documented (table 6). Approximately 4 percent of the IWW bluff-to-bluff study area has been surveyed and an archeological site frequency of 1 site per 109 acres has been documented (table 7). In both cases archeological site frequencies differ significantly between LSA units. On the UMR, for instance, Savanna Terraces (1 site per 19 acres) and Alluvial Fans/Colluvial Slopes (1 site per 15 acres) have much higher archeological site frequencies than LSAs like the Late Holocene (1 site per 124 acres) or Island (1 site per 358 acres) units. This may represent settlement patterning and/or it may be due in part to the survey methodology employed in areas with characteristically thick recent alluvial deposits.

#### IV. SUMMARY TABLES

The following tables were prepared as part of the environmental impact statement for the Navigation Study. They represent a subset of the present study area and are included only as background information.

**Table 1.** NRHP Status of All Archeological Sites Identified in the UMR and IWW Navigation Zones

<b>National Register Status</b>	<b>UMR MVP</b>	<b>UMR MVR</b>	<b>UMR MVS</b>	<b>UMR TOTAL</b>	<b>IWW TOTAL</b>	<b>TOTAL</b>
Listed/Eligible	40	42	22	104	101	<b>205</b>
Not Eligible	1	75	66	142	305	<b>447</b>
Require Determination	444	390	177	1011	379	<b>1390</b>
<b>Total Sites</b>	<b>485</b>	<b>507</b>	<b>265</b>	<b>1257</b>	<b>785</b>	<b>2042</b>

**Table 2.** Occurrence of Unknown Prehistoric, Paleo-Indian, and Archaic Components in UMR and IWW Navigation Zones

Waterway	Unknown Prehistoric	Paleo-Indian	Archaic	Early Archaic	Middle Archaic	Late Archaic
UMR						
MVP	79	4	14	2	2	16
MVR	161	3	22	4	5	5
MVS	89	0	10	1	4	7
UMR Total	329	7	46	7	11	28
IWW Total	255	0	49	3	10	21
<b>TOTAL SITES</b>	<b>584</b>	<b>7</b>	<b>95</b>	<b>10</b>	<b>21</b>	<b>49</b>

**Table 3.** Occurrence of Woodland, Mississippian, and Oneota Components in the UMR and IWW Navigation Zones

Waterway	Woodland	Early Woodland	Middle Woodland	Late Woodland	Mississippian	Oneota
UMR						
MVP	151	31	64	114	15	55
MVR	103	37	50	79	10	19
MVS	22	8	30	39	30	0
UMR Total	276	76	144	232	55	74
IWW Total	65	92	151	188	118	
<b>TOTAL SITES</b>	<b>341</b>	<b>168</b>	<b>295</b>	<b>420</b>	<b>173</b>	<b>74</b>

**Table 4.** Occurrence of Historic Period Components in the UMR and IWW Navigation Zones

Waterway	Historic Native American Components	Historic Euro-American Components	Total Historic Components
UMR			
MVP	45	107	152
MVR	9	67	76
MVS	5	96	101
<b>UMR Total</b>	<b>59</b>	<b>270</b>	<b>329</b>
IWW			
MVR	10	142	152
MVS	0	0	0
<b>IWW Total</b>	<b>10</b>	<b>142</b>	<b>152</b>
<b>TOTAL SITES</b>	<b>69</b>	<b>412</b>	<b>481</b>

**Table 5.** Occurrence of Submerged Historic Sites and Structures on the UMR and IWW as Identified Through Archival Research

Waterway	Submerged Boat Sites	Submerged Structures and Navigation Markers	Total Potential Submerged Historic Sites
UMR			
MVP	64	1	65
MVR	131	7	138
MVS	690	0	690
<b>UMR Total</b>	<b>885</b>	<b>8</b>	<b>893</b>
IWW			
MVR	48	0	48
MVS	23	0	23
IWW Total	71	0	71
<b>TOTAL SITES</b>	<b>956</b>	<b>8</b>	<b>964</b>

**Table 6.** Observation of Archeological Site Frequency by LSA on the UMR MVR District  
Data taken from the MVR UMR LSA and HPMP databases

Landform Sediment Assemblage (LSA)	Number of Archeological Sites	Total LSA Acreage	Total Surveyed LSA Acreage	Surveyed Acreage Per Site
Cuiver Terrace	14	12528	422	30.2
EarlyMid Holocene	274	173806	18582	67.8
Fan/Colluvial Slope	515	145142	8092	15.7
Island	16	41467	5728	358.0
Kingston Terrace	334	75975	13948	41.8
Late Holocene	79	63154	9841	124.6
Levee	86	43881	4201	48.8
Savanna Terrace	355	98392	6798	19.1
Tributary Fan	173	92151	11799	68.2
Yazoo Meanderbelt	149	83647	4776	32.1
<b>TOTAL</b>	<b>1995</b>	<b>830143</b>	<b>84189</b>	<b>42.2</b>

**Table 7. IWW Archeological Site Frequency by Floodplain Landscape and Associated LSAs. Data Derived from IWW HPMP and LSA Databases.**

<b>IWW LANDSCAPE WITH LSA UNIT</b>	<b>Survey Area (ac)</b>	<b>Sites Recorded</b>	<b>Acreage/Site</b>
<b>Floodplain</b>			
Bar, associated with Type D floodplain	198.7	4	49.7
Crevasse splay	317.7	1	317.7
Floodplain, undifferentiated	171.8	2	85.9
Floodplain Type B, with Type O overbank deposits	136.0	1	136.0
Floodplain Type C	268.8	6	44.8
Floodplain Type C, with Type A overbank deposits	231.9	4	58.0
Floodplain Type C, with Type O overbank deposits	257.1	4	64.3
Floodplain Type D	457.5	3	152.5
Floodplain Type D, with Type A overbank deposits	608.3	5	121.7
Floodplain Type E	469.1	1	469.1
Floodplain Type E, with Type A overbank deposits	617.5	5	123.5
Floodplain, undifferentiated, with Type O overbank deposits	192.1		
Floodplain Type S	265.0	3	88.3
Natural levee, youngest (associated with Type B floodplain LSA)	209.5	1	209.5
Natural levee, youngest (associated with Type B floodplain LSA) with Type O overbank deposits	2109.7	14	150.7
Natural levee, next to youngest (associated with Type C floodplain LSA)	690.6	8	86.3
Natural levee, next to youngest (associated with Type C floodplain LSA)	1368.6	17	80.5
Natural levee, second next to youngest (associated with Type C floodplain LSA)	195.5	2	97.8
Natural levee, undifferentiated, with Type O overbank deposits	442.2	8	55.3
Natural levee (associated with Type S floodplain)	307.4	6	51.2
Alluvial fan	5569.7	46	121.1
Colluvial slope, Type A	139.4	7	19.9
Floodplain, third next to youngest, with Type O overbank veneer	139.1	1	139.1
<b>Floodplain Total</b>	<b>15363.0</b>	<b>149</b>	<b>103.1</b>
<b>Tributary</b>			
Channel belt	1475.2	12	122.9
Channel belt, next to youngest	413.0	5	82.6
Channel belt, with Type A overbank veneer	237.9	1	237.9
Channel belt, with Type O overbank veneer	414.5	3	138.2
Delta	216.9	1	216.9
Floodplain	1019.9	10	102.0
Floodplain, with Type O overbank veneer	337.1	1	337.1
Overbank belt	482.9	6	80.5
Overbank belt, with type O overbank veneer	231.9	1	231.9
Paleochannel, next to youngest	178.1	9	19.8
Terrace, with loess veneer	351.7	3	117.2
<b>Tributary Total</b>	<b>5359.2</b>	<b>72</b>	<b>74.4</b>

