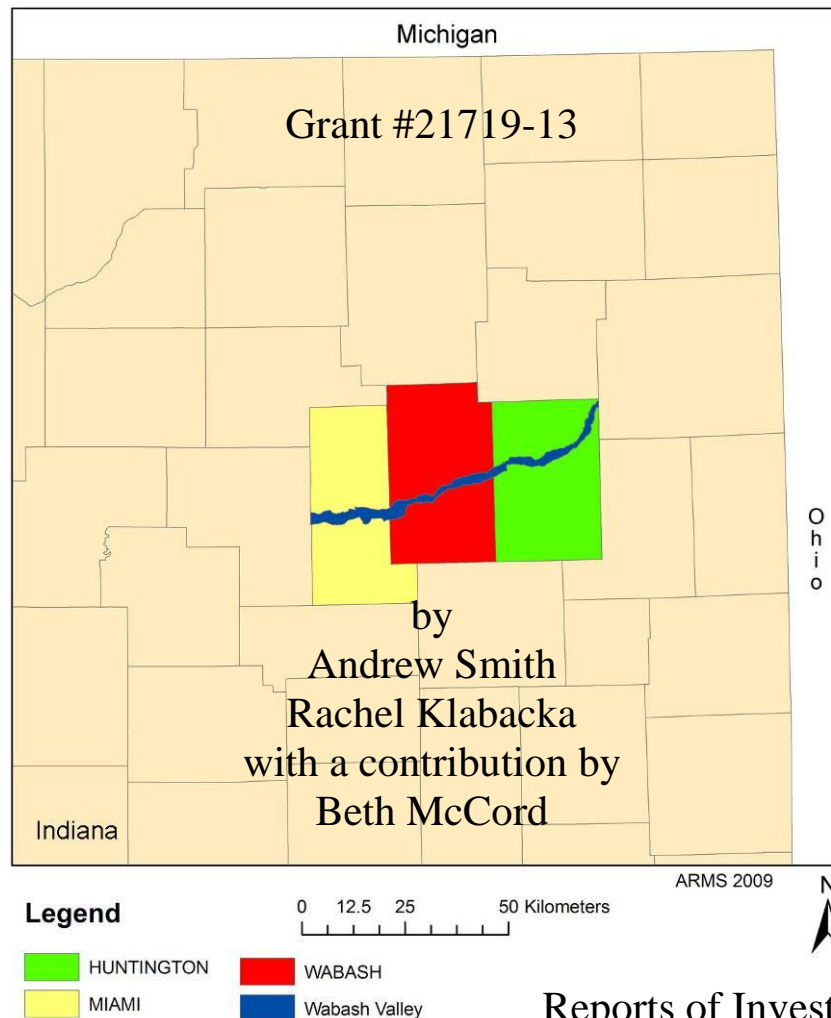


Archaeological Investigations in the Upper Wabash River Valley: A 2009 Survey in Huntington, Miami and Wabash Counties, Indiana



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Volume 1
July 2009

Archaeological Resources Management Service
Ball State University, Muncie, IN 47306-0435
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Archaeological Investigations in the Upper Wabash River Valley: A 2009 Survey in Huntington, Miami and Wabash Counties, Indiana

Grant #21719-13

by
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with a contribution by
Beth McCord
Principal Investigator

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This project has received federal financial assistance for the identification, protection and/or rehabilitation of historic properties and cultural resources in the State of Indiana. However, the contents and opinions contained in this publication do not necessarily reflect the view or policies of the Department of the Interior. Under Title VI of the Civil Rights Act of 1964 and Section 504 of the Rehabilitation Act of 1973, the U.S. Department of the Interior prohibits discrimination on the basis of race, color, national origin or disability in its federally assisted programs. If you believe you have been discriminated against in any program, activity, or facility as described above, or if you desire further information, please write to: Office for Equal Opportunity, U.S. Department of the Interior, 1849 C Street, N.W., Washington, D.C. 20240.

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Thank you all.

ABSTRACT

The Archaeological Resources Management Service (ARMS) at Ball State University conducted a data enhancement project for threatened archaeological resources in the Little River and Wabash River valley in Miami, Wabash and Huntington Counties, Indiana, for a FY2008 Historic Preservation Fund Grant (Grant #21719-13). This Historic Preservation Fund grant project investigated the archaeological resources of the Little River and Wabash River valleys in Huntington, Miami and Wabash counties, Indiana. Approximately 791 acres (320 hectares) of agricultural land were surveyed and 467 new archaeological sites were recorded. The survey recovered 10,237 prehistoric artifacts and 556 historic artifacts from fourteen locations within the Little River and Wabash River valleys. All periods including Paleo-Indian, Early Archaic, Middle Archaic, Late Archaic, Early Woodland, Middle Woodland and Late Woodland/Prehistoric components were documented from the precontact era. The average site density recorded for the project area for precontact sites was one site per 1.7 acres. The highest artifact densities were encountered in survey areas with expansive sections of Genesee (Gessie) soils. This soil is a well drained alluvial soil. The project suggests that precontact populations used the Wabash River valley and its tributary valleys for long term settlements as well as short term extractive camps. Site duration was most intensive at areas where chert and food resources would have been concentrated.

In addition to the pedestrian survey limited excavations were conducted for three mounds recorded at J. Edward Roush Lake: Big Bangs (12-Hu-25), Little Bangs Mounds (12-Hu-26), and an unnamed mound (12-Hu-27). The project was conducted under ARPA permit # DACW27-4-09-010 and DHPA approved plan # 2008026.

The limited excavations documented that Big Bangs (12-Hu-25) and Little Bangs (12-Hu-26) contained intact deposits. The recovery of a Triangular Cluster biface and a radiocarbon date between cal AD 420 and 600 indicated a late Middle Woodland to early Late Woodland time period for the construction of the mounds. While the temporal affiliation of the mounds was better defined by the project, the cultural affiliation of the mounds was still ambiguous. From a regional perspective, no identified cultural groups have been named for this period in the Upper Wabash drainage. The two mounds are the only known surviving examples of mounds in the Upper Wabash drainage. The mounds provided a unique opportunity to further explore the settlement system of MiddleWoodland/Late Woodland populations and offered a rare opportunity to examine the ceremonial and ritual aspects of the inhabitants of the area. The mounds were determined eligible for listing on the State and National Registers of Historic Places.

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INTRODUCTION

The Archaeological Resources Management Service (ARMS) at Ball State University conducted a FY2008 Historic Preservation Fund Grant to investigate unsurveyed and threatened portions of the Little River and Wabash River valleys in Huntington, Miami and Wabash counties, Indiana and to conduct limited excavations at Big Bangs and Little Bangs mounds and the unnamed mound 12-Hu-27 in Huntington County (Figure 1). Gravel mining within the Little River and Wabash Rivers may have already destroyed many State and/or National Register sites. The goal of the current project was to document resources in especially threatened portions of the valleys. The project involved a pedestrian survey of approximately 800 acres of agricultural land. The goals of the project were to investigate previously unsurveyed portions of the Little River and Wabash rivers, refine settlement patterns of the precontact and early Euro-American era and increase Indiana's site data base. Additionally, the limited excavations at Big Bangs and Little Bangs mounds were undertaken in an attempt to place the mounds within a regional context as the context was unclear (Wepler and Cochran 1983a, 1983b). Big Bangs and Little Bangs mounds were partially excavated in 1963 in addition to 12Hu27 (Gerald 1964). Unfortunately the excavations were not backfilled after excavation and they are situated on federal property [REDACTED]. Campsites are built immediately adjacent to the open mounds and they undoubtedly were deteriorating (Wepler and Cochran 1983b:120). The impetus behind the limited excavations was to provide data on State and/or National Register eligibility and to seek a means for preserving any intact portions of the mounds.

For the proposed pedestrian survey, we targeted valley settings that have not been previously surveyed in Huntington, Miami and Wabash counties. Specifically, the areas targeted included the Little River valley in Huntington County (Figure 2), the Richvalley area of the Wabash River in Wabash and Miami counties (Figure 3) and areas just east of Peru in Miami County (Figure 4). These areas were selected for the expansive sluiceway valley combined with recent river terraces (Gefell 1983: map). Within these valleys extensive outwash deposits occur (Gefell 1983:25). The area within and around the Little River and the Wabash River valleys are seriously threatened by gravel mining. This project was directed toward enhancing the archaeological data that is threatened by mining in the region and it will expand on the extensive research that has been conducted in the Wabash River valley (Kellar 1963, 1964a, 1964b, Wepler 1982, Wepler and Cochran 1982, Wepler and Cochran 1983a, Wepler and Cochran 1983b, Anuszczyk and Cochran 1984, Holsten and Cochran 1986, Cochran and Buehrig 1985, James and Cochran 1986, Cochran and James 1986). These projects have provided substantial

archaeological information, but they have suggested that the Upper Wabash drainage is an environmentally distinct region that is somewhat different from other parts of the Tipton Till Plain.

Sites Locations Confidential

Not for Public Disclosure

Figure 1. Location of mounds 12-Hu-25, 26 and 27 as shown on a portion of the USGS 7.5' Majenica, Indiana Quadrangle.

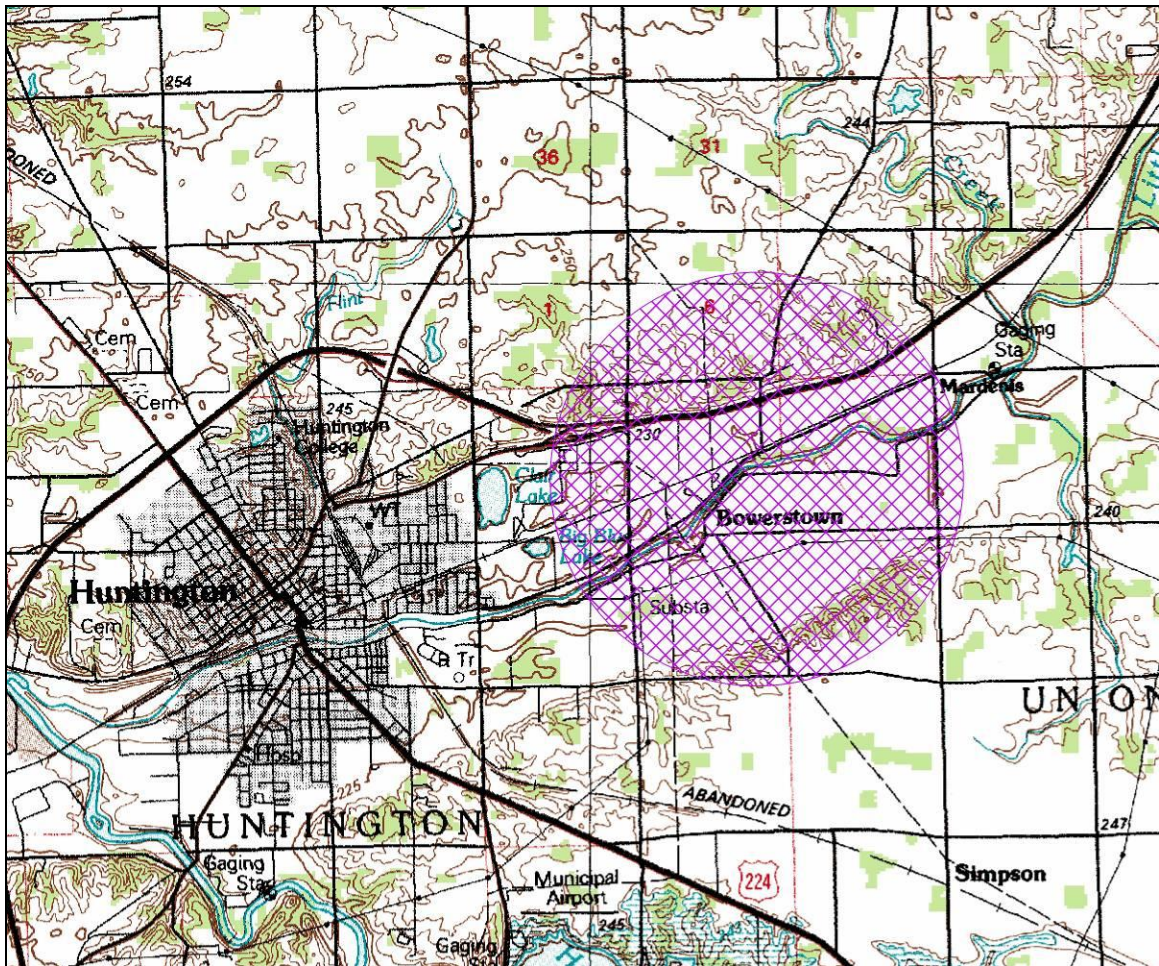


Figure 2. Proposed survey area east of Huntington.

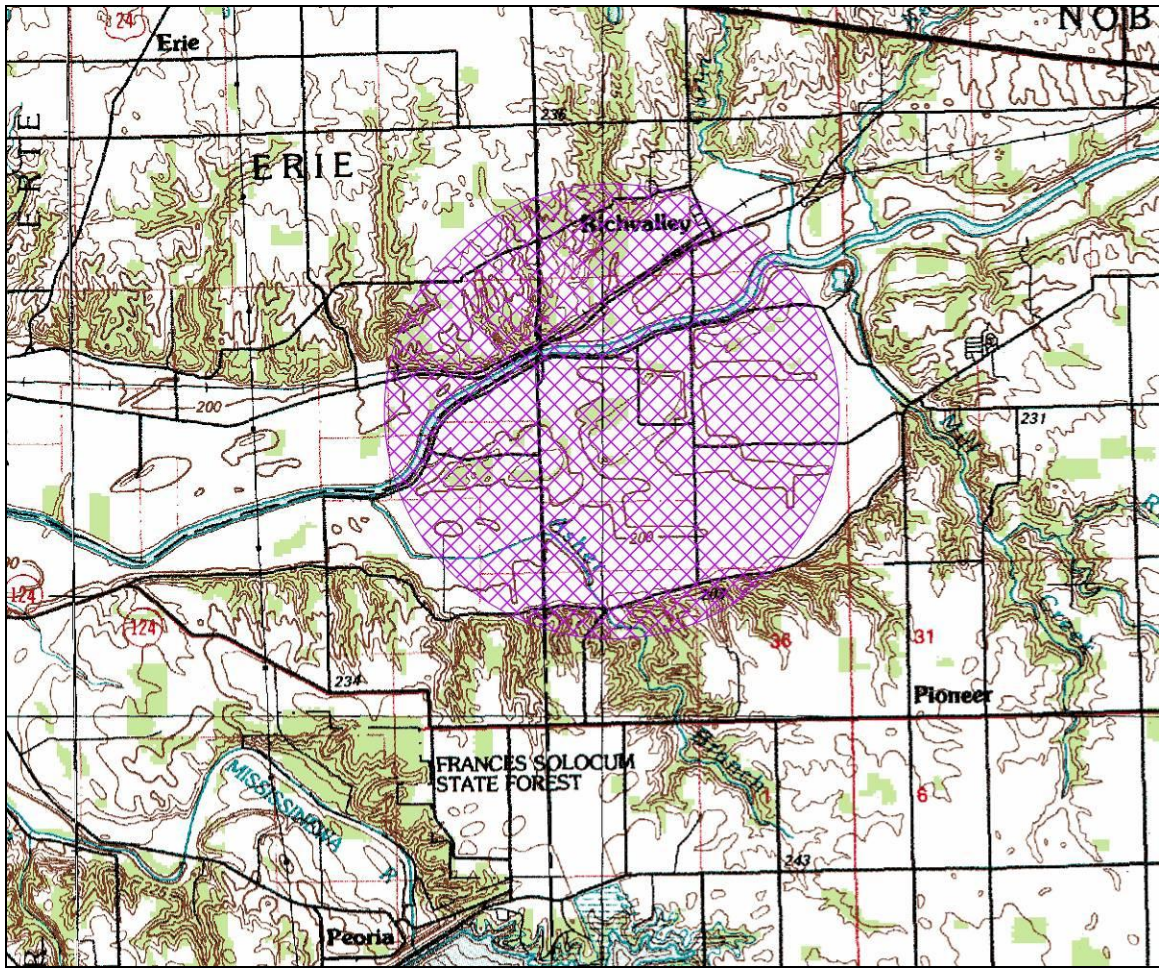


Figure 3. Proposed survey area at Richvalley.

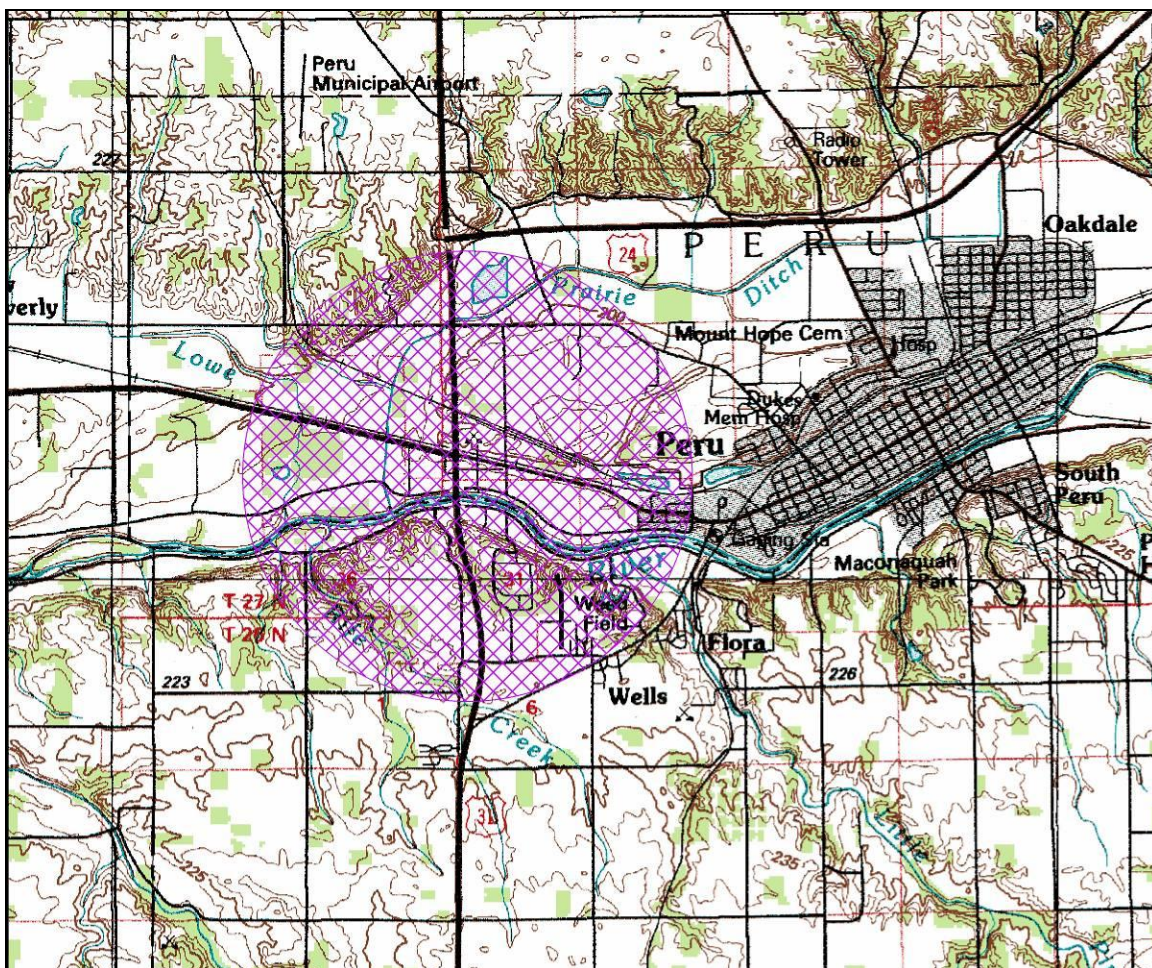


Figure 4. Proposed survey area west of Peru.

The following research questions, while not exhaustive, guided this project.

1. What are the densities and distributions of archaeological sites on the various landforms within the Wabash River valley in the survey areas?
2. What is the chronology of precontact settlement on the various landforms within the study area?
3. What is the nature of the Late Woodland/Late Prehistoric settlement in the upper Wabash River valley?
4. Where are the sites with ceramics located in the Wabash River valley?
5. What is the nature of the density and distribution of chert resources in the study area?
6. What is the nature and distribution of mound sites within the study area?
7. Are mound sites in the Upper Wabash drainage related to the mounds and enclosures in east central Indiana?
8. What is the chronology, nature and structure of Big Bangs/Little Bangs and 12-Hu-27 mounds?
9. What is the structure of historic Native American and early Euro-American settlement in the study area?

BACKGROUND

Environmental Setting

To provide a framework for interpreting the data collected during this project, a review of the natural and cultural setting was undertaken. The background information presented in this report includes environmental and archaeological information concerning the Upper Wabash River valley.

Location

The project area is located in the Upper Wabash River valley in central Indiana within Huntington, Miami and Wabash counties (Figure 5). The research universe is approximately 40,265 acres in size which includes all of the Little River and Wabash Valley within Huntington, Miami and Wabash counties. For the proposed research, areas threatened by gravel mining were targeted west of Peru, Indiana, south of Richvalley, Indiana, and east of Huntington, Indiana.

Geology

The structural framework of Indiana is divided into three general areas: the Illinois and the Michigan Basins which are separated by the Cincinnati Arch and its branches of the Findlay and Wisconsin Arches (Gutshick 1966: 9). The Upper Wabash River valley and the project area are within the broad region of uplift known as the Cincinnati Arch (Gutshick 1966: 10-17). The Cincinnati Arch can be divided into smaller bedrock physiographic zones. The Upper Wabash River valley lies within the Bluffton Plain physiographic zone (Schneider 1966: 54).

The Bluffton Plain (Schneider 1966: 54) is a nearly flat limestone upland that closely follows the regional dip on the north end of the Cincinnati Arch. The plain was formed over Silurian limestone and dolomites. The Bluffton Plain is covered by unconsolidated glacial deposits (Wayne 1958: 29-30, Schneider 1966: 56).

The bedrock geology of the Upper Wabash River valley contains Silurian age dolomite, limestone, chert, siltstone, and shale (Gutshick 1966: 3-5). Limestone bedrock outcrops are reported throughout the Upper Wabash River region and an exact number is unknown for the entire project area; however, within Miami County bedrock outcrops have been reported in at least 31 locations along the Wabash River and its tributaries (Thornbury and Deane 1955: 14-20).

Liston Creek chert is the only documented bedrock chert available within the survey area (Cantin 2005). Liston Creek chert was identified as a Silurian Chert from the Upper Wabash River in the 1980's (Cochran 1980). Liston Creek chert is defined as being a grey, tan and brown chert. Cochran has noted that "quality ...ranges between well silicified and poorly silicified material with significant variation within individual samples. On many samples, the poorly silicified areas are soft enough to scratch with a fingernail. The intermixture of material quality is a diagnostic feature of Liston Creek chert. Bifacial artifacts made from Liston Creek chert suggests that knapping material was selected for consistency of material rather than quality alone" (Smith et al. 2008).

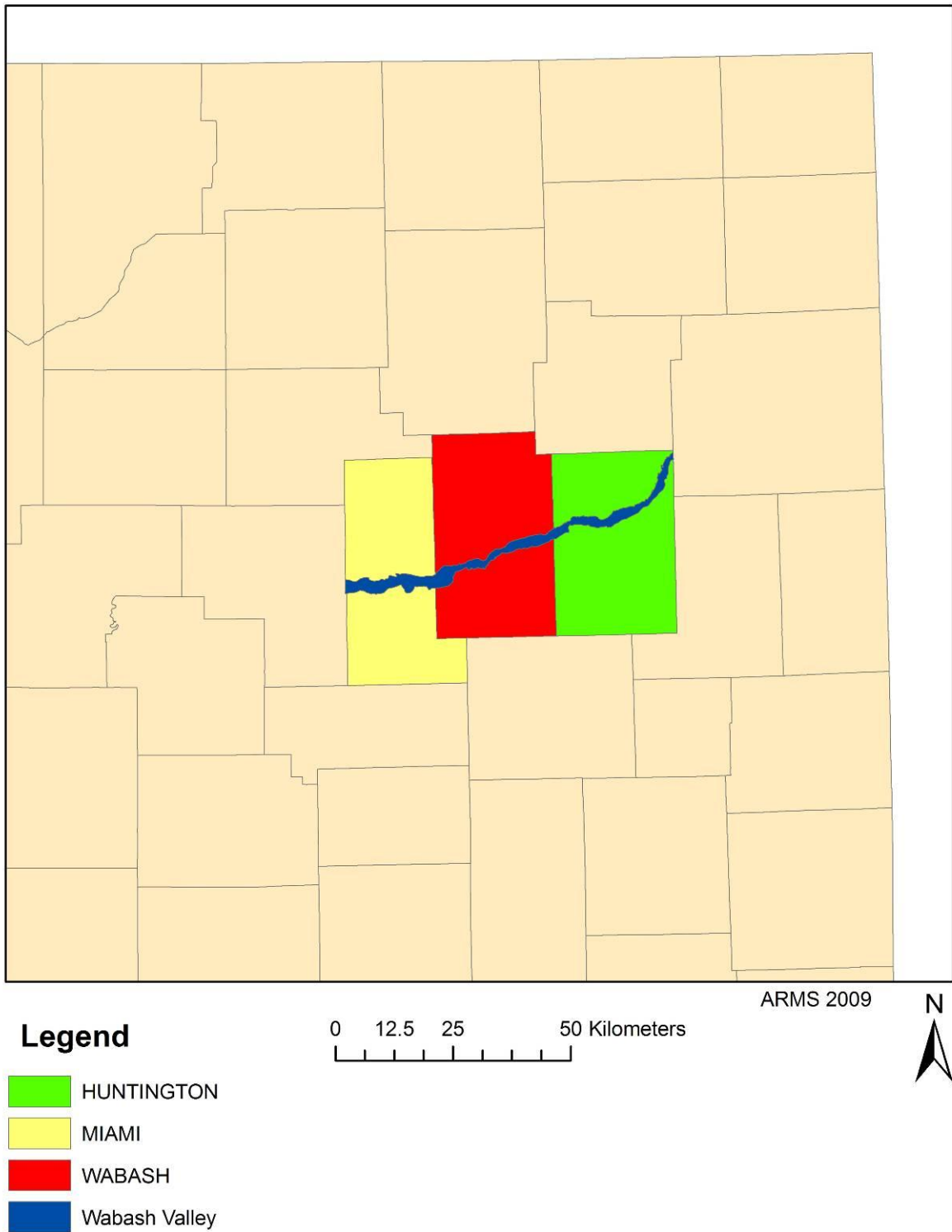


Figure 5. The Wabash Valley in Huntington, Miami and Wabash counties within the state of Indiana.

Glacial History

Glacial drift covers the bedrock in most areas of Huntington, Miami and Wabash counties (Shurig 1970: 6, Shurig 1972: 6; Gefell 1985: 18). The Kansan, Illinoian and Wisconsin glacial episodes all covered Huntington, Miami and Wabash counties leaving drift that varies between none to over 450 ft (Shurig 1970: 6, Shurig 1972: 6; Gefell 1985: 19). The Wisconsin glacial deposits buried the previous glacial episodes and all the surface glacial land forms in the region are part of the Cartersburg Till Member of the Trafalgar Formation and in the Unnamed and New Holland members of the Lagro Formation (Wayne 1966: 26). The Trafalgar formation is primarily composed of a massive calcareous conglomeritic mudstone, (a compact but uncemented sandy, silty, matrix) with scattered beds of gravel, sand and silt (Wayne 1963: 45). The Lagro Formation is primarily composed of conglomeritic mudstones and associated lenses of stratified sediments (Wayne 1963: 43).

Unconsolidated sediments overlie the Trafalgar and Lagro Formations in some areas and were deposited extraglacially as the Atherton Formation (Wayne 1963: 31, Wayne 1966: 26). These sediments of gravel, sand, silt and clay were derived primarily from glacial outwash and were sorted and deposited by meltwater currents, wind action or in the quiet waters of glacial lakes (Wayne 1963: 31, Wayne 1966: 26). Most of the Atherton Formation sediments in the project area would belong to the outwash facies. This facies consists of stratified coarse-grained sediments which were deposited in sheets by glacial meltwater current in valley fill (Wayne 1963: 32). The outwash facies of the Atherton Formation intertongues and intergrades with other formations in the state (Wayne 1963: 32). The Martinsville Formation sediments are post-glacial in age, composed of recent alluvium of silt, sands and gravels, and only occur on the flood plains of rivers and streams (Wayne 1963: 29).

The pre-glacial Teays River valley was located within this region. The Teays River was the main drainage system across the country stretching from North Carolina to Illinois. The only current manifestation of the Teays River valley is at the widened floodplain at Richvalley in Miami and Wabash counties. With the advance of the ice sheets the drainage was diverted to what is now the Ohio River (Shurig 1972: 6).

The Wabash Valley which makes up the project area has a unique glacial history. The valley is composed of three levels: an upper terrace called the Mississinewa terrace, a lower terrace called the Maumee terrace and a third and lowest level consists of the recent flood plain (Shurig 1970: 8, Shurig 1972: 8, Gefell 1985: 21-22). The upper Mississinewa terrace was formed by sand and gravel-bearing meltwater during the late Tazewell and early Cary Wisconsin glacial sub-ages. The Maumee terrace was carved out of the earlier Mississinewa outwash materials when glacial lake Maumee broke through its ridge moraine dam. The lowest or flood

plain level was eroded in recent time by the post-glacial Wabash and Little Rivers (Shurig 1970: 8, Shurig 1972: 8, Gefell 1985: 21-22). The Mississinewa and the Maumee terraces can be traced all the way to the mouth of the Wabash River (Shurig 1970: 8, Shurig 1972: 8, Gefell 1985: 21-22).

Physiography

The Upper Wabash River valley lies within the Tipton Till Plain physiographic division of Indiana, a member of the Till Plain Section of the Central Lowland Province of the United States (Shurig 1970: 11, Shurig 1972: 12, Gefell 1985: 12). The Tipton Till Plain has a nearly flat to gently rolling topography which is crossed by several end moraines created during the Wisconsin Glaciation (Wayne 1966: 34). However, the end moraines within the area are so low and poorly developed that the Tipton Till Plain is generally characterized as “virtually featureless” (Schneider 1966: 49).

The Upper Wabash River valley lies within the Bluffton Till Plain physiographic division of Indiana, a member of the Central Till Plain Region (Gray 2000). The Bluffton Till Plain section is characterized as a relatively flat landscape with a concentric series of end moraines crossing the landscape (Gray 2000).

The Upper Wabash River valley cuts into the local relief ranging from 90 ft in Huntington County to 100 ft in Miami County (Shurig 1970: 11-14, Shurig 1972: 12-14, Gefell 1985: 12). The predominate topography in which the Upper Wabash River valley cuts into consists of ground moraine with areas of ridge moraine. The most notable is the Mississinewa ridge moraine. As stated above, the topography of the Upper Wabash River valley itself consists of flood plain and terrace (Shurig 1970: 8, Shurig 1972: 8, Gefell 1985: 21-22).

Soils

The majority of soils found in Huntington, Miami and Wabash counties are a product of either glacial or fluvial parent materials. Glacially deposited sediments of the ridge and ground moraines typically have clayey to silty textures while kames and eskers consist of sands and gravels. Glacial-fluvial deposits in outwash plains and terraces range from silty to gravelly textures. The more recent fluvial deposits found on flood plains and river terraces are dominated by loamy textures. Lacustrine plains tend to have clayey textures. The cumolose deposits of peat and muck are high in organic matter with little mineral composition (Shurig 1974, Gefell 1983, Chen and Caturvedi 1992).

Areas that were surveyed during this project were primarily within valleys that cut across ground moraine deposits. The survey was focused on the Genesee-Ockley-Fox (Huntington), Gessie-Shoals (Miami) and Genesee-Milton-Shoals (Wabash) soil associations mapped within the Upper Wabash River valley (Lockridge and Jensen 1982, Deal 1979, Ruesch 1983). However, the areas surveyed incorporated six soil associations mapped in the three counties (Table 1). Soil series associated with till plain settings (Brookston, Pewamo), eolian (Chelsea), peat and muck (Palms) and lake plain (Patton) represent minor portions of the project area. Soil series identified as forming in outwash deposits (Fox, Millsdale, Milton, Ockley, Oshtemo-Ormas, Randolph, Westland and Whitaker) represent a substantial portion of the soils within the project area. Soil series associated with floodplain settings (Genesee, Gessie, Ross, Shoals, Sloan, Stonelick) represent the majority of the project area. The soil series mapped within the project area would have supported a variety of flora and fauna to attract human occupation.

<p>Table 1. Soil Associations (Huntington: Lockridge and Jensen 1982, Miami: Deal 1979, Wabash: Ruesch 1983)</p>			
Association	Description	Landforms	% of County
Blount-Pewamo (Huntington)	Deep, nearly level and gently sloping, somewhat poorly drained and very poorly drained, medium textured and moderately fine textured soils formed in calcareous glacial till.	Till Plains	62%
Genesee-Ockley-Fox (Huntington)	Deep or moderately deep over sand and gravel, nearly level to moderately sloping, well drained, medium textured soils formed in stratified alluvial and glacial outwash sediments.	Floodplains	4%
Fox-Oshtemo (Miami)	Nearly level to strongly sloping, well drained, medium textured and moderately coarse textured soils that are moderately deep or deep over sand and gravel, on outwash terraces.	Outwash Terrace	8%
Gessie-Shoals (Miami)	Deep, nearly level, well drained and somewhat poorly drained, medium textured soils on flood plains	Floodplains	8%
Genesee-Milton-Shoals (Wabash)	Nearly level to moderately sloping, well drained and somewhat poorly drained soils that formed in loamy alluvium or in loamy glacial drift and limestone residuum.	Floodplains	4%
Miami-Crosby (Wabash)	Nearly level to moderately steep, well drained and somewhat poorly drained soils that formed in loam glacial till.	Till plains	8%

Water Resources

The Upper Wabash River drainage system is a dendritic, subparallel drainage pattern running northeast to southwest (Schneider 1966: 49-50). Within Huntington, Miami and Wabash counties there are few natural drainageways. The best developed are located along the Upper Wabash River and include the Eel River, the Salamonie River, and the Mississinewa River.

Regional watersheds are defined by the ridge moraines that disrupt the dendritic pattern. Multiple streams are deflected and diverted by the ridge moraines (Shurig 1970: 4, Shurig 1972: 5, Gefell 1985: 16). Loon Creek, located in Huntington County, flows nearly parallel to the Wabash River for over ten miles before connecting with it due to the roughly east-west trending band of ridge moraine (Gefell 1985: 16). Tributaries are often shorter and more numerous than those from other areas due to the steeply sloping terraces. In the ground moraine areas, drainage is generally sluggish. However, no natural lakes exist within the Upper Wabash River region. Several man made ponds have been constructed to improve sluggish drainage conditions across the region for agricultural purposes (Shurig 1970: 4, Shurig 1972: 5, Gefell 1985: 16).

Water resources are extremely important to human occupation and influence human habitation. The Upper Wabash River and associated marsh lands would have been a valuable resource to prehistoric and historic populations.

Climate

The modern climate of Indiana is described as a humid, mesothermal-microthermal, continental climate (Newman 1966:171). This refers to Indiana's lack of average humidity less than 50% and cold periods of winter and hot periods of summer (Newman 1966: 171). Northern Indiana is within the microthermal unit which has a cool temperature climate like those found farther north and east, whereas southern Indiana is a part of the mesothermal unit which has a warm temperature climate similar to those areas in the south and west (Newman 1966:171). Since the Upper Wabash River valley is located in north-central Indiana, it experiences daily and seasonal variability in climate, with very cold winters and hot and humid summers (Lockridge and Jensen 1982; Deal 1979; Ruesch 1983).

The temperature and precipitation data presented was collected in Huntington, Miami and Wabash counties between 1951 and 1974 (Lockridge and Jensen 1982: 2, 86; Deal 1979: 2, 92; Ruesch 1983: 2, 136). For Miami County the average winter temperature is 27 degrees and the average daily minimum temperature is 18 degrees. The average summer temperature is 70

degrees and the average daily maximum temperature is 83 degrees. The total annual precipitation is 37.2 inches. The precipitation in the spring through early fall generally exceeds precipitation in the winter, but it is fairly evenly distributed (Deal 1979: 2, 92). For Wabash County the average winter temperature is 27 degrees and the average daily minimum temperature is 18 degrees. The average summer temperature is 70 degrees and the average daily maximum temperature is 83 degrees. The total annual precipitation is 37.2 inches. The precipitation in the spring through early fall generally exceeds precipitation in the winter, but it is fairly evenly distributed (Ruesch 1983: 2, 136). For Huntington County the average winter temperature is 28 degrees and the average daily minimum temperature is 20 degrees. The average summer temperature is 72 degrees and the average daily maximum temperature is 84 degrees. The total annual precipitation is 37.3 inches. The precipitation in the spring and early summer generally exceeds precipitation in the winter, but it is fairly evenly distributed (Lockridge and Jensen 1982: 2, 86).

Local climatic influences can be created by several natural features within the landscapes that human populations could anticipate. These areas would have affected prehistoric and historic utilization of the local environment and created site selected environments. Newman (1966: 174-176) refers to these areas as “meso-climates” and states that they are mainly caused by wind patterns produced by natural landforms such as major river valleys, the shore area around large lakes, high plateau areas and springs.

The modern climate of Indiana is of course not an accurate reflection of the climate over the last 12,000 years. As other archaeologists have noted (e.g. King 1993: 236), the reconstruction of paleo-climates has been hampered by ambiguous climatic data that have been used to support conflicting interpretations. Climatic change has been documented and can be discussed in generally accepted terms.

As the glacial ice retreated at the end of the Wisconsin Ice Age, the interglacial or Holocene period began a shift to a warmer climate with conditions characterized as cool and moist. A warming period known as the Hypsithermal interval occurred between 9000 and 4000 years ago. During the Hypsithermal the precipitation may have decreased by 10 to 25% and the mean July temperature may have been 0.5 to 2° C higher than today. After the Hypsithermal, the temperature has generally decreased and the precipitation has increased. A noted cool and wet climate is documented for the Little Ice Age (ca. AD 1450 to 1850), but alternating intervals of cool and wet with warm and dry has been suggested (Delcourt and Delcourt 1991, Holloway and Bryant 1985).

Climate is a significant factor in driving ecological processes. It regulates disturbance regimes such as wildfires; wind damage and flooding that in turn dictate the landscape mosaic. Environmental changes can result in new conditions that have profound effects on biota.

Biotic Communities

Flora

As the climate shifted in Indiana after the end of the Pleistocene, so did the plant species. Table 2 presents the transformation of the vegetative sequence constructed by Shane (1976) to reflect the general changes that took place within the region since the retreat of the glacial ice. Table 2 is a regional generalization and of course does not cover the project area specifically. Vegetative responses have not been recorded in sediments for the Great Lakes Region (Holloway and Bryant 1985: 237).

Table 2 Vegetation Sequence of Central Indiana (Cochran and Buehrig 1985: 9, after Shane 1976)		
AD 2000	Historic	Deciduous Forest
AD 1000		
0	Late Woodland	
	Middle Woodland	
1000 BC	Early Woodland	
2000 BC	Late Archaic	Prairies and Open Vegetation
3000 BC		
4000 BC	Middle Archaic	
5000 BC		
6000 BC		
7000 BC	Early Archaic / Late Paleo Indian	Deciduous Forest
8000 BC		
9000 BC	Early Paleo Indian	Pine Maximum
10000 BC		Conifer-Deciduous Woodland
11000 BC		Boreal Forest
12000 BC		
13000 BC		Park Tundra
		Tundra or Open Areas
14000 BC		Periglacial Zone
15000 BC		Wisconsin Ice

With historic documentation, more detailed descriptions of the vegetation in north-central Indiana can be given. The historic forest descriptions should be representative of the deciduous vegetation occurring during the Woodland period. Petty and Jackson's (1966) study of the

natural vegetation of Indiana in 1816 shows the Upper Wabash River valley within the beech-maple forest association. The beech-maple forest is fairly new to the state. The advancement of this forest association was slowed by the dominant oak forest that existed in the area during the Hypsithermal. However, logging practices in the early 19th century often overlooked beech as a poor value crop and therefore beech has been able to dominate much more of the state than would have been possible (Petty and Jackson 1966: 283). The beech-maple forest developed from the mesophytic forest as northward post glacial migration occurred. Beech-maple forests usually have beech as the most abundant canopy tree with sugar maple co-dominant in the canopy and dominant in the understory. Various other species of tree such as sassafras, black cherry, tulip poplar and walnut are also found throughout the beech-maple forest, inhabiting gaps within the canopy (Petty and Jackson 1966: 283). Plants found within the understory consisted of redbud, dogwood, blue beech, or dogwood, hop hornbeam (Petty and Jackson 1966: 285). The shrub layer consisted of pawpaws, spicebush, greenbriar, elderberry, leatherwood, wahoo, and maple leaf viburnum (Petty and Jackson 1966: 285). The most prominent herbs occur which occur in the spring include the rue anemone, jack-in-the-pulpit, spring beauty, cutleaf toothwort, pretty bedstraw, mayapple, false Solomon's seal and wild ginger.

Generalized Maps of forest associations do not account for smaller areas of different vegetation. Due to the setting the project area would have also contained areas of flood plain forest and prairie. A survey of 56 lowland forest stands along the Wabash and Tippecanoe Rivers found the following species dominant: black willow, silver maple, American elm, and cottonwood (Petty and Jackson 1966: 276). On less frequently flooded second bottoms there is a shift toward species which are less water tolerant, but more shade tolerant consisting of the dominant hard maple and beech forest with sub-dominant American elm, hackberry, cork elm, Ohio buckeye and slippery elm (Petty and Jackson 1966: 277). Beech and tulip poplar would have been important in floodplain forests in prehistoric times, but are now absent due to the clearing of the forests for agriculture and more widely fluctuating stream levels (Petty and Jackson 1966: 277).

Fauna

The animals living in Indiana would have changed from the end of the Pleistocene through Holocene times. Various Pleistocene age fauna have been found in Indiana. Early twentieth century accounts list bison, giant beaver, caribou, Virginia deer, dire wolf, wapiti, horse, mammoth, mastodon, musk-ox, peccary, sloth and perhaps moose (Moodie 1929, Lyon 1936). More recent investigations have expanded this list to include moose, caribou, black bear, giant short-face bear, giant tortoise, white-tailed deer, Canadian goose, armadillo, jaguar, sabertooth tiger and camel (Richards 1984).

In 1816, an estimated 66 species of mammals were present in Indiana (Mumford 1966: 475). Some of the common mammals found in Indiana include opossum, eastern cottontail, eastern chipmunk, white-tailed deer, beaver, deer mouse, white-footed mouse, meadow vole, pine vole, muskrat, southern bog lemming, Norway rat, coyote, red fox, gray fox, raccoon, long-tailed weasel, various species of squirrels, mice and shrews. Twelve species are listed as exterminated from Indiana and include bison, wapiti, porcupine, gray wolf, red wolf, black bear, fisher, eastern spotted skunk, wolverine, river otter, mountain lion and lynx (Mumford 1966: 475).

Historic sources also report a large variety of other fauna in Indiana. Webster (1966:455-473) identifies 366 species of birds. A total of 177 fish have been identified in the state (Gammon and Gerking 1966:401-425). Approximately 200 species of mollusks and 400 species of crustaceans occurred in Indiana waters. Approximately 82 species of amphibians and snakes have been identified (Milton 1966: 426-451). The species can be subdivided into 19 species of salamanders, 2 species of toads, 11 species of frogs, 6 types of lizards, some 30 types of snakes, and 14 turtle varieties (Milton 1966: 426-451).

Summary

As the ecological and natural setting of the project area changed and evolved over the last several thousand years, human settlement would also have changed. Settlement and use of resources within the project area would have been influenced by potential plant and animal resources and, conversely, may have influenced changes in flora and fauna (Delcourt and Delcourt 1991: 87-89). The diversity of habitats that existed in the project area would have attracted prehistoric populations for the wide variety of natural resources available as food and raw materials in the production of tools, clothing, adornment and shelter.

Archaeological Background

In this section we review the archaeological background that is relevant to the project area. Specifically, we reviewed the background information for data relevant to an understanding of what archeological resources we should expect to find during this investigation, both in terms of the types and densities of archaeological data, as well as the history of the landscape. A records review was conducted at DHPA by Rachel Klabacka on May 7 and 20, 2008. Prior to the current survey more than 875 sites (Appendix A) have been recorded within one mile of the research universe, summaries of site components and projectile points recovered from the area are presented in Tables 3, 4 and 5.

Table 3. Site Components Recorded Within One Mile		
Component	No.	Comments
Unidentified Prehistoric	681	64 multicomponent
Paleoindian	15	8 multicomponent
Early Paleoindian	2	1 multicomponent
Late Paleoindian	7	6 multicomponent
Archaic	45	29 multicomponent
Early Archaic	38	23 multicomponent
Middle Archaic	34	34 multicomponent
Late Archaic	62	39 multicomponent
Terminal Late Archaic	1	1 multicomponent
Woodland	25	16 multicomponent
Early Woodland	15	11 multicomponent
Middle Woodland	10	9 multicomponent
Late Woodland	38	23 multicomponent
Late Prehistoric / Mississippian	3	3 multicomponent
Historic	121	66 multicomponent

Table 4. Site Types Recorded Within One Mile			
Prehistoric Types	No.	Historic Types	No.
Scatter / Camps	636	Scatter / Dump	64
Isolated Finds	200	House / Cabin / Farmstead Foundation	10
Mound	1	Cemetery	2
Undetermined	4	Town / Village	6
		Agricultural Field / Improvements	22
		Mill	2
		Trading Post	1
		Sugar Camp	4
		Ferry	1

Table 5. Previously Documented Points Within One Mile of the Upper Wabash River Valley	
Cultural Period	Projectile Point Types
Paleoindian	Agate Basin, Fluted "PaleoIndian" Point, Unfluted "PaleoIndian" Point
Late Paleoindian	Hi-Lo, Holcombe, Unclassified Plano Lancelot
Early Archaic	Amos, Bifurcate, Big Sandy, Charleston, Kanawha, Kirk corner notched, Lost Lake, MacCorkle, Otter Creek, St. Albans side notched, St. Charles, Thebes, Wabash diagonal notched, Unclassified diagonal notched, Unclassified side notched
Middle Archaic	Godar, Raddatz
Late Archaic	Brewerton side notched, Lamoka, Matanzas, McWhinney, Motley, Normanskill, Riverton, Table Rock, Unclassified corner notched
Late Archaic / Early Woodland	Ashtabula, Kramer
Early Woodland	Adena
Middle Woodland	Affinis Snyders, Snyders, Lowe, Steuben
Late Woodland	Jack's Reef, Triangular Cluster

Archaeological investigations in the Upper Wabash River valley have been predominantly oriented toward surface surveys and only a small percentage of sites have been tested or excavated. Major surveys have been conducted within and around the current research universe and include portions of the drainage basins of the Maumee, Mississinewa, Salamonie and Wabash Rivers. The major surveys performed within the region consist of a survey of the Mississinewa Reservoir (Wepler 1982), a survey of the Salamonie Reservoir (Wepler and Cochran 1982), two surveys of the Huntington Reservoir (Wepler and Cochran 1983a, 1983b), a survey of Miami occupations (Wepler 1984), an archaeological survey of the Upper Wabash River drainage (Cochran and Anuszyk 1984), an archaeological survey of the Wabash Moraine (Cochran and Buehrig 1985), a survey of Paleo-Indian and Early Archaic sites (Holstein and Cochran 1986), surveys in the Maumee drainage basin (Jeske 1992, 1996), and two surveys of Paleo-Indian sites within Northeastern Indiana (White 2005, 2006). Excavations within the region but outside of the current research universe that have been performed consist of an archaeological assessment of a portion of Fox Island County Park (Cochran 1980), archaeological investigations at the Peru Industrial Park (Burkett et al. 1984), the All Seasons Site (Cochran 1986), and mitigation of three multicomponent sites in the Upper Wabash, Cass County (Angst 1997). Larger contract oriented work within the survey area includes excavations at the Richardville/LaFontaine house (Cochran 1990), excavations at the Diefenbaugh site (Bamann and Baldry), a survey of a corridor through Wabash and Huntington counties for the relocation of US 24 (Zoll et al. 1991), and excavations at the former Richardville/LaFontaine house (Zoll et al. 2000).

Culture History

The natural setting of the Upper Wabash River valley demonstrates a hospitable environment following the retreat of the glaciers. Sites and site components indicate that Native Americans have inhabited the region from the Paleo-Indian period through the historic period. The most frequently identified cultural affiliation has been Late Archaic followed by the Early Archaic and Late Woodland periods.

Paleo-Indian cultures entered Indiana as the Wisconsin glacial began retreating to the north circa 12,000 to 10,000 BP. Paleoindian sites are generally small surface scatters resulting from small family bands wandering over large territories in search of game animals that may have included Pleistocene mega fauna. While Paleo-Indian sites are found predominately in upland areas, of the 24 sites discovered within one mile of the Upper Wabash River valley, 12 sites are located on the floodplain. The defining artifacts from this time period are the lanceolate point forms including fluted Clovis points and unfluted Agate Basin, Hi-Lo, Holcombe, Plainview and Dalton points. No Paleo-Indian sites with *in situ* deposits have been excavated within the Upper Wabash River valley region.

During the Early Archaic (10,000-8,000 BP), people were adapting to a warming environment that changed floral and faunal resources in the region. As the large megafauna became extinct, forests were becoming more diversified with deciduous species and a profusion of vegetation covering the landscape. Early Archaic sites may be larger than previous Paleo-Indian sites, but data for the Upper Wabash River valley does not confirm this. Early Archaic sites are found on almost every land form and Early Archaic point styles are one of the second most frequently found in the region. Technological changes are displayed in a larger diversity of projectile points with new hafting techniques. Point forms such as Big Sandy, Lost Lake, Charleston, St. Charles, Thebes, Kirk, MacCorkle, St. Albans, Amos, Kanawha and Wabash diagonal points have been reported from the Upper Wabash River valley. Ground stone tools make their first appearance during this time.

Throughout the Middle Archaic (8,000 to 5,000 BP) the climate of the Midwest continued to become warmer and dryer. Resource availability changed as the climate shifted and prehistoric cultures continued to adapt. More residential stability and a broader food base are supposed to occur during the Middle Archaic. However, relatively few sites dating to the Middle Archaic have been discovered in this region when compared to the number of Early and Late Archaic sites discovered. Middle Archaic sites are found in the valley and valley edge setting with supposed decreased emphasis on the uplands. Point styles from this period found in this region

are limited; consisting of Raddatz, Godar, Stanley and at the transition from Middle Archaic to Late Archaic the Matanzas. Ground stone tools were more varied during this time period.

With the Late Archaic (5,000 to 3,000 BP), the environment stabilizes to the climatic conditions and deciduous forests encountered by Historic Euro-Americans. Late Archaic artifacts are the most frequently encountered in this region and occur across the landscape. While Late Archaic sites are some of the largest in the region, they are often multicomponent. The exact nature of Late Archaic settlement is unclear, although seasonal, scheduled occupations are suspected. The economy appears to have been diffuse and includes some cultivation of native plants. The high frequency of these sites has led some to conclude that populations increased. Trade networks are more visible than in previous periods with the occurrence of copper and marine shell. Ground stone artifacts such as pestles, axes, adzes, celts, bannerstones and gorgets are prominent during this period. Diagnostic projectile points from the region include: Matanzas, Late Archaic Stemmed, McWhinney, Lamoka, Table Rock, Brewerton, Riverton, Karnak, Motley, and Turkey Tail. The worked bone industry seems more elaborate. Cultures, phases or foci from this period include French Lick, Maple Creek, Glacial Kame and Riverton.

Early Woodland period (3,000 to 2,200 BP) is marked by the introduction of pottery. Early Woodland habitation is identified infrequently in the region, only 15 of the 898 sites discovered within one mile of the project area have a reported Early Woodland component. Hunting, gathering and limited horticulture continued during this period. Early Woodland ceramics found in Fox Island, Allen County, are defined as Marion Thick (Cochran 1980). Diagnostic points from this time period include Motley, Dickson, Kramer, Cresap, Adena and Robbins. Archaeological units that may occur in the area are Marion and Adena. No Early Woodland habitations have been excavated in the area.

The Middle Woodland period (2,200 to 1,400 BP) demonstrates a marked similarity in habitation to the Early Woodland. Similar to Early Woodland, Middle Woodland sites are identified infrequently in the region. The economy continued to focus on hunting, gathering and limited horticulture, but maize is introduced during this time. Exotic goods are frequently found at the ceremonial sites and demonstrated an expansion of trade networks. Diagnostic lithics include Snyder's, Lowe, Chesser, and Steuben Points and lamellar bladelets. Regional archaeological units that may occur are Adena and Scioto. Middle Woodland sites excavated along the Upper Wabash River valley consist of the Redman site (12-Mi-224) and the All Seasons site (12-Mi-225). At the All Season site a Chesser point, two Snyder points and a bladelet were recovered (Burkett et al 1984). No diagnostic Middle Woodland Ceramics have been recovered for the Upper Wabash River valley. While Mound building reached its peak during this period, the region lacks evidence of widespread Middle Woodland mound building. Mounds recognized within the project area consist of the Late Middle Woodland to Early Late Woodland Big Bangs and Little Bangs mounds.

The Late Woodland period (1,400 to 800 BP) sites occur in the third highest frequency in the region. Mounds that have been discovered within the project area dating to the Late Woodland consist of the Big Bangs and Little Bangs mounds within Huntington County. The bow and arrow was introduced and the cultivation of domestic crops rises in importance. Maize becomes an important addition to the diet. Pottery is rarely found on sites within the Upper Wabash drainage and it is even more rare outside of the floodplain. Ceramic styles found in the region are limited to Moccasin Bluff Cordmarked pottery from the All Seasons site (Cochran 1986). Pottery found at other sites within the region is often found without decorative motifs and is dated to the Late Woodland based on the type of temper. Diagnostic lithics include Lowe, Steuben, Raccoon Side Notched, Jack's Reef Corner Notched and Pentagonal, and Triangular Cluster points. Archaeological Phases recognized in the region included Intrusive Mound and Albee.

The Late Prehistoric period (1000 to 300 BP) shares the traits of the Late Woodland but shows adaptations to a more focused economy based on corn horticulture. Village sites with segregated activity areas and palisades occur. Along with maize horticulture, beans and squash also become important and the cultivation of native crops declines. Triangular points are the only projectile form used. The only regional archaeological units recognized from the period is the Younge phase (Cochran 1983).

At the later end of the Late Woodland/Prehistoric period, much of Indiana was reportedly depopulated. Contact with Europeans that resulted in epidemic diseases and warfare associated with the fur trade are believed to be key factors in the abandonment of the region. By the late 1700s, several Historic Native Americans tribes were reported in Indiana. Within the Upper Wabash River valley region Native American tribes reported to be living in the area consist of the Wea/Miami, Potawatomie, Kickapoo, Shawnee, Wyandotte, and Delaware (Adderley 1997, Cantin 1995, DeRegnaucourt 1985, Tanner 1987). In the early 1800's Native Americans inhabiting Indiana began to cede their land rights and moved to reserves within the state or were moved west. This pattern continued until 1840 when all commonly held reserve lands had been ceded and Indiana was open for Euro-American Settlement.

The reserve system within Indiana for the Miami began with the Greenville Treaty in 1795. Additional cessions of land through much of the state concentrated the Miami common holdings to the southern banks of the Wabash River. The last of the tribal common holdings was sold in 1840 (Rafert 1996: 99). Most of the Miami on common lands were moved west at this point, although many remained on privately held land. The majority of the private land held by Miami at this point belonged to the major principal chiefs including Richardville, LaFontaine and Godfroy (Rafert 1996: 100).

Historic

The first Euro-Americans to make their way to the Upper Wabash River Region were French explorers and fur trappers. Jeremiah Cox is the first recorded Euro-American settler within the area, purchasing the first land parcel within the area now known as Wabash County in 1827 (Ridenour 1982:xviii). The Wabash River drew both Native Americans and Euro-Americans due to its use as a transportation and trade route and the abundant natural resources found along the floodplains and uplands. Several historic Native American villages are recorded within the General Land Office (GLO) notes. Trade between Native American and Europeans thrived in this area, as evinced by 12-Hu-1022 and the Aussom Cabin site (Mann 1996, Bubb 2005). Beginning with the Treaty of Greenville in 1795, several treaties signed by historic tribes of the area ceded the land of the Upper Wabash drainage to the United States Government. In accordance with the treaty agreements several areas along the river were designated reservation lands, but by the 1840s all the land along the river was United States Property and open for Euro-American settlement (Ridenour 1982: xviii). In 1832, work began on the Wabash and Erie Canal, beginning in Fort Wayne extending down to the Ohio River and creating a shipping route from the great lakes to the Ohio River. Many small towns, such as Peru, Richvalley, and Huntington, found along the Upper Wabash River banks grew as the canal laborers settled in the area (Bodurtha 1914, Bash 1914, Robertson 1976).

The area of the current town of Peru, Miami County, was originally part of a Miami Indian reservation owned by John B. Richardville, a prominent Miami chief. In August of 1827, Richardville sold the land to a Euro-American by the name of Joseph Holman for \$500 worth of cash and trade, a considerably lower price than the land was worth (Bodurtha 1914: 362). Unlike many towns and cities, Peru was laid out in a systematic plan in order to take advantage of the economic opportunities that the Wabash and Erie Canal would bring with, “large [lots], and a market with public squares.” (Bodurtha 1914: 362). Francis Godfroy, the last chief of the Miami Nation, is buried just to the east of Peru in Butler Township (Bodurtha 1914: 365).

The town of Richvalley, Wabash County, had a very different history, it began with the building of a sawmill and blacksmith shop within the Big Miami Reservation. After the War of 1812 the Miami Indians ceded land within Indiana to the US government with the Treaty of St Mary’s in 1818. As part of the Treaty agreement several areas along the Wabash became Native American reservations and a sawmill and blacksmith shop were to be built within the 900 acre Big Miami Reservation. The mill and shop were built in 1820 and was operated by Lewis Day. In 1826 the 900 acres of the Big Miami Reservation was ceded to the US government with the Treaty of Paradise Springs. With the land open to Euro-American settlement and the Wabash and Erie Canal Project, the town of Richvalley grew (Robertson 1976: 27).

The area now known as the town of Huntington, Huntington County, has a long history and prehistory. The area had long been a favorite meeting place for Native American groups, often holding large council meetings at the site. This was a well known fact and in 1805 a small colony of Quakers came to the area, approximately two miles west of Huntington, in order to convert Native Americans to Christianity (Bash 1914: 69). In 1826 the initial surveyors of the Wabash and Erie Canal reported two brothers living in the area, Champion and Joel Harvey, the first Euro-Americans to have settled in the area (Bash 1914: 131-132). With the construction of the Wabash and Erie Canal the town's residence grew (Bash 1914: 134).

ARCHAEOLOGICAL SURVEY

Introduction

Approximately 791 acres (320 hectares) of agricultural land were surveyed by pedestrian transects during this project. The survey sampled 496.1 acres (200.7 hectares) of floodplain, 143.5 acres (58.1 hectares) of outwash terrace, 118 acres (47.8 hectares) of till plain, 21.3 acres (8.6 hectares) of lake plain, 6.5 acres (2.6 hectares) of Peat and 6.9 acres (2.8 hectares) of eolian soils. The survey documented 467 new archaeological sites and recovered 10, 237 prehistoric artifacts and 556 historic artifacts. The results are discussed by survey area below.

Methods

Field Survey

For this project, 900 acres of pedestrian survey were proposed. It was anticipated that by surveying 900 acres approximately 400 to 450 new sites would be discovered to increase the existing site database. Planning projected that different landforms and environmental zones consisting of different valley zones such as sluiceway, outwash terrace, recent river terrace, prairie and floodplain would be systematically surveyed. Areas were selected for survey using aerial maps and soils information and historic sources. The survey was constructed to sample different regions within the project area, but with an emphasis on areas deemed threatened by gravel operations. Cultivated fields with optimal visibility were sought for survey; however, no-till fields with greater than 30% visibility were also utilized. Ultimately, landowner permission dictated the areas sampled by this survey.

This project was conducted by ARMS personnel and Ball State University students. The investigations were authorized under DHPA approved plan #2008026. The survey was conducted between May 13, 2008 and March 20, 2009. The field survey was executed using pedestrian transects spaced at 10 meter intervals. The survey interval was reduced to 5 meters when artifacts were encountered. The areas surveyed by pedestrian transects had between 55 and 95% ground surface visibility. All artifacts, excluding fire-cracked rock and brick, were collected and bagged by site specific provenience. Fire-cracked rocks and bricks were counted in the field, but were not collected. Artifact locations were assigned temporary site numbers and recorded on aerial photos of the area. The site coordinates were collected with a Sokkia Axis³ GPS, Trimble GeoXT GeoExplorer 2008 Series GPS or Magellen handheld GPS units using NAD 1983. Field notes were maintained by the author and the crew.

Laboratory

All artifacts were taken to the ARMS laboratory for processing, identification, analysis and temporary curation. Artifacts were cleaned, classified and catalogued. Definitions used for classifying prehistoric lithic materials were included in Appendix B. Diagnostic point types were classified using Justice (1987). Metrical attributes and raw material identifications were recorded as appropriate (Appendix C). Lithic raw materials were identified by comparison with reference samples and published descriptions on file in the ARMS laboratory (Cantin 2005). All artifact and chert identifications were made microscopically at 10X or greater. Historic artifacts were identified and dated using several references (Feldhues 1995, Fike 1984, IMACS 1984, Loftstrom et al. 1982, Majewski and O'Brien 1987, Miller 1995, Nelson 1964, Newman 1970, ODOT 1991). Notes, maps and photographs were reviewed and prepared for illustration and curation. State site numbers were obtained and a DHPA Sites and Structures Inventory form was entered in SHAARD for each site identified during the project.

All materials generated by this project were accessioned under # 08.37. Artifacts were either curated at Ball State or returned to the landowner after documentation. When artifacts were returned to the landowners, they were identified, analyzed, and photographed per DHPA guidelines. Appendix D lists the collections that were returned and those that were curated at Ball State.

RESULTS

Survey Area 1

Survey Area 1 was located at the junction of the Eight Mile Creek and Little River floodplains in Jackson Township in Section 24, Township 29 North, Range 10 East as shown on the USGS 7.5' Zanesville Quadrangle (Figure 6). The area surveyed is along the southwest side of the Eight Mile Creek. The property was surveyed on June 18th and 19th, 2008. Ground surface visibility was approximately 75%. The field had been recently planted in corn that was approximately 45 cm tall. One small portion of the property along the northwest boundary line had been planted in beans approximately 10 m wide. Approximately 50.6 acres were surveyed consisting of 1.3 acres of floodplain 11.5 acres of outwash terrace and 39.1 acres of upland till plain. The area contained Blount (BcB2), Eel (Ee), Glynwood (GlB2), Martinsville (McA), Morley (MxC2, MxE2), Pewamo (Pg), and Rensselaer (Rk) soils. Thirty-nine sites were encountered during the survey. The sites ranged in size from prehistoric isolated finds to a lithic scatter 3,814 m² (0.9 acres) in size. Components identified in the sites included Early Archaic, Late Archaic and Historic.

Sites Locations Confidential

Not for Public Disclosure

Figure 6. A portion of the USGS 7.5' Zanesville, Indiana Quadrangle showing the location of Survey Area 1.

Artifacts

A total of 469 artifacts and 193 fire-cracked rocks were encountered in Survey Area 1. Table 6 provides a list of the artifacts recovered by category. Artifacts are listed by individual site in Appendix E. Only a few of the artifacts recovered were diagnostic of a particular time frame.

Table 6. Artifacts from Survey Area 1			
Category	No.	Category	No.
Biface	1	Stage 3 biface	3
Biface fragment	2	Stage 4 biface	1
Bipolar	6	Unidentified point fragment	1
Block Flake	5	Unmodified flake	406
Core	11	Container glass, green	1
Edge modified flake	20	Flow blue whiteware body	1
Endscraper	1	Whiteware Body	3
Graver	1	Kirk Corner Notched	1
Other chipped stone	2	Brewerton	1
Stage 2 biface	2		

One artifact was recovered from the Early Archaic period, one from the Late Archaic period, and five from the Historic period (Figure 7). A Kirk Corner Notched point was recovered from site 12-Hu-1263 and manufactured from Liston Creek chert. Kirk Corner Notched points date to approximately 7500 to 6900 BC (Justice 1987: 71). A Brewerton Corner Notched point was recovered from site 12-Hu-1260 and manufactured from Liston Creek chert. Brewerton Corner Notched points date to approximately 2980 to 1723 BC (Justice 1987: 115). A flow blue whiteware body sherd was recovered from site 12-Hu-1285 and was manufactured between 1820 and 1860 (Majewski and O'Brien 1987: 152).

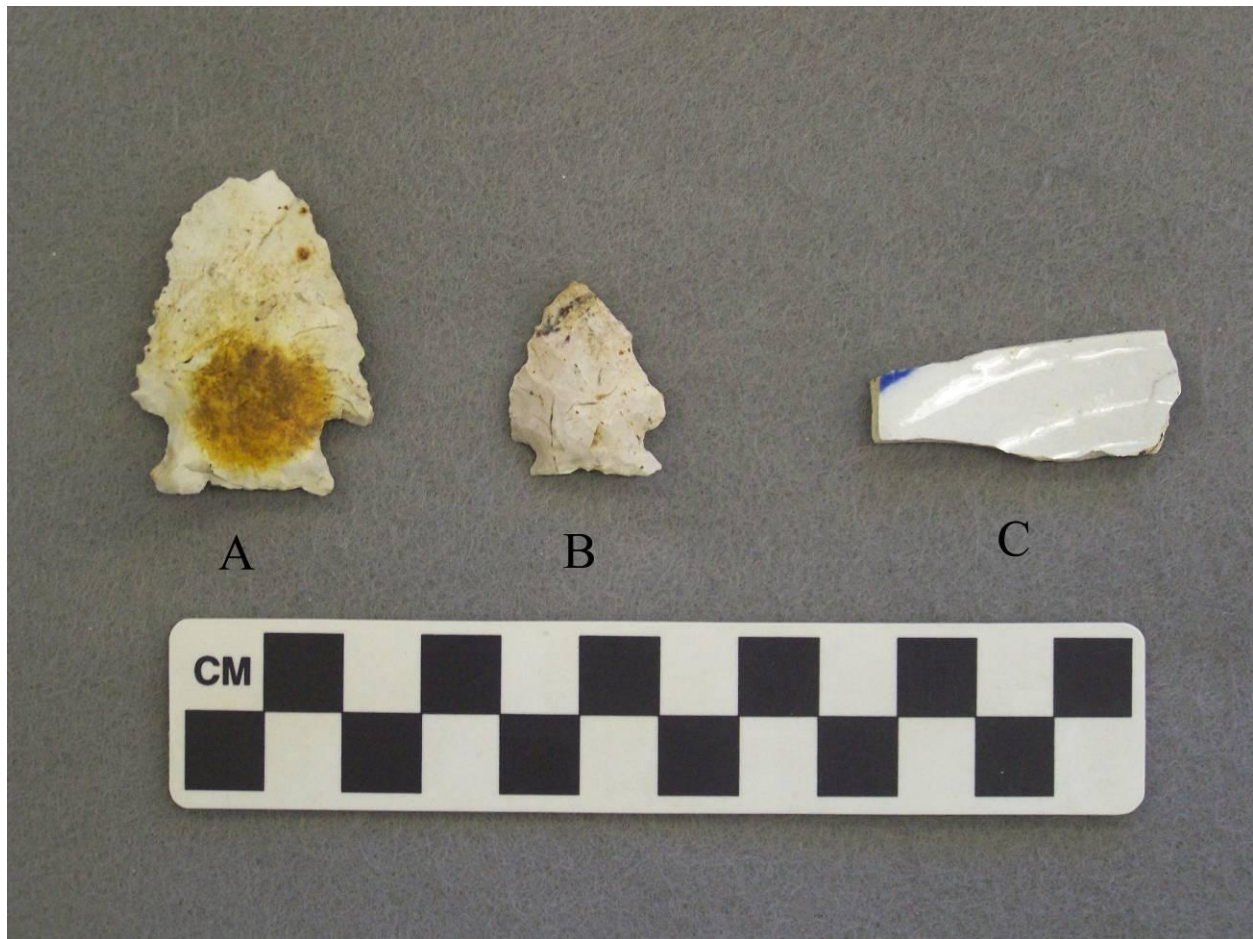


Figure 7. Diagnostic artifacts from Survey Area 1: a) Kirk Corner Notched Point (12-Hu-1263) b) Brewerton Corner Notched point (12-Hu-1260), and c) Flow Blue whiteware (12-Hu-1285).

Sites

Thirty-nine archaeological sites, 12-Hu-1260 to 1298, were recorded in Survey Area 1 (Figures 8, 9). Summaries for the individual sites are contained in Appendix F. Thirty-six of the sites had unidentified prehistoric components (12-Hu-1261 to 1262, 1264 to 1284, 12-Hu-1286 to 1298), one site had an Early Archaic component (12-Hu-1263), one site had a Late Archaic component (12-Hu-1260), and one site had a Historic component (12-Hu-1285). Eleven of the sites were isolated finds (12-Hu-1266, 1269, 1280, 1284, 1287, 1289 to 1291, 1294, 1295, 1297) and twenty-seven sites were lithic scatters (12-Hu-1260 to 1265, 1267, 1268, 1270 to 1279, 1282, 1283, 1285, 1286, 1288, 1290, 1292, 1293, 1296, 1298).

Sites Locations Confidential

Not for Public Disclosure

Figure 8. A portion of the USGS 7.5' Zanesville, Indiana Quadrangle showing the location of sites 12-Hu-1260 to 1298.

Sites Locations Confidential

Not for Public Disclosure

Figure 9. 2005 aerial showing the location of sites 12-Hu-1260 to 1298.

The sites were found on all landforms present in the survey area. Nine sites were discovered on outwash terrace; seven on Martinsville soils (12-Hu-1265 to 1270, 1289), two on Rensselaer soils (12-Hu-1263, 1264). Twenty-six sites were discovered on the upland till plain; twenty-four on Morley soils (12-Hu-1272 to 1282, 1284 to 1295, 1298), one on Blount soils (12-Hu-1297) and one that covered both Morley and Blount soils (12-Hu-1296). Three sites (12-Hu-1260 to 1262) encompassed both outwash terrace and floodplain on Martinsville, Rensselaer and Eel soils. One site (12-Hu-1271) encompassed both outwash and till plain on Martinsville and Morley soils. All sites that encompassed multiple zones were lithic scatters. Seven sites in the outwash terrace were lithic scatters (12-Hu-1263 to 1270) and two were isolated finds (12-Hu-1266, 1269). Seventeen sites in the upland till plain were lithic scatters (12-Hu-1272 to 1279, 1281, 1282, 1285¹, 1286, 1288, 1292, 1293, 1296, 1298) and nine were isolates (12-Hu-1280, 1284, 1287, 1289 to 1291, 1294, 1295, 1297).

Due to the low number of artifacts on many of the sites within the project area, and the eroded nature of soils, many sites were determined not to qualify for listing on the State or National Registers. Multiple sites within Survey Area 1 were considered potentially eligible for listing on the State and/or National Registers. These sites are 12-Hu-1260, 1262 and 1270.

Site 12-Hu-1260 contained a high density of artifacts including a Late Archaic component and the assemblage contained exotic cherts including Upper Mercer and Attica. Site 12-Hu-1262 also contained a high density of artifacts and a moderately high concentration of fire-cracked rock (n=40). Site 12-Hu-1270 did not contain a large amount of chipped stone artifacts (n=32) but did contain a very large amount of fire-cracked rock (n=125+). A Phase II investigation to determine State and National Register eligibility are recommended for sites 12-Hu-1260, 1262 and 1270.

Density

Survey Area 1 consisted of approximately 11.5 acres of outwash terrace, 1.3 acres of floodplain and 39.1 acres of upland till plain. Within Survey Area 1, a density of one prehistoric site per 1.0 acres occurred on outwash terrace and covered 14.1% of the surface area, one prehistoric site per 0.9 acres occurred within the floodplain and covered 61.9% of the surface area and one prehistoric site per 1.5 acres occurred on the upland till plain and covered 5.6% of the surface area. An overall density of prehistoric sites within Survey Area 1 was one site per 1.3 acres. While the density of sites within the floodplain was only slightly higher than on the outwash terrace the utilized portion of the landscape is much greater.

¹ Historic scatter

Survey Area 2

Survey Area 2 was located at the edge of a dried up Pleistocene lake bed in Union Township in Section 23, Township 28 North, Range 10 East as shown on the USGS 7.5' Markle Quadrangle (Figure 10). The property was surveyed on June 18th, 2008. Ground surface visibility was approximately 90%. The field had been recently planted in corn that was approximately 50 cm tall. At the time of survey the soil was very dry. Approximately 66.6 acres were surveyed consisting of 63.5 acres of upland till plain and 3.1 acres of lake plain. The area contained Blount (BcB2), Pewamo (Pg) and Patton (Pe) soils. Seventeen sites were encountered during the survey. The sites ranged in size from prehistoric isolated finds to a lithic scatter 783 m² (0.2 acres) in size. Components identified in the sites included Middle Archaic and Historic.

Sites Locations Confidential

Not for Public Disclosure

Figure 10. A portion of the USGS 7.5' Markle and Majenica, Indiana Quadrangles showing the location of Survey Area 2.

Artifacts

A total of 58 artifacts and 33 fire-cracked rocks were encountered in Survey Area 2. Table 7 provides a list of the artifacts recovered by category. Artifacts are listed by individual site in Appendix E. Only a few of the artifacts recovered were diagnostic of a particular time frame.

Table 7. Artifacts from Survey Area 2			
Category	No.	Category	No.
Edge modified flake	2	Whiteware	11
Stage 2 biface	1	Stoneware	7
Unidentified point fragment	2	Yellowware	3
Unmodified flake	19	Shell edge blue whiteware	1
Other chipped stone (possible adze preform)	1	Blue transferprint whiteware	1
Raddatz Side Notched point	1	Amethyst glass	1
Square nail	1	Aqua glass	6
Porcelain doll leg	1		

One artifact was recovered from the Middle Archaic period, and five from the Historic period (Figures 11, 12). A Raddatz side notched point was recovered from site 12-Hu-1305 and manufactured from Liston Creek chert. Raddatz side notched points date to approximately 6000 to 3000 BC (Justice 1987: 68). Historic artifacts included shell edge blue whiteware, blue transferprint, amethyst glass, aqua glass and yellowware. Shell edge blue whiteware was manufactured between 1820 and 1860 (Majewski and O'Brien 1987: 152). Blue transferprint was manufactured between 1830 and 1860 (Lofstrom et al. 1982: 14). Yellowware was manufactured between 1830 and 1900 (Stelle 2001).



Figure 11. Diagnostic prehistoric artifacts from Survey Area 2: a) Raddatz side notched (12-Hu-1305) b) possible Adze preform (12-Hu-1308).

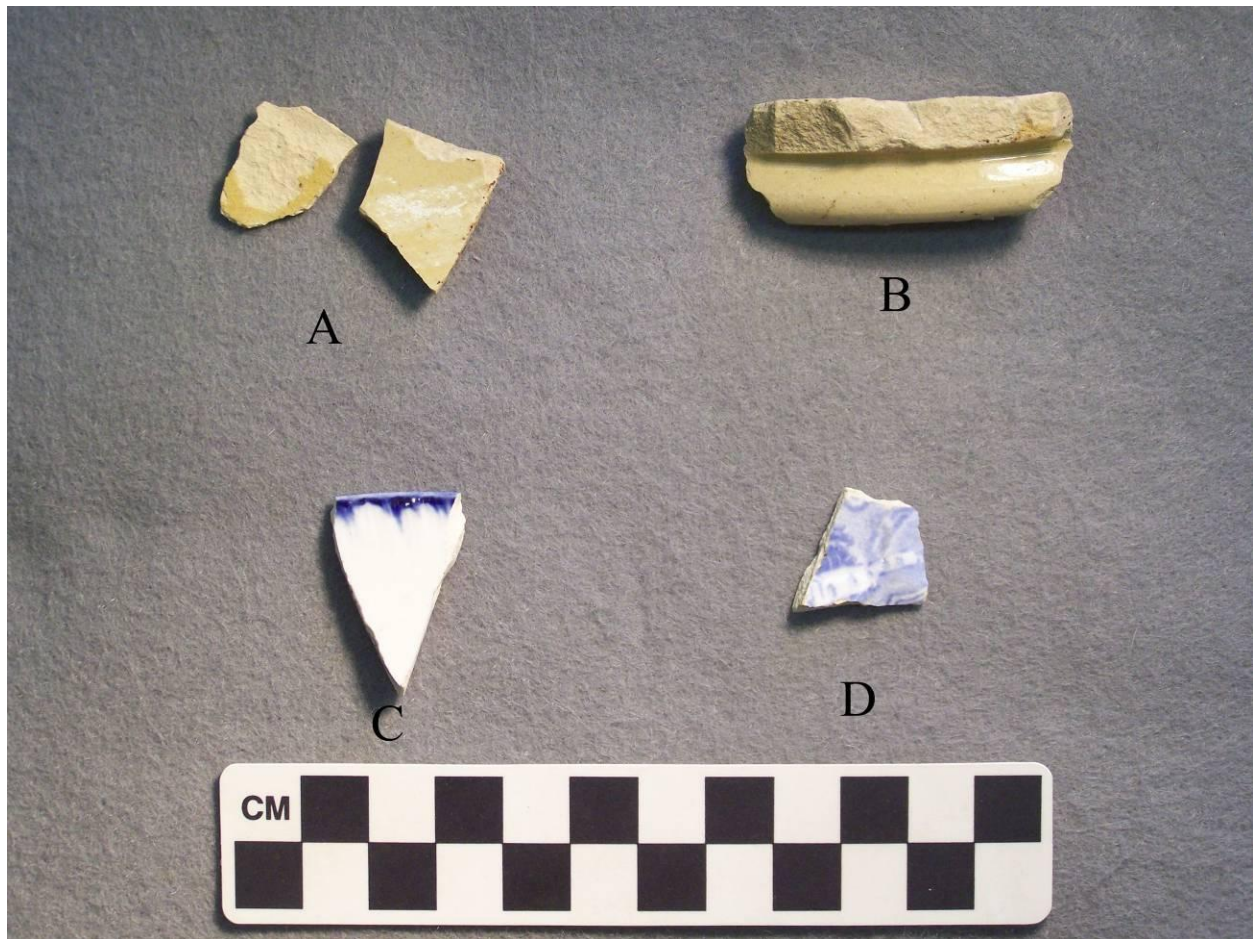


Figure 12. Diagnostic historic artifacts from Survey Area 2, Site 12-Hu-1299: a, b) Yellowware c) Shell edge blue whiteware, d) Blue transferprint whiteware.

Sites

Seventeen archaeological sites, 12-Hu-1299 to 1315, were recorded in Survey Area 2 (Figures 13, 14). Summaries for the individual sites are contained in Appendix F. Fifteen of the sites had unidentified prehistoric components (12-Hu-1300 to 1304, 1306 to 1315), one site had a Middle Archaic component (12-Hu-1305), and one site had a Historic component (12-Hu-1299). Eleven of the sites were isolated finds (12-Hu-300, 1302 to 1305, 1307, 1309 to 1310, 1312, 1314 to 1315) and six sites were lithic scatters (12-Hu-1299, 1301, 1306, 1308, 1311, 1313).

Sites Locations Confidential

Not for Public Disclosure

Figure 13. A portion of the USGS 7.5' Markle, Indiana Quadrangle showing the location of sites 12-Hu-1299 to 1315.

Sites Locations Confidential

Not for Public Disclosure

Figure 14. 2005 aerial showing the location of sites 12-Hu-1299 to 1315.

The sites were found on all landforms present in the survey area. Sixteen sites were discovered on upland till plain; nine on Blount soils (12-Hu-1299 to 1303, 1305, 1308, 1311 to 1312), and five on Pewamo soils (12-Hu-1304, 1307, 1309 to 1310, 1314 to 1315). One site was discovered on the lake plain on Patton soils (12-Hu-1306). One site in the lake plain was a lithic scatter (12-Hu-1306). Eleven of the sites on the upland till plain were isolated finds (12-Hu-300, 1302 to 1305, 1307, 1309 to 1310, 1312, 1314 to 1315) and five sites were lithic scatters (12-Hu-1299, 1301, 1308, 1311, 1313).

Due to the low number of artifacts on many of the sites within the project area, and the eroded nature of soils, none of the sites were determined to qualify for listing on the State or National Registers.

Density

Survey Area 2 consisted of approximately 66.6 acres consisting of 63.5 acres of upland till plain and 3.1 acres of lake plain. Within Survey Area 2, a density of one site per 4.2 acres occurred on upland till plain and covered 0.6% of the surface area, one site per 3.1 acres occurred within the lake plain and covered 1.1% of the surface area. An overall density of sites within Survey Area 1 was one site per 4.2 acres.

Survey Area 3

Survey Area 3 was located in the uplands at the southern edge of the Little River floodplain in Jackson Township in Reserve 42, Township 29 North, Range 10 East as shown on the USGS 7.5' Zanesville Quadrangle (Figure 15). The property was surveyed on June 18th and 19th, 2008. Ground surface visibility was approximately 55%. The field was covered in bean stubble. Approximately 15.4 acres were surveyed all of which was upland till plain. The area contained Blount (BcB2) and Pewamo (Pg) soils. Seven sites were encountered during the survey. The sites ranged in size from prehistoric isolated finds to a lithic scatter 578 m² (0.1 acres) in size. No diagnostic artifacts were recovered in this survey area.

Sites Locations Confidential

Not for Public Disclosure

Figure 15. A portion of the USGS 7.5' Zanesville, Indiana Quadrangle showing the location of Survey Area 3.

Artifacts

A total of 27 artifacts and 18 fire-cracked rocks were encountered in Survey Area 3. Table 8 provides a list of the artifacts recovered by category. Artifacts are listed by individual site in Appendix E. None of the artifacts recovered were diagnostic of a particular time frame.

Table 8. Artifacts from Survey Area 3			
Category	No.	Category	No.
Biface fragment	1	Other chipped stone	1
Cobble, unmodified	1	Stage 3 biface	1
Core	2	Unidentified point fragment	1
Edge modified flake	2	Unmodified flake	18

Sites

Seven archaeological sites, 12-Hu-1316 to 1322, were recorded in Survey Area 3 (Figures 16, 17). Summaries for the individual sites are contained in Appendix F. All of the sites had unidentified prehistoric components. Four of the sites were isolated finds (12-Hu-1319 to 1322) and three sites were lithic scatters (12-Hu-1316 to 1318).

Sites Locations Confidential

Not for Public Disclosure

Figure 16. A portion of the USGS 7.5' Zanesville, Indiana Quadrangle showing the location of sites 12-Hu-1316 to 1322.

Sites Locations Confidential

Not for Public Disclosure

Figure 17. 2005 aerial showing the location of sites 12-Hu-1316 to 1322.

Five sites were found on Blount soils (12-Hu-1316, 1318 to 1319, 1321 to 1322), one on Pewamo soils (12-Hu-1320) and one that covered both Blount and Pewamo soils (12-Hu-1317).

Due to the low number of artifacts on the sites within the project area, and the eroded nature of soils, none of the sites were determined to qualify for listing on the State or National Registers.

Density

Survey Area 3 consisted of approximately 15.4 acres were surveyed all of which was upland till plain. Within Survey Area 3, a density of one prehistoric site per 2.2 acres occurred on the upland till plain and covered 1.4% of the surface area.

Survey Area 4

Survey Area 4 was located in the floodplain of the Little River in Reserve 52, Township 29 North, Range 10 East as shown on the USGS 7.5' Zanesville Quadrangle (Figure 18). Ground surface visibility was approximately 75%. The field contained bean stubble. Approximately 30.5 acres were surveyed consisting of 12.3 acres of outwash terrace and 18.2 acres of lake plain. The area contained Aptakisic (Ap), Martinsville (McA) and Patton (Pa) soils. Thirteen sites were encountered during the survey. The sites ranged in size from prehistoric isolated finds to a historic scatter 817 m² (0.2 acres) in size. Components identified in the sites included Early Archaic and Historic.

Sites Locations Confidential

Not for Public Disclosure

Figure 18. A portion of the USGS 7.5' Huntington and Zanesville, Indiana Quadrangles showing the location of Survey Area 4.

Artifacts

A total of 71 artifacts and 7 fire-cracked rocks were encountered in Survey Area 4. Table 9 provides a list of the artifacts recovered by category. Artifacts are listed by individual site in Appendix E. Only a few of the artifacts recovered were diagnostic of a particular time frame.

Table 9. Artifacts from Survey Area 4			
Category	No.	Category	No.
Biface fragment	1	Aqua container glass	4
Canning jar	2	Amethyst container glass	2
Canning lid liner	2	Core	2
Whiteware with powder blue glaze	1	Edge modified flake	3
Ceramic body	1	Stage 3 biface fragment	1
Stoneware	2	Thebes	1
Whiteware	2	Unidentified Early Archaic point fragment	1
Clear container glass	3	Unmodified flake	41
Brown container glass	2		

Two artifacts were recovered from the Early Archaic period, and twenty-one from the Historic period (Figure 19). A Thebes point was recovered from site 12-Hu-1332 and manufactured from Liston Creek chert. Thebes points date to approximately 8000 to 6000 BC (Justice 1987: 54). The historic artifacts recovered are not diagnostic and have open ended manufacture dates.

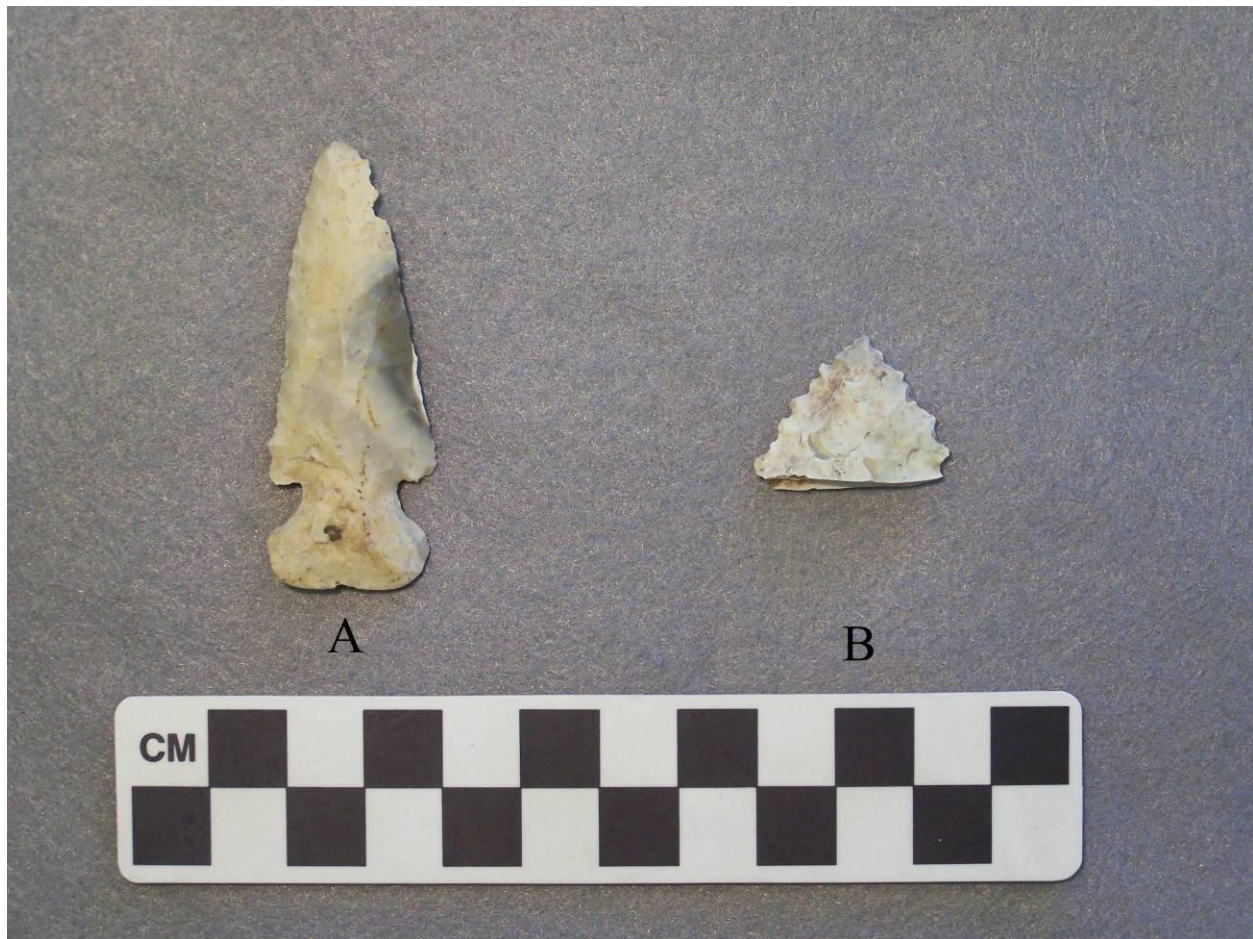


Figure 19. Diagnostic artifacts from Survey Area 4: a) Thebes point (12-Hu-1332), b) unidentified Early Archaic point (12-Hu-1335).

Sites

Thirteen archaeological sites, 12-Hu-1323 to 1335, were recorded in Survey Area 4 (Figures 20, 21). Summaries for the individual sites are contained in Appendix F. Nine had unidentified prehistoric components (12-Hu-1323, 1324, 1326, 1327, 1329 to 1331, 1333, 1334), two sites had an Early Archaic component (12-Hu-1332, 1335), and two sites had a Historic component (12-Hu-1325, 1328). Six of the sites were isolated finds (12-Hu-1323, 1324, 1329, 1332, 1333, 1335) and seven sites were lithic scatters (12-Hu-1325 to 1328, 1330, 1331, 1334).

Sites Locations Confidential

Not for Public Disclosure

Figure 20. A portion of the USGS 7.5' Huntington and Zanesville, Indiana Quadrangles showing the location of sites 12-Hu-1323 to 1335.

Sites Locations Confidential

Not for Public Disclosure

Figure 21. 2005 aerial showing the location of sites 12-Hu-1323 to 1335.

The sites were found on all landforms present in the survey area. Ten sites were discovered on outwash terrace; seven on Martinsville soils (12-Hu-1323, 1324, 1326, 1327, 1329, 1330, 1333), three on Aptakistic soils (12-Hu-1331, 1332, 1334). Three sites were discovered on lake plain on Patton soils (12-Hu-1325, 1328, 1335). Five sites in the outwash terrace were lithic scatters (12-Hu-1326, 1327, 1330, 1331, 1334) and five were isolated finds (12-Hu-1323, 1324, 1329, 1332, 1333). Two sites in the lake plain were lithic scatters (12-Hu-1325, 1328) and one was an isolate (12-Hu-1335).

Due to the low number of artifacts on all of the sites within the project area none of the sites were determined to qualify for listing on the State or National Registers.

Density

Survey Area 4 consisted of 30.5 acres consisting of 12.3 acres of outwash terrace and 18.2 acres of lake plain. Within Survey Area 4, a density of one prehistoric site per 1.2 acres occurred on outwash terrace and covered 1.6% of the surface area, one prehistoric site per 6.1 acres occurred within the lake plain and covered 1.6% of the surface. An overall density of prehistoric sites within Survey Area 4 was one site per 2.3 acres.

Survey Area 5

Survey Area 5 was located along the Wabash River west of Peru in Peru Township in Section 36, Township 27 North, Range 3 East as shown on the USGS 7.5' Onward Quadrangle (Figure 22). The area surveyed is along the north bank of the Wabash River. The property was surveyed on June 4th, 2008. Ground surface visibility was approximately 70%. The field had been recently planted in beans that were approximately 5 cm tall. Approximately 37.7 acres were surveyed consisting of 20.1 acres of floodplain 17.6 acres of outwash terrace. The area contained Gessie (Ge), Millsdale (Mm) and Milton (Mp) soils. Twenty-six sites were encountered during the survey. The sites ranged in size from prehistoric isolated finds to a lithic scatter 3,519 m² (0.9 acres) in size. Components identified in the sites included Early Archaic, Late Archaic and Historic.

Sites Locations Confidential

Not for Public Disclosure

Figure 22. A portion of the USGS 7.5' Onward and Twelve Mile, Indiana Quadrangles showing the location of Survey Area 5.

Artifacts

A total of 159 artifacts and 373 fire-cracked rocks were encountered in Survey Area 5. Table 10 provides a list of the artifacts recovered by category. Artifacts are listed by individual site in Appendix E. Only a few of the artifacts recovered were diagnostic of a particular time frame.

Table 10. Artifacts from Survey Area 5			
Category	No.	Category	No.
Amethyst container glass	3	Olive container glass	1
Aqua container glass	2	Other chipped stone flake	2
Biface fragment	2	Porcelain	1
Bipolar	1	Red container glass	1
Clear container glass	9	Riverton	1
Coal	1	Stage 2 biface	2
Core	6	Stage 3 biface	1
Edge modified flake	4	Stoneware	4
Green milkglass container	1	Unmodified flake	112
Melted glass	1	Whiteware	1
Milkglass container glass	3		

One artifact was recovered from the Archaic period, and twenty-eight from the Historic period (Figure 23). A Riverton point was recovered from site 12-Mi-612 and manufactured from an unknown heat treated chert. Riverton points date to approximately 1600 to 1000 BC (Justice 1987: 71).



Figure 23. Diagnostic artifact from Survey Area 5: a) Riverton point (12-Mi-612).

Sites

Twenty-six archaeological sites, 12-Mi-610 to 635, were recorded in Survey Area 5 (Figures 24, 25). Summaries for the individual sites are contained in Appendix F. Twenty-four of the sites had unidentified prehistoric components (12-Mi-610, 611, 613 to 631, 633 to 635), one site had a Late Archaic component (12-Mi-612), and one site had a Historic component (12-Mi-632). Ten of the sites were isolated finds (12-Mi-610, 612, 615, 622, 625, 626, 630, 631, 633, 635) and sixteen sites were lithic scatters (12-Mi-611, 613, 614, 616 to 621, 623, 624, 627 to 629, 632, 634).

Sites Locations Confidential

Not for Public Disclosure

Figure 24. A portion of the USGS 7.5' Onward and Twelve Mile, Indiana Quadrangles showing the location of sites 12-Mi-610 to 635.

Sites Locations Confidential

Not for Public Disclosure

Figure 25. 2005 aerial showing the location of sites 12-Mi-610 to 635.

The sites were found on all landforms present in the survey area. Nineteen sites were discovered on floodplain all on Gessie soils (12-Mi-610 to 626, 628, 634). Six sites were discovered on outwash terrace; four on Millsdale soils (12-629, 632, 633, 635), one on Milton soils (12-Mi-630) and one that covered both Millsdale and Milton soils (12-Mi-631). One site (12-Mi-627) encompassed both outwash terrace and floodplain on Millsdale and Gessie soils. All sites that encompassed multiple zones were lithic scatters. Thirteen sites in the floodplain were lithic scatters (12-611, 613, 614, 616 to 621, 623, 624, 628, 634) and six were isolated finds (12-Mi-610, 612, 615, 622, 625, 626). Three sites on the outwash terrace were lithic scatters (12-Mi-627, 629, 632) and four were isolates (12-Mi-630, 631, 633, 635).

Due to the low number of artifacts on many of the sites within the project area, many sites were determined not to qualify for listing on the State or National Registers. Multiple sites within Survey Area 5 were considered potentially eligible for listing on the State and/or National Registers. These sites are 12-Mi-616, 621 and 627.

Site 12-Mi-616 contained a relatively high density of artifacts. Sites 12-Mi-621 and 627 contained moderately high densities of artifacts and a high concentrations of fire-cracked rock (for 621 n=50, 627 n=50). A Phase II investigation to determine State and National Register eligibility is recommended for sites 12-Mi-616, 621 and 627. Additionally, portions of the survey area contained Gessie silt loam soils, a low energy well drained alluvial soil. All portions of the project area and sites within the Gessie silt loam are recommended for subsurface investigations, including sites 12-Mi-610 to 628, 634.

Density

Survey Area 5 consisted of approximately 37.7 acres consisting of 20.1 acres of floodplain 17.6 acres of outwash terrace. Within Survey Area 5, a density of one prehistoric site per 1.1 acres occurred on floodplain and covered 7.0% of the surface area, one prehistoric site per 2.9 acres occurred on the outwash terrace and covered 2.1% of the surface. An overall density of prehistoric sites within Survey Area 5 was one site per 1.5 acres.

Survey Area 6

Survey Area 6 was located near the valley edge north of Survey Area 5 in Peru Township in Section 25, Township 27 North, Range 3 East as shown on the USGS 7.5' Twelve Mile Quadrangle (Figure 26). The property was surveyed on June 5th, 2008. Ground surface visibility was approximately 90%. The field had been recently planted in corn that was approximately 25 cm tall. Approximately 71.1 acres were surveyed consisting of 58.5 acres of floodplain, 6.1 acres of outwash terrace and 6.5 acres of Peat. The area contained Gessie (Ge), Milford (Mk), Millsdale (Mm), Palms (Pm), Ross (Ro) and Shoals (Sh) soils. Five sites were encountered during the survey. The sites ranged in size from prehistoric isolated finds to a lithic scatter 1,083 m² (0.3 acres) in size. Components identified in the sites included Late Archaic.

Sites Locations Confidential

Not for Public Disclosure

Figure 26. A portion of the USGS 7.5' Onward and Twelve Mile, Indiana Quadrangles showing the location of Survey Area 6.

Artifacts

A total of 52 artifacts and 9 fire-cracked rocks were encountered in Survey Area 6. Table 11 provides a list of the artifacts recovered by category. Artifacts are listed by individual site in Appendix E. Only a couple of the artifacts recovered were diagnostic of a particular time frame.

Table 11. Artifacts from Survey Area 6			
Category	No.	Category	No.
Unmodified flake	45	Core	1
Edge modified flake	2	Brewerton Corner Notched	1
Biface fragment	2	Matanzas	1

Two artifacts were recovered from the Archaic period (Figure 27). A Brewerton Corner Notched point was recovered from site 12-Mi-638 and manufactured from Liston Creek chert. Brewerton Corner Notched points date to approximately 2980 to 1723 BC (Justice 1987: 115). A Matanzas point was recovered from site 12-Mi-638 and manufactured from Liston Creek chert. Matanzas points date to approximately 3700 to 2000 BC (Justice 1987: 119-120).



Figure 27. Diagnostic artifacts from Survey Area 6, site 12-Mi-638: a) Brewerton corner notched, b) Matanzas.

Sites

Five archaeological sites, 12-Mi-636 to 640, were recorded in Survey Area 6 (Figures 28, 29). Summaries for the individual sites are contained in Appendix F. Four of the sites had unidentified prehistoric components (12-Mi-636, 637, 639, 640), one site had a Late Archaic component (12-Mi-638). Two of the sites were isolated finds (12-Mi-637, 640) and three sites were lithic scatters (12-Mi-636, 638, 639).

Sites Locations Confidential

Not for Public Disclosure

Figure 28. A portion of the USGS 7.5' Twelve Mile, Indiana Quadrangle showing the location of sites 12-Mi-636 to 640.

Sites Locations Confidential

Not for Public Disclosure

Figure 29. 2005 aerial showing the location of sites 12-Mi-636 to 640.

The sites were found on the outwash terrace and floodplain soils within the survey area but not on the Peat soils. Two sites were discovered on outwash terrace on Milford soils (12-Mi-638, 639). Three sites were discovered on floodplain; two on Ross soils (12-Mi-636, 637), and one on Shoals soils (12-Mi-640). Both sites in the outwash terrace were lithic scatters (12-Mi-638, 639). One site in the floodplain was a lithic scatters (12-Hu-636) and two were isolates (12-637, 640).

Only upon beginning work in Survey Area 6 did it become apparent that the Ross soils within the survey area were part of an alluvial fan formation. This partially explains the low number of artifacts discovered in Survey Area 6. The soil was a light loamy soil and, assuming accretional deposition on the site, Survey Area 6 has a high potential for intact buried archaeological deposits. All of the Ross soils in Survey Area 6 and the sites discovered on the Ross soils including 12-Mi-636 and 637 and to a lesser extent site 12-Mi-638 are recommended for subsurface investigation. Site 12-Mi-638 is at the transition from the alluvial fan to the outwash terrace so may not have deep deposits. However, the potential remains for some intact subsurface deposits on site 12-Mi-638. Due to the low number of artifacts on many of the sites within the project area, all but one of the sites were determined not to qualify for listing on the State or National Registers. Site 12-Mi-638 had a sufficient number of artifacts to warrant testing of the site to determine State and National Register eligibility.

Density

Survey Area 6 consisted of approximately 71.1 acres consisting of 58.5 acres of floodplain, 6.1 acres of outwash terrace and 6.5 acres of lacustrine. Within Survey Area 6, a density of one prehistoric site per 19.5 acres occurred on floodplain and covered <1% of the surface area, one prehistoric site per 3.1 acres occurred on the outwash terrace and covered 4.5% of the surface area and no sites were located on the lacustrine soils. An overall density of prehistoric sites within Survey Area 6 was one site per 14.2 acres.

Survey Area 7

Survey Area 7 was located just south of Survey Area 6 in Peru Township in Section 25, Township 27 North, Range 3 East as shown on the USGS 7.5' Twelve Mile Quadrangle (Figure 30). The property was surveyed on June 5th, 2008. Ground surface visibility was approximately 65%. The field had bean stubble. Approximately 11.4 acres were surveyed consisting of 0.8 acres of floodplain and 10.6 acres of outwash terrace. The area contained Gessie (Ge), Millsdale (Mm) and Ross (Ro) soils. No sites were encountered during the survey. The predominant soil type was the Millsdale soil which is a poorly drained soil. When no artifacts were recovered after surveying more than ten acres and no significant topographic variation was seen in the field, survey was discontinued.

Sites Locations Confidential

Not for Public Disclosure

Figure 30. A portion of the USGS 7.5' Onward and Twelve Mile, Indiana Quadrangles showing the location of Survey Area 7.

Survey Area 8

Survey Area 8 was located along the south side of the Wabash River in Noble Township in Reserve 55, Township 27 North, Range 6 East as shown on the USGS 7.5' Wabash Quadrangle (Figure 31). The property was surveyed on October 17th, 2008. Ground surface visibility was approximately 75%. Factors affecting visibility included bean stubble. Approximately 35.7 acres were surveyed all of which were outwash terrace soils. The area contained Fox (FsC2), Homer (Ho), Martinsville (MbA, MbB), Milton (MsA, MsC2), Ockley (OcB2), and Westland (Wt) soils. Nineteen sites were encountered during the survey. The sites ranged in size from prehistoric isolated finds to a lithic scatter 216 m² (< 0.1 acres) in size. No diagnostic artifacts were recovered in Survey Area 8.

Sites Locations Confidential

Not for Public Disclosure

Figure 31. A portion of the USGS 7.5' Wabash, Indiana Quadrangle showing the location of Survey Area 8.

Artifacts

A total of 56 artifacts and 147 fire-cracked rocks were encountered in Survey Area 8. Table 12 provides a list of the artifacts recovered by category. Artifacts are listed by individual site in Appendix E. None of the artifacts recovered were diagnostic of a particular time frame.

Table 12. Artifacts from Survey Area 8			
Category	No.	Category	No.
Biface fragment	2	Edge modified flake	6
Bipolar	2	Stage 2 biface	4
Block flake	1	Stage 3 biface	3
Core	12	Unmodified flake	28

Sites

Nineteen archaeological sites, 12-Wb-851 to 869, were recorded in Survey Area 8 (Figures 32, 33). Summaries for the individual sites are contained in Appendix F. All of the sites had unidentified prehistoric components. Seven of the sites were isolated finds (12-Wb-858 to 860, 862, 865, 866, 869) and twelve sites were lithic scatters (12-851 to 857, 861, 863, 864, 867, 868).

Sites Locations Confidential

Not for Public Disclosure

Figure 32. A portion of the USGS 7.5' Wabash, Indiana Quadrangle showing the location of sites 12-Wb-851 to 869.

Sites Locations Confidential

Not for Public Disclosure

Figure 33. 2005 aerial showing the location of sites 12-Wb-851 to 869.

Outwash terrace was the only environment within the survey area. Four sites were discovered on Fox soils (12-Wb-856, 858, 860, 865), eight on Martinsville soils (12-Wb-853, 854, 857, 861 to 863, 864, 867), two on Milton soils (12-Wb-851, 852), three on Ockley soils (12-Wb-855, 866, 868), one that covered both Fox and Martinsville soils (12-Wb-856), and one that covered both Martinsville and Ockley soils (12-Wb-869).

Due to the low number of artifacts on many of the sites within the project area, and the eroded nature of some soils, none of the sites were determined to qualify for listing on the State or National Registers.

Density

Survey Area 8 consisted of approximately 35.7 acres of outwash terrace. Within Survey Area 8, a density of one prehistoric site per 1.9 acres occurred and covered 0.7% of the surface area.

Survey Area 9

Survey Area 9 was located at the confluence of the Mississinewa and Wabash Rivers in Butler Township in Godfroy Reserve 9, Township 27 North, Range 4 East as shown on the USGS 7.5' Peru Quadrangle (Figure 34). The area surveyed is the floodplain between the two rivers. The property was surveyed on March 10th and 11th, 2009. Ground surface visibility was approximately 95%. The field had been fall plowed and had weathered over winter. Approximately 174.3 acres were surveyed in Gessie (Ge) soils which are a floodplain soil. One hundred and two sites were encountered during the survey. The sites ranged in size from prehistoric isolated finds to a lithic scatter 19,838 m² (4.9 acres) in size. Components identified in the sites included Early Archaic, Middle Archaic, Late Archaic, Late Woodland and Historic.

Survey Area 9 is an important area within the research universe. The property is suspected to have been the location of two historic Native American village sites (Worthington 1824, Wepler 1984). The property is one of the Francis Godfroy Reserves. Two historic structures are associated with the property and are listed on the Indiana Historic Sites and Structures Inventory as outstanding contributors to the Godfroy-Cole Rural Historic District (Davis 1998). These include a Greek Revival house (Indiana no. 47007) and the American Circus Corporation Winter Headquarters (Indiana no. 47010), which is also listed on the National Register of Historic Places. The Godfroy family was important and conspicuous in the area with multiple other associated structures in the area listed on the Indiana and National Registers. The property was also the home of American Circus Corporation from 1921 until the great depression and housed the animals and permanent workers associated with the circus (Davis 1998).

Sites Locations Confidential

Not for Public Disclosure

Figure 34. A portion of the USGS 7.5' Peru, Indiana Quadrangle showing the location of Survey Area 4.

Artifacts

A total of 2,652 artifacts and 1,624 fire-cracked rocks were encountered in Survey Area 9. Table 13 provides a list of the artifacts recovered by category. Artifacts are listed by individual site in Appendix E. Only a few of the artifacts recovered were diagnostic of a particular time frame.

Category	No.	Category	No.	Category	No.
Amber container glass	2	Edge modified flake	26	Porcelain	2
Amethyst container glass	31	Endscraper	1	Purple transferprint whiteware	2
Aqua container glass	57	Fencing staple	1	Raddatz side notched	1
Bell	1	Flat glass	2	Red and black hand painted floral whiteware	1
Biface fragment	20	Flow blue whiteware	8	Red hand painted whiteware	1
Bipolar	8	Graver	1	Red transferprint whiteware	4
Black transferprint whiteware	4	Green hand painted whiteware	5	Riverton	1
Block flake	2	Green scalloped cord and herring whiteware	1	Scalloped whiteware	1
Blue hand painted whiteware	1	Horseshoe	1	Square nail	1
Blue shell edge whiteware	3	Insulator	39	Stage 2 biface	14
Blue slip stoneware	1	Karnak	1	Stage 3 biface	5
Blue sponge decorated whiteware	4	Kirk corner notched	1	Stage 4 biface	6
Blue transferprint whiteware	11	Lamoka	3	Stoneware	40
Bolt	1	Large mammal bones	9	Triangular cluster	14
Bottle	1	Large mammal tooth	1	Unidentified	1
Brewerton corner notched hafted endscraper	2	Milkglass button	4	Unidentified Early Archaic point fragment	1
Burned bone	18	Milkglass canning lid Liner	5	Unidentified point	3
Lead cast shot, 11.63 mm	1	Milkglass container	2	Unidentified point fragment	3
Clear container glass	32	Motley	1	Unmodified flake	2003
Commissary knife	1	Olive container glass	1	Washer	1
Core	44	Point base	1	Waterbury Co. button	1
Cow tooth	1	Point fragment	11	Whiteware	167
Doll face	1	Point tip	1	Yellowware	6

Two diagnostic artifacts were recovered from the Early Archaic period, one from the Middle Archaic, eight from the Late Archaic, fifteen from the Late Woodland and fifty-two from the Historic period (Figures 35, 36, 37, 38). A Kirk Corner Notched point was recovered from site 12-Mi-685 and manufactured from an unknown chert. Kirk Corner Notched points date to approximately 7500 to 6900 BC (Justice 1987: 71). An unidentified Early Archaic point was

recovered from site 12-Mi-678. A Raddatz side notched point was recovered from site 12-Mi-737 and manufactured from an unknown chert. Raddatz side notched points date to approximately 6000 to 3000 BC (Justice 1987: 68). A Karnak point was recovered from site 12-Mi-647b and manufactured from Liston Creek. Karnak points date to approximately 3700 to 3000 BC (Justice 1987: 134). Three Lamoka points were recovered, one from site 12-Mi-725 and manufactured from an unknown chert, one from site 12-Mi-655a and manufactured from an unknown chert, and one from site 12-Mi-656 and manufactured from Liston Creek chert. Lamoka points date to approximately 3500 to 2500 BC (Justice 1987: 129). Two Brewerton Corner Notched points were recovered from site 12-Mi-663 one manufactured from Liston Creek chert and the other from an unknown heat treated chert. Brewerton Corner Notched points date to approximately 2980 to 1723 BC (Justice 1987: 115). A Riverton point was recovered from site 12-Mi-655a and manufactured from heat treated Liston Creek chert. Riverton points date to approximately 1600 to 800 BC (Justice 1987: 130). A Motley point was recovered from site 12-Mi-684 and manufactured from Liston Creek chert. Motley points date to approximately 1370 to 600 BC (Justice 1987: 199). Fourteen Triangular Cluster points were recovered, one from 12-Mi-646a and manufactured from Liston Creek chert, one from 12-Mi-665 and manufactured from Liston Creek chert, two from 12-Mi-673a and manufactured from Liston Creek chert, three from 12-Mi-673b one manufactured from an unknown chert and two from Liston Creek chert, one from 12-Mi-673d and manufactured from Liston Creek chert, one from 12-Mi-673e and manufactured from Liston Creek chert, one from 12-Mi-677 and manufactured from Liston Creek chert, one from 12-Mi-728 and manufactured from Liston Creek chert, one from 12-Mi-731 and manufactured from Liston Creek chert, one from 12-Mi-736 and manufactured from an unknown chert and one from 12-Mi-740 and manufactured from an unknown chert. Triangular cluster points date to approximately AD 800 to 1300 (Justice 1987: 227-229). A Commissary knife was recovered from site 12-Mi-647c and manufactured from an unknown chert. Commissary knives date to approximately AD 900, although it is likely they co-occur within the same time period as the Triangular Cluster (Filkins 1988).

The black transferprint whiteware from site 12-Mi-663 was manufactured between 1830 and 1860 (Lofstrom et al. 1982: 14), flow blue whiteware artifacts from sites 12-Mi-659, 663, 682b and 717 were manufactured between 1820 and 1860 (Majewski and O'Brien 1987: 152), and sponge decorated whiteware from sites 12-Mi-663 and 717 were manufactured between 1840 and 1860 (ODOT 1991: 178). Purple transferprint from site 12-Mi-663 was manufactured between 1830 and 1860 (Lofstrom et al. 1982: 14). The square nail from site 12-Mi-661 dates to 1830-c.1890 (IMACS 2001: 470). The hand painted whitewares from sites 12-Mi-663, 682b, 690 and 717 date from 1820 to the present (ODOT 1991: 177). The shell edge blue whiteware from site 12-Mi-660 dates from 1820 to 1860 (Feldhues 1995: 9). The green scalloped cord and herring pattern whiteware from site 12-Mi-663 dates from 1820 to 1860 (Feldhues 1995: 9). The blue transferprint from sites 663, 682b, 683, 690 and 717 dates from 1830 to 1860 and the red transferprint from sites 12-Mi-663, and 683 from 1830 to 1850 (Feldhues 1995: 8). Yellowware

from sites 12-Mi-682b and 683 dates from 1830 to the present (Feldhues 1995: 15). Milkglass items date from 1890 to 1960 (Feldhues 1995: 1). Aqua glass dates from 1800 to c. 1910 (Feldhues 1995: 1). Amethyst glass dates from 1880 to 1925 (Feldhues 1995: 2).

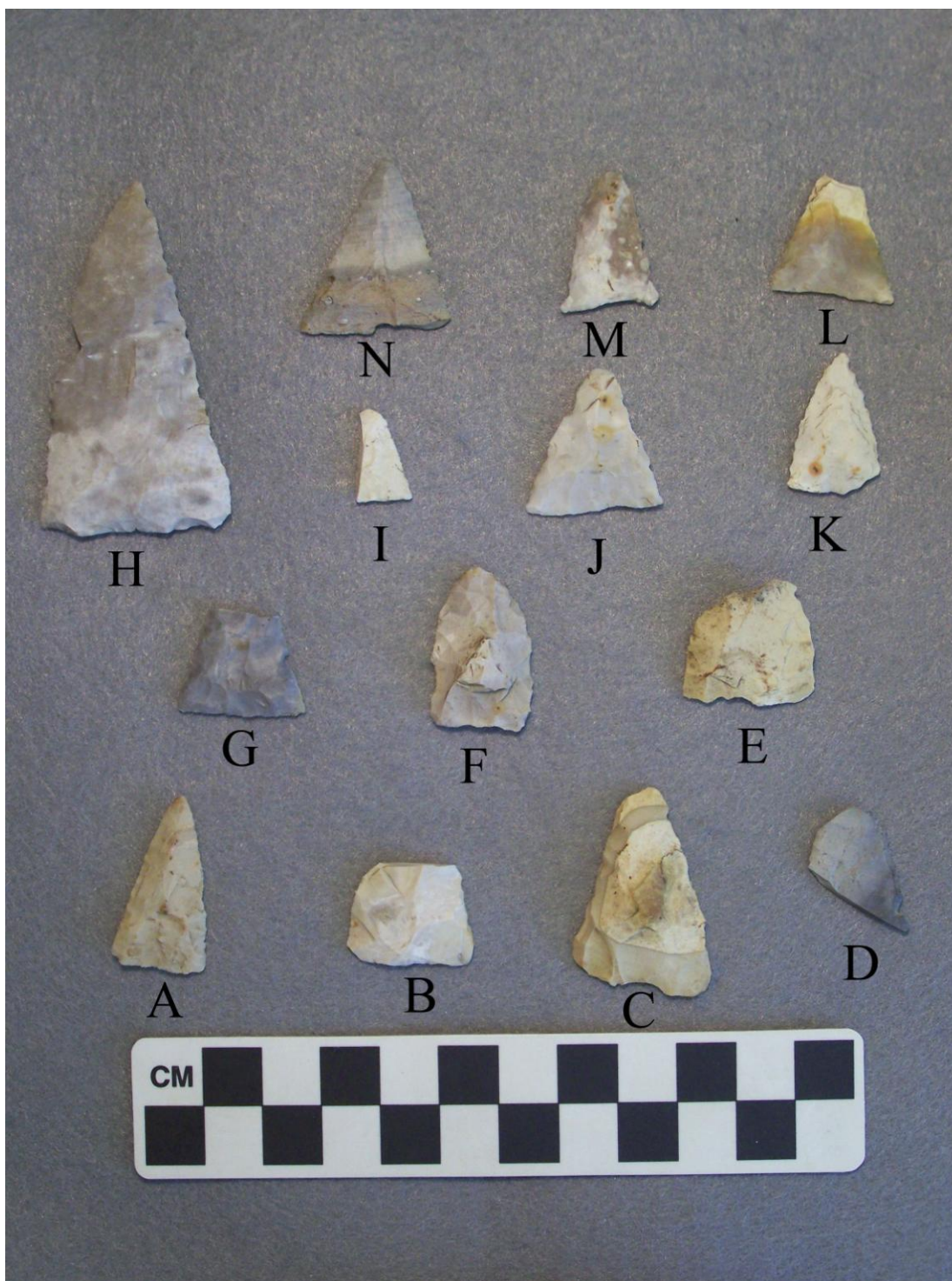


Figure 35. Late Woodland artifacts from Survey Area 9 including a Commissary knife (H 12-Mi-647c) and multiple Triangular Cluster points (a, b 12-Mi-673a; c, d 12-Mi-673b; e, 12-Mi-673d; f, 12-Mi-673e; g, 12-Mi-731; i, 12-Mi-728; j, 12-Mi-673; k, 12-Mi-677; l, 12-Mi-740; m, 12-Mi-646a; n, 12-Mi-736)



Figure 36. Other diagnostic prehistoric artifacts from Survey Area 9: a, b) unidentified point (in order 12-Mi-656, 649), c) unidentified point (12-Mi-656), d, e, f) Lamoka points (in order 12-Mi-655, 725, 656), g) Motley point (12-Mi-684), h) Kirk corner notched point (12-Mi-685), i) unidentified Early Archaic point (12-Mi-678), j) Raddatz side notched point (12-Mi-737), k, l) Brewerton corner notched hafted scraper (both 12-Mi-663), m) Karnak point (12-Mi647b), n) Riverton point (12-Mi-655a)



Figure 37. Diagnostic historic artifacts from Survey Area 9: a) green scalloped cord and herring whiteware, b) green hand painted whiteware, c) black transferprint whiteware body, d) red and black hand painted whiteware body, e) red transferprint whiteware body, f) purple transferprint whiteware body, g) purple transferprint whiteware rim, h) flow blue whiteware rim, i) blue transferprint whiteware rim, j), k) blue sponge decorated whiteware rim, l) flow blue whiteware body, m) blue transferprint whiteware body, n) silver plated bell, o) scalloped whiteware, p, q) shell edge blue whiteware rim, r) cast lead shot

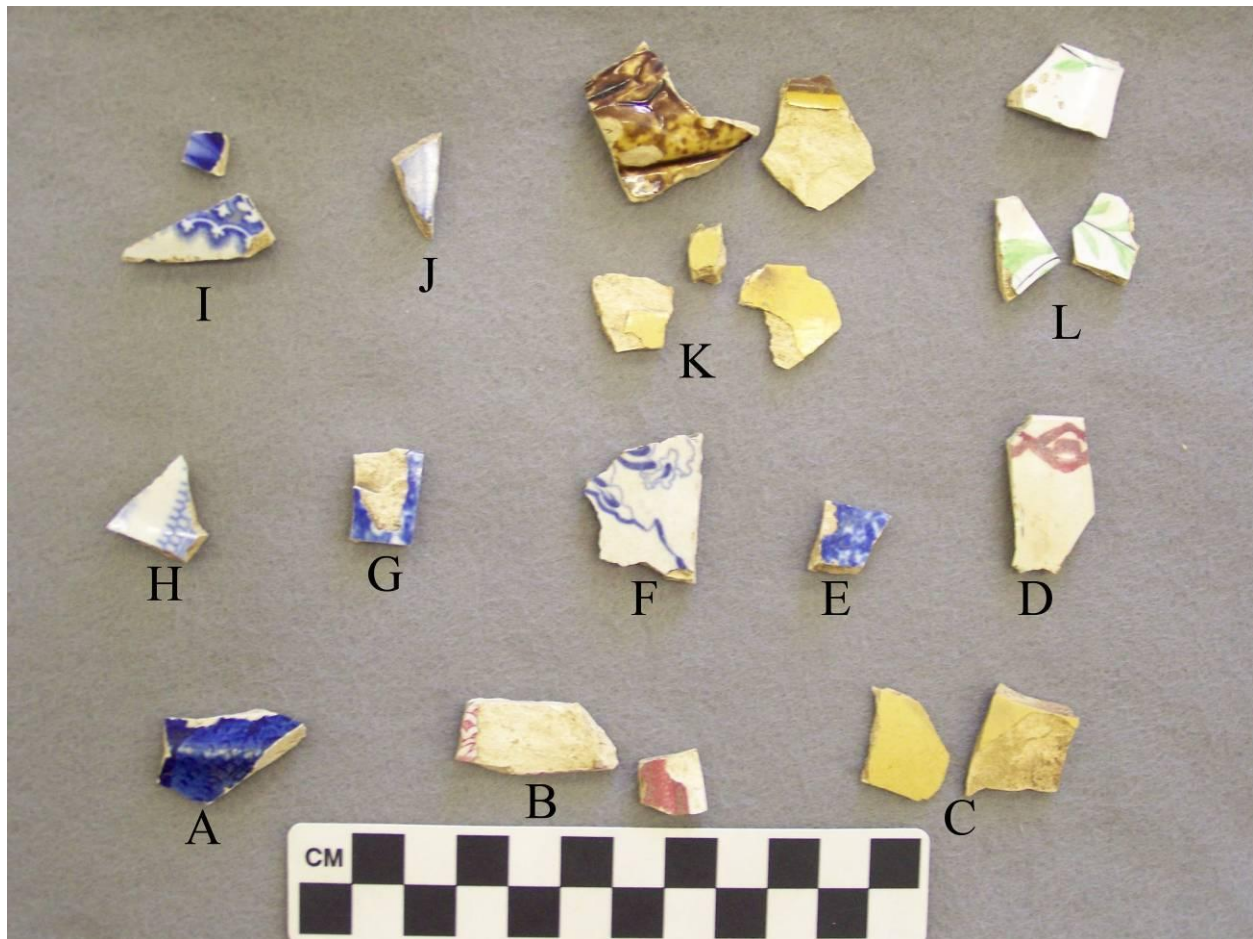


Figure 38 Diagnostic historic artifacts from Survey Area 9: a) flow blue whiteware, b) red transferprint whiteware, c) yellowware, d) red handpainted whiteware rim, e) blue sponge decorated whiteware, f, g, h, i, j) blue transferprint whiteware, k) yellowware, l) green hand painted whiteware

Sites

One hundred and two archaeological sites, 12-Mi-641 to 742, were recorded in Survey Area 9 (Figures 39, 40, 41, 42). Summaries for the individual sites are contained in Appendix F. Sixty-eight of the sites had unidentified prehistoric components (12-Mi-642 to 645, 648, 650, 652 to 654, 657, 658, 662, 664, 666 to 672, 674 to 676, 679 to 681, 687 to 689, 691 to 699, 701, 702, 704 to 711, 716, 718 to 724, 726, 727, 729, 732 to 735, 738, 739, 741, 742), fifteen sites had unidentified prehistoric and Historic components (12-Mi-641, 649, 660, 661, 682, 683, 686, 690, 700, 703, 712 to 715, 717), two sites had an Early Archaic component (12-Mi-678, 685), one site had a Middle Archaic component (12-Mi-737), four sites had a Late Archaic component (12-Mi-655, 656, 684, 725), one site had a Late Archaic and Historic component (12-Mi-663), six sites

had a Late Woodland component (12-Mi-665, 677, 728, 731, 736, 740), two sites had a Late Woodland and Historic component (12-Mi-646, 673), two sites had a Historic component (12-Mi-659, 730) and one site had a Late Archaic, Late Woodland and Historic component (12-Mi-647). Thirty-five of the sites were isolated finds (12-Mi-642, 644, 652, 657, 659, 666, 669, 675, 678, 681, 685, 687, 692, 693, 701, 702, 704, 705, 707, 708, 711, 720 to 724, 727, 729, 731 to 733, 735 to 737, 741) and sixty-seven sites were lithic scatters (12-Mi-641, 643, 645, 646 to 651, 653 to 656, 658, 660 to 665, 667, 668, 670 to 674, 676, 677, 679, 680, 682 to 684, 686, 689 to 691, 694 to 700, 703, 706, 709, 710, 712, 713 to 719, 725, 726, 728, 730, 734, 738 to 740, 742).

Sites Locations Confidential

Not for Public Disclosure

Figure 39. A portion of the USGS 7.5' Peru, Indiana Quadrangle showing the location of sites 12-Mi-642, 644, 652, 657, 659, 666, 669, 675, 678, 681, 685, 687, 692, 693, 701, 702, 704, 705, 707, 708, 711, 720 to 724, 727, 729, 731 to 733, 735 to 737, 741.

Sites Locations Confidential

Not for Public Disclosure

Figure 40. A portion of the USGS 7.5' Peru, Indiana Quadrangle showing the location of sites 12-Mi-641, 643, 645, 646 to 651, 653 to 656, 658, 660 to 665, 667, 668, 670 to 674, 676, 677, 679, 680, 682 to 684, 686, 689 to 691, 694 to 700, 703, 706, 709, 710, 712, 713 to 719, 725, 726, 728, 730, 734, 738 to 740, 742.

Sites Locations Confidential

Not for Public Disclosure

Figure 41. 2005 aerial showing the location of sites 12-Mi-642, 644, 652, 657, 659, 666, 669, 675, 678, 681, 685, 687, 692, 693, 701, 702, 704, 705, 707, 708, 711, 720 to 724, 727, 729, 731 to 733, 735 to 737, 741.

Sites Locations Confidential

Not for Public Disclosure

Figure 42. 2005 aerial showing the location of sites 12-Mi-641, 643, 645, 646 to 651, 653 to 656, 658, 660 to 665, 667, 668, 670 to 674, 676, 677, 679, 680, 682 to 684, 686, 689 to 691, 694 to 700, 703, 706, 709, 710, 712, 713 to 719, 725, 726, 728, 730, 734, 738 to 740, 742.

The entirety of the survey area was Gessie soils, a floodplain soil. Topographic variation was minimal (< 1.5m) and was limited to floodplain rises and swales. Most of the sites, and especially the large lithic scatters, were confined to or were dominantly found on the floodplain rises.

Many portions of the property contained historic sites that one might associate with transient housing. These sites were ephemeral, with low artifact counts and densities. Additionally, they did not appear to be associated with extant features, *ie*, foundation stones or wells. Porcelain insulators seemed to be well represented in the historic assemblage. It is likely that temporary structures with electricity were constructed for housing circus workers, animals and gear on the property. There appears to be little reason to suspect intact features associated with these sites, although some areas with high densities of artifacts were recommended for testing below.

Due to the high number of artifacts, fire cracked rock and/or burned bone on many of the sites within the project area, it was determined that many sites may qualify for listing on the State and/or National Registers. These sites are 12-Mi-646, 647, 649, 655, 656, 661, 663, 673, 677, 679, 680, 682, 683, 690, 694, 696, 712 and 717.

Many of the sites were recommended based upon the high density of prehistoric artifacts recovered off of the surface (12-Mi-646, 647, 655, 656, 663, 673, 677, 679, 680, 682, 683, 690, 694, 696, 712, 717). Sites 12-Mi-649 and 661 were recommended for testing based upon the high amounts of historic artifacts which could represent early 19th century settlement. Many of the sites were broken up into multiple sections to maintain some provenance for artifacts. These sites include 12-Mi-646a, 646b, 647a, 647b, 647c, 655a, 655b, 673a, 673b, 673c, 673d, 673e, 673f, 682a, 682b. Additionally, the entire survey area was listed as low energy alluvium which has the potential for intact subsurface deposits. The type section for Gessie soils is within the survey area on site 12-Mi-690 and the test trench revealed soils conducive to site burial (USDA NRCS 2009). All of Survey Area 9 and the sites within Survey Area 9 are recommended for subsurface investigation to determine the vertical extent of the sites. Based upon the locations of diagnostic artifacts recovered in survey area 9, it appears that the rivers may be migrating downstream and building at the confluence. The earliest sites are located well back from the confluence of the rivers and appear to conform temporally to an accretional deposition (Figure 43).

Sites Locations Confidential

Not for Public Disclosure

Figure 43. Site locations by identified period.

Density

Survey Area 9 consisted of approximately 174.3 acres of floodplain. Within Survey Area 9, a density of one site per 1.7 acres occurred and covered 13.3% of the surface area.

Survey Area 10

Survey Area 10 was located along the northern edge of the Wabash River in Erie Township in the Jos. Richardville Reserve, Township 27 North, Range 5 East as shown on the USGS 7.5' Richvalley Quadrangle (Figure 44). The property was surveyed on March 13th, 2009. Ground surface visibility was approximately 80%. Approximately 59.1 acres were surveyed consisting of 32.5 acres of floodplain and 26.6 acres of outwash terrace. The area contained Fox (FsA, FsB), Gessie (Ge), Ormas-Oshtemo (OsB), Shoals (Sh) and Stonelick (St) soils. Sixty-five sites were encountered during the survey. The sites ranged in size from prehistoric isolated finds to a lithic scatter 7,095 m² (1.8 acres) in size. Components identified in the sites included Early Archaic, Middle Archaic, Late Archaic, Middle Woodland and Late Woodland.

Sites Locations Confidential

Not for Public Disclosure

Figure 44. A portion of the USGS 7.5' Richvalley, Indiana Quadrangles showing the location of Survey Area 10.

Artifacts

A total of 2,195 artifacts and 676 fire-cracked rocks were encountered in Survey Area 10. Table 14 provides a list of the artifacts recovered by category. Artifacts are listed by individual site in Appendix E. Only a few of the artifacts recovered were diagnostic of a particular time frame.

Table 14. Artifacts from Survey Area 10			
Category	No.	Category	No.
Biface fragment	20	Middle Woodland Expanding Stemmed	1
Bipolar	3	Palmer	1
Brewerton eared notched	1	Point fragment	4
Core	35	Snyder's hafted endscraper	1
Decatur	1	St Charles	1
Edge modified flake	28	Stage 2 biface	34
Endscraper	2	Stage 3 biface	4
Godar	1	Stage 4 biface	1
Godar hafted endscraper	1	Table Rock	1
Jack's Reef corner notched	1	Thebes	1
Karnak Stemmed	1	Triangular Cluster	4
Late Archaic Stemmed Cluster	1	Unidentified Early Archaic point	1
Late Archaic Stemmed Cluster hafted scraper	1	Unmodified flake	2044
Matanzas	1		

Five artifacts were recovered from the Early Archaic period, two from the Middle Archaic, five from the Late Archaic, two from the Middle Woodland and five from the Late Woodland (Figure 45). A St. Charles point was recovered from site 12-Mi-858 and manufactured from Liston Creek chert. St. Charles points date to approximately 8000 to 6000 BC (Justice 1987: 57). A Thebes point was recovered from site 12-Mi-853a and manufactured from Attica chert. Thebes points date to approximately 8000 to 6000 BC (Justice 1987: 55). A Decatur point

was recovered from site 12-Mi-852b and manufactured from an unknown chert. Decatur points date to approximately 7500 to 7000 BC (Justice 1987: 81). A Palmer point was recovered from site 12-Mi-852b and manufactured from Liston Creek chert. Palmer points date to approximately 7500 to 6900 BC (Justice 1987: 78). An unidentified Early Archaic point was recovered from site 12-Mi-821 and manufactured from Liston Creek chert. Two Godars were recovered from sites 12-Mi-812 and 858 both of which were manufactured from Liston Creek chert with one of them (12-Mi-858) modified into a hafted endscraper. Godar points date to approximately 6000 to 3000 BC. A Brewerton eared notched point was recovered from site 12-Mi-855 and manufactured from Liston Creek chert. Brewerton Corner Notched points date to approximately 2980 to 1723 BC (Justice 1987: 115). A Karnak point was recovered from site 853c and manufactured from Liston Creek chert. Karnak points date to approximately 3700 to 3000 BC (Justice 1987: 134). A Late Archaic Stemmed Cluster point modified into a hafted endscraper was recovered from site 12-Mi-821 and manufactured from Liston Creek chert. A Late Archaic Stemmed Cluster point was recovered from site 12-Mi-860 and manufactured from heat damaged Liston Creek. Late Archaic Stemmed Cluster points date to approximately 4000 to 1000 BC (Justice 1987: 133-139). A Table Rock point was recovered from site 12-Mi-851 and manufactured from Liston Creek chert. Table Rock points date to approximately 3000 to 1000 BC (Justice 1987: 124). A Snyder's point was recovered from site 12-Mi-821 and manufactured from Liston Creek chert. Snyder's points date to approximately 200 BC to 400 AD (Justice 1987: 203). A Middle Woodland Expanding Stemmed point was recovered from site 12-Mi-830 and manufactured from an unknown chert. Middle Woodland Expanding Stemmed points date to approximately AD 100 to 800 (Justice 1987: 208-214). A Jack's Reef Corner Notched point was recovered from site 12-Mi-853b and manufactured from Liston Creek chert. Jack's Reef Corner Notched points date to approximately AD 800 to 1200 (Justice 1987: 217). Four Triangular Cluster points were recovered from sites 12-Mi-833, 836, 837 and 853b. Two (12-Mi-833, 837) were manufactured from Liston Creek chert and two (12-Mi-836, 853b) were manufactured from an unknown chert. Triangular Cluster points date to approximately AD 800 to 1300 (Justice 1987: 224).



Figure 45. Diagnostic artifacts from Survey Area 10: a) Snyder's hafted endscraper (12-Mi-821), b) Middle Woodland expanding stemmed (12-Mi-830), c) Jack's Reef corner notched (12-Mi-853b), d, e, f, g) Triangular Cluster points (in order 12-Mi-837, 836, 853b, 833), h) Late Archaic Stemmed Cluster (12-Mi-860), i) Late Archaic Stemmed cluster hafted endscraper (12-Mi-821), j) Brewerton eared notched point (12-Mi-855), k) Table Rock point (12-Mi-851), l) Karnak Stemmed point (12-Mi-853c), m) Matanzas point (12-Mi-852a), n) Godar point (12-Mi-812), o) Godar hafted endscraper (12-Mi-858), p) unidentified Early Archaic point (12-Mi-821), q) Thebes point (12-Mi-853a), r) St. Charles point (12-Mi-858), s) Palmer point (12-Mi-852b), t) Decatur point (12-Mi-852b).

Sites

Sixty-five archaeological sites, 12-Mi-806 to 870, were recorded in Survey Area 10 (Figures 46, 47, 48, 49). Summaries for the individual sites are contained in Appendix F. Fifty-six of the sites had unidentified prehistoric components (12-Mi-806 to 811, 813 to 820, 822 to 829, 831, 832, 834, 835, 838 to 850, 854, 856, 857, 859, 861 to 870), one site had an Early Archaic component (12-Mi-852), one site had an Early and Middle Archaic component (12-Mi-858), one site had an Early Archaic, Late Archaic and Middle Woodland component (12-Mi-821), one site had an Early Archaic, Late Archaic and Late Woodland component (12-Mi-853),

one site had a Middle Archaic component (12-Mi-812), three sites had a Late Archaic component (12-Mi-851, 855, 860), one site had a Middle Woodland component (12-Mi-830), and three sites had a Late Woodland component (12-Mi-833, 836, 837). Twenty-four of the sites were isolated finds (12-Mi-806, 807, 809 to 811, 813, 819, 820, 823 to 828, 830, 832, 845, 847, 849, 855, 859, 865, 867, 870) and forty-one sites were lithic scatters (12-Mi-808, 812, 814 to 818, 821, 822, 829, 831, 833 to 844, 846, 848, 850 to 854, 856 to 858, 860 to 864, 866, 868, 869).

Sites Locations Confidential

Not for Public Disclosure

Figure 46. A portion of the USGS 7.5' Richvalley, Indiana Quadrangle showing the location of sites 12-Mi-806, 807, 809 to 811, 813, 819, 820, 823 to 828, 830, 832, 845, 847, 849, 855, 859, 865, 867, 870.

Sites Locations Confidential

Not for Public Disclosure

Figure 47. A portion of the USGS 7.5' Richvalley, Indiana Quadrangle showing the location of sites 12-Mi-808, 812, 814 to 818, 821, 822, 829, 831, 833 to 844, 846, 848, 850 to 854, 856 to 858, 860 to 864, 866, 868, 869.

Sites Locations Confidential

Not for Public Disclosure

Figure 48. 2005 aerial showing the location of sites 12-Mi-806, 807, 809 to 811, 813, 819, 820, 823 to 828, 830, 832, 845, 847, 849, 855, 859, 865, 867, 870.

Sites Locations Confidential

Not for Public Disclosure

Figure 49. 2005 aerial showing the location of sites 12-Mi-808, 812, 814 to 818, 821, 822, 829, 831, 833 to 844, 846, 848, 850 to 854, 856 to 858, 860 to 864, 866, 868, 869.

The sites were found on all landforms present in the survey area. Thirty sites were discovered on floodplain; twenty-two on Gessie soils (12-Mi-810 to 818, 833 to 840, 850, 852, 854, 862, 863), four on Shoals soils (12-Mi-826, 827, 845, 846), two on Stonelick soils (12-Mi-841, 851) and two that covered both Gessie and Stonelick soils (12-Mi-842, 853). Thirty-one sites were discovered on outwash terrace; twenty-three on Fox soils (12-Mi-806 to 809, 819, 820, 822 to 824, 825, 829, 830, 832, 843, 847 to 849, 855, 861, 864 to 867), six on Ormas-Oshtemo soils (12-Mi-831, 856 to 859, 869) and two that covered both Fox and Ormas-Oshtemo soils (12-Mi-821, 860). Four sites (12-Mi-828, 844, 868, 870) encompassed both outwash terrace and floodplain on Shoals and Fox (12-Mi-828, 844), and Shoals and Ormas-Oshtemo (12-Mi-868, 870). All sites that encompassed multiple zones were lithic scatters. Sixteen sites in the outwash terrace were lithic scatters (12-Mi-808, 821, 822, 829, 831, 843, 848, 856 to 861, 864, 866, 869) and fifteen were isolated finds (12-Mi-806, 807, 809, 819, 820, 823 to 825, 830, 832, 847, 849, 855, 865, 867). Twenty-four sites in the floodplain were lithic scatters (12-Mi-812, 814 to 818, 833, 834 to 841, 846, 850 to 852, 854, 862, 863) and six were isolates (12-Mi-810, 811, 813, 826, 827, 845).

Due to the low number of artifacts on many of the sites within the project area, and the eroded nature of soils, many sites were determined not to qualify for listing on the State or National Registers. Multiple sites within Survey Area 10 were considered potentially eligible for listing on the State and/or National Registers. These sites are 12-Mi-812, 821, 822, 839, 840, 851, 852, 853, 858, 860 and 863. These sites were recommended for testing based upon the high density of artifacts on the sites. Additionally, portions of Survey Area 10 contained Gessie soils which are low energy alluvial soils. It is recommended that portions of the survey area and sites located in Gessie soils be covered by subsurface investigation, this includes sites 12-Mi-811 to 818, 833 to 840, 850, 852, 854, 862 and 863. Many of the sites were broken up into multiple sections to maintain some provenance for artifacts. These sites include 12-Mi-839a, 839b, 852a, 852b, 852c, 853a, 853b, 853c.

Density

Survey Area 10 consisted of approximately 32.5 acres of floodplain and 26.6 acres of outwash terrace. Within Survey Area 10, a density of one prehistoric site per 0.8 acres occurred on outwash terrace and covered 7.3% of the surface area, one prehistoric site per 1.0 acres occurred within the floodplain and covered 16.3% of the surface. An overall density of prehistoric sites within Survey Area 1 was one site per 0.9 acres. While the density of sites within the floodplain was slightly lower than on the outwash terrace the utilized portion of the floodplain is much greater.

Survey Area 11

Survey Area 11 was along the northern edge of the Wabash River in Erie Township in the Reserve 14 and the Jos. Richardville Reserve, Township 27 North, Range 5 East as shown on the USGS 7.5' Richvalley Quadrangle (Figure 50). The property was surveyed on March 12th, 2009. Ground surface visibility was approximately 80%. Approximately 79.0 acres were surveyed consisting of what was mapped as 66.9 acres of floodplain and 12.1 acres of outwash terrace. In the field, review of the Ross soils demonstrated that they were mislabeled. The areas mapped as Ross soils were outwash soils with large boulders, not indicative of an aquic molisol. The Ross soils within the survey area have been treated as outwash soils. The area contained Fox (FsB, FzC3), Gessie (Ge), Ross (Ro) and Shoals (Sh) soils. Sixty-four sites were encountered during the survey. The sites ranged in size from prehistoric isolated finds to a lithic scatter 40,069 m² (9.9 acres) in size. Components identified in the sites included Early Archaic, Late Archaic, Early Woodland and Late Woodland.

Sites Locations Confidential

Not for Public Disclosure

Figure 50. A portion of the USGS 7.5' Richvalley, Indiana Quadrangle showing the location of Survey Area 11.

Artifacts

A total of 2,011 artifacts and 1,346 fire-cracked rocks were encountered in Survey Area 11. Table 15 provides a list of the artifacts recovered by category. Artifacts are listed by individual site in Appendix E. Only a few of the artifacts recovered were diagnostic of a particular time frame.

Table 15. Artifacts from Survey Area 11			
Category	No.	Category	No.
Biface fragment	8	Palmer	1
Biface fragment	7	Point fragment	10
Bipolar	2	Riverton	1
Block flake	2	Stage 2 biface	11
Core	19	Stage 3 biface	5
Dickson Cluster	1	Stage 4 biface	1
Edge modified flake	54	Thebes	1
Endscraper	4	Triangular Cluster	5
Kanawha	2	Unclassified Late Archaic	1
Kirk corner notched	2	Unclassified point	1
Late Archaic Stemmed Cluster	1	Unclassified point base	1
Matanzas	1	Unmodified flake	1869
Other chipped stone flake	1		

Six artifacts were recovered from the Early Archaic period, four from the Late Archaic, one from the Early Woodland and five from the Late Woodland (Figure 51). A Thebes point was recovered from site 12-Mi-761 and manufactured from Attica chert. Thebes points date to approximately 8000 to 6000 BC (Justice 1987: 54). A Palmer point was recovered from site 12-Mi-784 and manufactured from Liston Creek chert. Palmer points date to approximately 7500 to 6900 BC (Justice 1987: 78). Two Kirk Corner Notched points were recovered from site 12-Mi-745 and 759 and manufactured from Liston Creek (12-Mi-745) and Attica (12-Mi-759) chert. Kirk Corner Notched points date to approximately 7500 to 6900 BC (Justice 1987: 71). Two Kanawha points were recovered from sites 12-Mi-747 and 12-Mi-788 and manufactured from Liston Creek (12-Mi-747) and an unknown chert (12-Mi-788). Kanawha points date to approximately 6200 to 5800 BC (Justice 1987: 95). A Matanzas point was

recovered from site 12-Mi-753d and manufactured from heat damaged Liston Creek. Matanzas points date to approximately 3700 to 2000 BC (Justice 1987: 119-120). A Late Archaic Stemmed Cluster point was recovered from site 12-Mi-757 and manufactured from Liston Creek chert. Late Archaic Stemmed Cluster points date to approximately 4000 to 1000 BC (Justice 1987: 133-139). A Riverton point was recovered from site 12-Mi-753a and manufactured from Liston Creek chert. Riverton points date to approximately 1600 to 1000 BC (Justice 1987: 71). An unclassified Late Archaic point was recovered from site 12-Mi-753a and manufactured from an unknown chert. A Dickson Cluster point was recovered from site 753b and manufactured from Liston Creek chert. Five Triangular Cluster points were recovered from sites 12-Mi-748, 751, 753a, 753e and 753g and manufactured from Liston Creek (12-Mi-751, 753a, 753e, 753g) and an unknown chert (12-Mi-748). Triangular cluster points date to approximately AD 800 to 1300 (Justice 1987: 227-229).

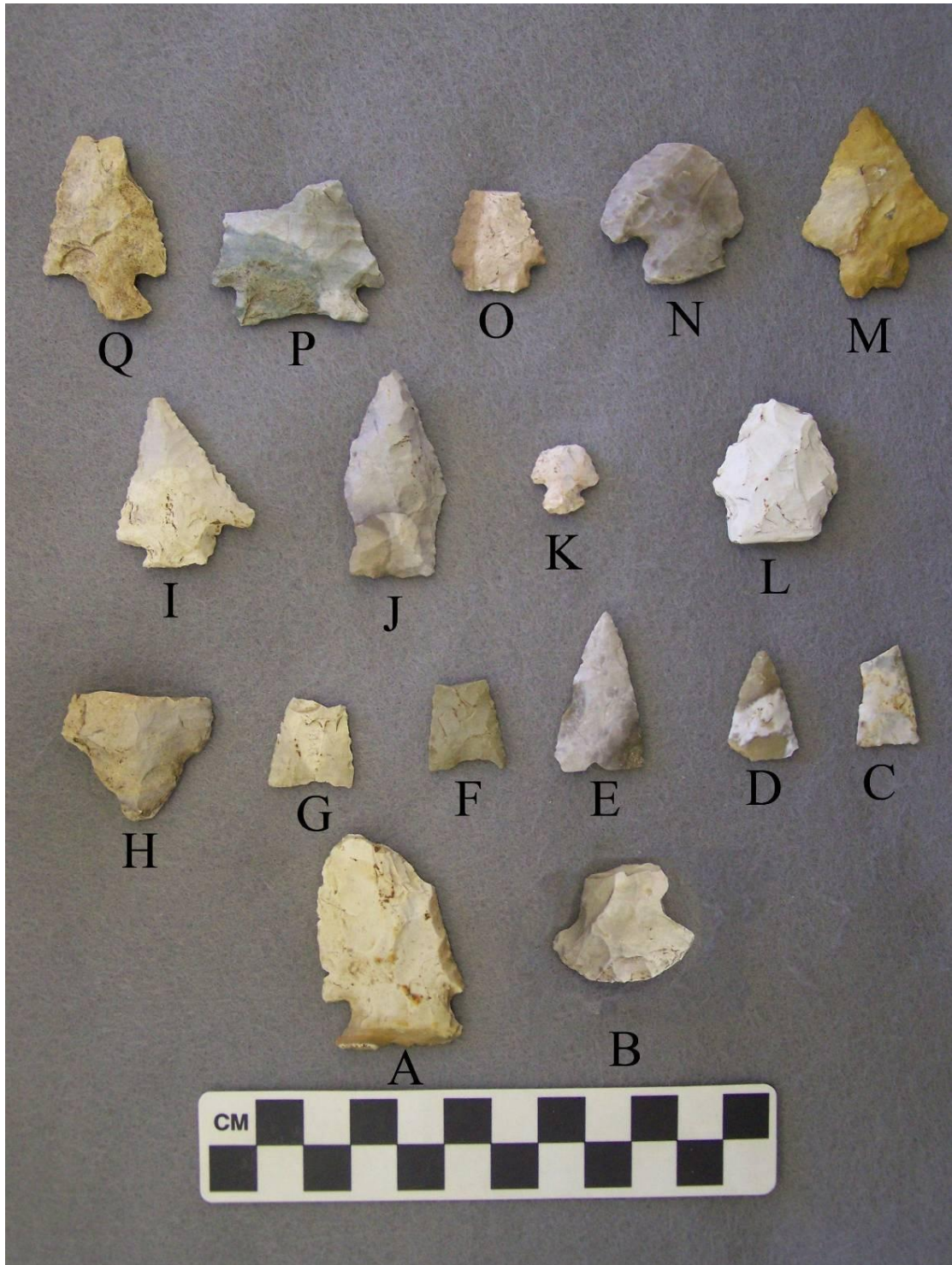


Figure 51. Diagnostic artifacts from Survey Area 11: a) unclassified point (12-Mi-758), b) unclassified point base (12-Mi-753a), c, d, e, f, g) Triangular Cluster points (in order 12-Mi-751, 753g, 748, 753e), h) Dickson Cluster point (12-Mi-753b), i) Kanawha point (12-Mi-788), j) Late Archaic Stemmed Cluster point (12-Mi-757), k) Riverton point (12-Mi-753a), l) unclassified Late Archaic point (12-Mi-753a), m) Kanawha point (12-Mi-747), n) Thebes point (12-Mi-761), o) Palmer point (12-Mi-784), p, q) Kirk corner notched point (in order 12-Mi-759, 745).

Sites

Sixty-four archaeological sites, 12-Mi-743 to 805, were recorded in Survey Area 11 (Figures 52, 53, 54, 55). Summaries for the individual sites are contained in Appendix F. Fifty-three of the sites had unidentified prehistoric components (12-Mi-743, 744, 746, 749, 750, 752, 754 to 756, 758, 760, 762 to 783, 785 to 805), six sites had an Early Archaic component (12-Mi-745, 747, 759, 761, 784, 788), one site had a Late Archaic component (12-Mi-757), two sites had a Late Woodland component (12-Mi-748, 751) and one site had a Late Archaic, Early Woodland and Late Woodland component (12-Mi-753). Twenty-seven of the sites were isolated finds (12-Mi-755, 760, 763, 764, 769 to 771, 773 to 782, 785, 788, 791, 795, 799, 803 to 805) and thirty-seven sites were lithic scatters (12-Mi-743 to 750, 753, 754, 756 to 759, 761, 762, 765 to 768, 772, 783, 784, 786, 787, 789, 790, 792 to 794, 796 to 798, 800 to 802).

Sites Locations Confidential

Not for Public Disclosure

Figure 52. A portion of the USGS 7.5' Richvalley, Indiana Quadrangle showing the location of sites 12-Mi-751, 752, 755, 760, 763, 764, 769 to 771, 773 to 782, 785, 788, 791, 795, 799, 803 to 805.

Sites Locations Confidential

Not for Public Disclosure

Figure 53. A portion of the USGS 7.5' Richvalley, Indiana Quadrangle showing the location of sites 12-Mi-743 to 750, 753, 754, 756 to 759, 761, 762, 765 to 768, 772, 783, 784, 786, 787, 789, 790, 792 to 794, 796 to 798, 800 to 802.

Sites Locations Confidential

Not for Public Disclosure

Figure 54. 2005 aerial showing the location of sites 12-12-Mi-751, 752, 755, 760, 763, 764, 769 to 771, 773 to 782, 785, 788, 791, 795, 799, 803 to 805.

Sites Locations Confidential

Not for Public Disclosure

Figure 55. 2005 aerial showing the location of sites 12-Mi-743 to 750, 753, 754, 756 to 759, 761, 762, 765 to 768, 772, 783, 784, 786, 787, 789, 790, 792 to 794, 796 to 798, 800 to 802.

The sites were found on all landforms present in the survey area. Sixteen sites were discovered on outwash terrace; three on Fox soils (12-Mi-743, 776, 777) and thirteen on Ross soils (12-Mi-774, 781, 789 to 791, 793, 794, 797 to 802). Forty-six sites were discovered on the floodplain; thirty-nine on Gessie soils (12-Mi-745 to 760, 764 to 773, 778 to 780, 782 to 788, 792, 795, 803), three on Shoals soils (12-Mi-744, 745, 805), three that covered Gessie and Shoals soils (12-Mi-763, 775, 804) and one that covered both Gessie and Ross soils (12-Mi-796). Two sites were discovered covering both outwash terrace and floodplain on Fox and Gessie soils (12-Mi-761, 762). All sites that encompassed multiple zones were lithic scatters. Twenty-three of the sites on the floodplain were isolated finds (12-Mi-755, 760, 763, 764, 769 to 771, 773 to 775, 778 to 782, 785, 788, 791, 795, 799, 803 to 805) and thirty-six sites were lithic scatters (12-Mi-744 to 750, 753, 754, 756 to 759, 761, 762, 765 to 768, 772, 783, 784, 786, 787, 789, 790, 792 to 794, 796 to 798, 800 to 802). One of the sites on the outwash terrace were isolates (12-Mi-776, 777) and one site was a lithic scatter (12-Mi-743).

Due to the low number of artifacts on many of the sites within the project area, and the eroded nature of soils, many sites were determined not to qualify for listing on the State or National Registers. Two sites within Survey Area 11 were considered potentially eligible for listing on the State and/or National Registers. These sites are 12-Mi-753 and 796. Additionally, portions of Survey Area 11 contained Gessie soils which are low energy alluvial soils. It is recommended that portions of the survey area and sites located in Gessie soils be covered by subsurface investigation, this includes sites 12-Mi-745 to 760, 764 to 773, 776, 779, 780, 783, 784 to 788, 792, 795, 803, 805 and portions of sites 12-Mi-761, 762. One of the sites (12-Mi-753) was broken up into multiple sections to maintain some provenance for artifacts.

Site 12-Mi-753 contained a high density of artifacts (n=1775) and fire cracked rock (n=1350) and included a Late Archaic, Early Woodland and Late Woodland component. The assemblage contained exotic cherts including Burlington, Dongola, Wyandotte and Attica.

Density

Survey Area 11 consisted of approximately 64.2 acres of floodplain and 14.8 acres of outwash terrace. Within Survey Area 1, a density of one prehistoric site per 0.9 acres occurred on outwash terrace and covered 2.7% of the surface area, one prehistoric site per 1.4 acres occurred within the floodplain and covered 16.4% of the surface area. An overall density of prehistoric sites within Survey Area 11 was one site per 1.3 acres. While the density of sites within the floodplain was lower than on the outwash terrace the utilized portion of the landscape is much greater.

Survey Area 12

Survey Area 12 was located on the north side of the Wabash River in Noble Township, Wabash County in Section 24, Township 27 North, Range 5 East as shown on the USGS 7.5' Richvalley Quadrangle (Figure 56). The property was surveyed on March 9th, 2009. Ground surface visibility was approximately 60%. The field contained bean stubble which limited visibility. Approximately 89.0 acres were surveyed consisting of 86.0 acres of floodplain and 3.0 acres of outwash. The area contained Fox (FsA, FsB2), and Shoals (Sh) soils. Forty-two sites were encountered during the survey. The sites ranged in size from prehistoric isolated finds to a lithic scatter 14,335 m² (3.5 acres) in size. Components identified in the sites included Early Archaic, Late Archaic, Early Woodland, Late Woodland and Historic.

Sites Locations Confidential

Not for Public Disclosure

Figure 56. A portion of the USGS 7.5' Richvalley, Indiana Quadrangle showing the location of Survey Area 12.

Artifacts

A total of 992 artifacts and 535 fire-cracked rocks were encountered in Survey Area 12. Table 16 provides a list of the artifacts recovered by category. Artifacts are listed by individual site in Appendix E. Only a few of the artifacts recovered were diagnostic of a particular time frame.

Table 16. Artifacts from Survey Area 12			
Category	No.	Category	No.
Biface fragment	11	Insulator	1
Bipolar	6	Kramer	1
Block flake	2	LeCroy	1
Brewerton Corner Notched	1	Other chipped stone flake	1
Whiteware	4	Point fragment	2
Blue sponge decorated whiteware	1	Point tip	1
Porcelain	2	Riverton	1
Aqua container glass	1	Stage 2 biface	9
Amethyst container glass	1	Stage 3 biface	5
Core	56	Table Rock	1
Edge modified flake	15	Triangular Cluster	2
Endscraper	1	Unmodified flake	866

One diagnostic artifact was recovered from the Early Archaic period, three from the Late Archaic, one from the Early Woodland two from the Late Woodland and one from the Historic period (Figure 57). A LeCroy point was recovered from site 12-Wb-902b and manufactured from Upper Mercer chert. LeCroy points date to approximately 6500 to 5800 BC (Justice 1987: 91). A Brewerton Corner Notched point was recovered from site 12-Wb-902a and manufactured from Liston Creek chert. Brewerton Corner Notched points date to approximately 2980 to 1723 BC (Justice 1987: 115). A Table Rock point was recovered from site 12-Wb-902b and manufactured from Liston Creek. Table Rock points date to approximately 3000 to 1000 BC (Justice 1987: 124). A Riverton point was recovered from site 12-Wb-871 and manufactured from Liston Creek chert. Riverton points date to approximately 1600 to 1000 BC (Justice 1987: 71). A Kramer point was recovered from site 12-Wb-902a and manufactured from an unknown chert. Kramer points date to approximately 500 BC (Justice 1987: 184). Two Triangular Cluster points were recovered from sites 12-Wb-902a and 902c and manufactured from Liston Creek (12-Wb-902a)

and an unknown chert (12-Wb-902c). A flow blue whiteware body sherd was recovered from site 12-Hu-1285 and was manufactured between 1820 and 1860 (Majewski and O'Brien 1987: 152). Sponge decorated whiteware was manufactured between 1840 and 1860 (ODOT 1991: 178).



Figure 57. Diagnostic artifacts from Survey Area 12: a) blue sponge decorated whiteware, b, c) Triangular Cluster points (in order 12-Wb-902a, 902c), d) Kramer point (12-Wb-902a), e) LeCroy point (12-Wb-902b), f) Table Rock point (12-Wb-902b), g) Brewerton corner notched point (12-Wb-902a), h) Riverton point (12-Wb-871).

Sites

Forty-two archaeological sites, 12-Wb-870 to 911, were recorded in Survey Area 12 (Figures 58, 59). Summaries for the individual sites are contained in Appendix F. Thirty-nine of the sites had unidentified prehistoric components (12-Wb-870, 872 to 882, 884 to 901, 903 to 911), one site had a Late Archaic component (12-Wb-871), one site had an Early Archaic, Late Archaic, Early Woodland and Late Woodland component (12-Hu-1260), and one site had a Historic component (12-Wb-883). Sixteen of the sites were isolated finds (12-Wb-870, 880, 881, 884, 889 to 891, 897, 899, 901, 903 to 905, 907, 908, 910) and twenty-six sites were lithic scatters (12-Wb-871 to 879, 882, 883, 885 to 888, 892 to 896, 898, 900, 902, 906, 909, 911).

Sites Locations Confidential

Not for Public Disclosure

Figure 58. A portion of the USGS 7.5' Richvalley, Indiana Quadrangles showing the location of sites 12-Wb-870 to 911.

Sites Locations Confidential

Not for Public Disclosure

Figure 59. 2005 aerial showing the location of sites 12-Wb-870 to 911.

The sites were found on all landforms present in the survey area. Three sites were discovered on outwash terrace all on Fox soils (12-Wb-904, 906, 908). Thirty-eight sites were discovered on the floodplain; thirty-three on Genesee soils (12-Wb-871 to 900, 901, 903, 911), four on Shoals soils (12-Wb-870, 907, 909, 910) and one that covered both Genesee and Shoals soils (12-Wb-902). One site covered both the outwash terrace and the floodplain on Fox and Genesee soils (12-Wb-905). One site in the outwash terrace was a lithic scatter (12-Wb-906) and two were isolated finds (12-Wb-904, 908). Twenty-five sites in the floodplain were lithic scatters (12-Wb-871 to 879, 882, 883, 885 to 888, 892 to 896, 898, 900, 902, 909, 911) and fourteen were isolates (12-Wb-870, 880, 881, 884, 889 to 891, 897, 899, 901, 903, 905, 907, 910).

Due to the low number of artifacts on many of the sites within the project area many sites were determined not to qualify for listing on the State or National Registers. Multiple sites within Survey Area 12 were considered potentially eligible for listing on the State and/or National Registers. These sites are 12-Wb-871, 878 and 902.

Site 12-Wb-871 contained a high density of artifacts including a Late Archaic component. Site 12-Wb-878 contained a moderate density of artifacts and a high density of fire-cracked rock. Site 12-Wb-902 also contained a high density of artifacts and a high concentration of fire-cracked rock. A Phase II investigation to determine State and National Register eligibility is recommended for sites 12-Wb-871, 878, 902. Additionally, portions of Survey Area 12 contained Genesee soils a well drained, low energy alluvial soil. Subsurface investigation of portions of the survey area and sites discovered in Genesee soils including 12-Mi-871 to 877, 879 to 903, 905, 911 are recommended for subsurface investigation.

Density

Survey Area 12 consisted of approximately 86.0 acres of floodplain and 3.0 acres of outwash. Within Survey Area 1, a density of one prehistoric site per 0.9 acres occurred on outwash terrace and covered 5.7% of the surface area, one prehistoric site per 2.2 acres occurred within the floodplain and covered 4.9% of the surface. An overall density of prehistoric sites within Survey Area 12 was one site per 2.1 acres.

Survey Area 13

Survey Area 13 was located on the south side of the Wabash River in Noble Township, Wabash County in Reserve 11, Township 27 North, Range 5 East as shown on the USGS 7.5' Richvalley Quadrangle (Figure 60). The property was surveyed on March 13th, 2009. Ground surface visibility was approximately 80%. The field contained some small amounts of bean stubble. Approximately 63.7 acres were surveyed consisting of 55.7 acres of floodplain and 8.0 acres of outwash terrace. The area contained Fox (FsA, FsB2), Genesee (Ge), Milford (Mm), Milton (MsA, MsB2), and Sloan (So) soils. Sixty-eight sites were encountered during the survey. The sites ranged in size from prehistoric isolated finds to a lithic scatter 8,208 m² (2.0 acres) in size. Components identified in the sites included Paleo-Indian, Middle Archaic, Late Archaic and Late Woodland.

Sites Locations Confidential

Not for Public Disclosure

Figure 60. A portion of the USGS 7.5' Richvalley, Indiana Quadrangles showing the location of Survey Area 13.

Artifacts

A total of 1,069 artifacts and 833 fire-cracked rocks were encountered in Survey Area 13. Table 17 provides a list of the artifacts recovered by category. Artifacts are listed by individual site in Appendix E. Only a few of the artifacts recovered were diagnostic of a particular time frame.

Table 17. Artifacts from Survey Area 13			
Category	No.	Category	No.
Agate Basin	1	Late Paleo Indian fluted	1
biface fragment	10	Matanzas	1
bipolar	2	point fragment	1
Brewerton	1	prehistoric pottery body, grit temper	4
Brewerton hafted endscraper	1	prehistoric pottery body, grit temper, cord marked	1
Buck Creek Barbed	1	Raddatz side notched	1
burned bone	2	stage 2 biface	8
core	18	stage 3 biface	4
edge modified flake	46	stage 4 biface	1
endscraper	2	Triangular Cluster	6
graver	1	unmodified flake	953
Karnak	1		

Two artifacts were recovered from the Paleo-Indian period, one from the Middle Archaic, five Late Archaic and six Late Woodland (Figure 61). A Late Paleo-Indian fluted point was recovered from site 12-Wb-939 and manufactured from Liston Creek chert. Paleo-Indian fluted points date to approximately 12000 to 9000 BC (Justice 1987: 17-32). An Agate Basin point was recovered from site 12-Wb-924 and manufactured from an unknown chert. Agate Basin points date to approximately 8500 to 8000 BC (Justice 1987: 33). A Raddatz side notched point was recovered from site 12-Wb-976 and manufactured from heat treated Liston Creek chert. Raddatz points date to approximately 6000 to 3000 BC (Justice 1987: 68). A Matanzas point was recovered from site 12-Wb-960 and manufactured from Middle Jeffersonville chert. Matanzas points date to approximately 3700 to 2000 BC (Justice 1987: 119-120). A Brewerton corner notched point was recovered from site 12-Wb-973 and manufactured from an unknown chert. A Brewerton corner notched hafted endscraper was recovered from site 12-Wb-952 and manufactured from an unknown chert. Brewerton Corner Notched points date to approximately

2980 to 1723 BC (Justice 1987: 115). A Karnak point was recovered from site 12-Wb-962 and manufactured from an unknown chert. Karnak points date to approximately 3700 to 3000 BC (Justice 1987: 134). Four Triangular Cluster points were recovered from sites 12-Wb-913c, 915, 959, 964 and two from site 12-Wb-913d. The Triangular Cluster points were manufactured from an unknown chert (12-Wb-913c, 915, 959) and Liston Creek chert (12-Wb-913d[both], 964).

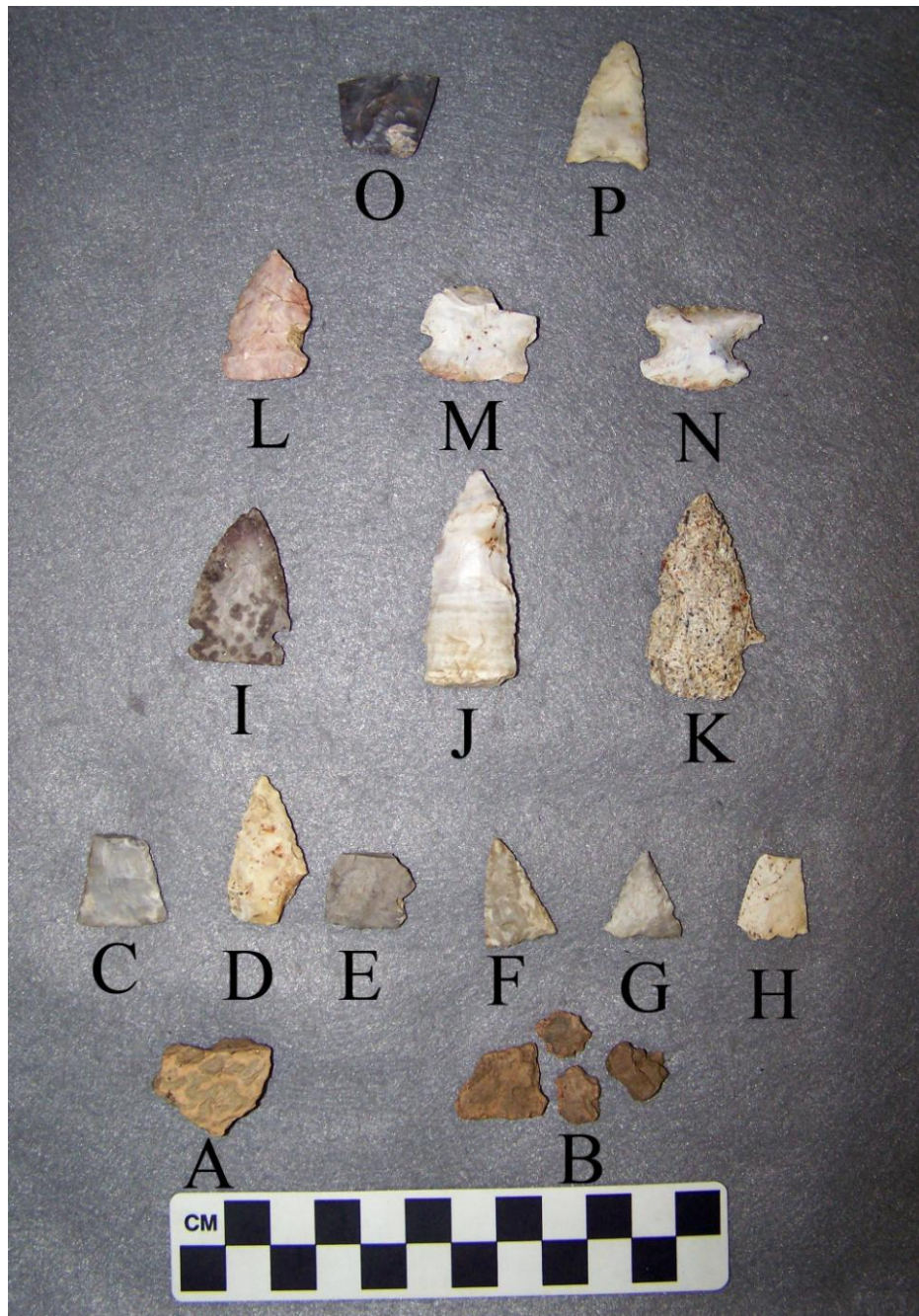


Figure 61. Diagnostic artifacts from Survey Area 13: a) cord marked, grit tempered pottery body (12-Wb-913d), b) grit tempered pottery body (12-Wb-913d), c-h) Triangular Cluster points (in order 12-Wb-913c, 913d, 913d, 915, 959, 964, i) Matanzas (12-Wb-960), j) Karnak point (12-Wb-962), k) Buck Creek Barbed point (12-Wb-960), l) Raddatz side notched point (12-Wb-976), m) Brewerton point (12-Wb-973), n) Brewerton hafted endscraper (12-Wb-952), o) Agate Basin point (12-Wb-924), p) Late Paleo-Indian fluted point (12-Wb-939).

Sites

Sixty-eight archaeological sites, 12-Wb-912 to 979, were recorded in Survey Area 13 (Figures 62, 63). Summaries for the individual sites are contained in Appendix F. Fifty-seven of the sites had unidentified prehistoric components (12-Wb-912, 914, 916 to 923, 925 to 938, 940 to 951, 953 to 958, 961, 963, 965 to 972, 974, 975, 977 to 979), two had a Paleo-Indian component (12-Wb-924, 939), one had a Middle Archaic component (12-Wb-976), four had a Late Archaic component (12-Wb-952, 960, 962, 973) and four had a Late Woodland component (12-Wb-913, 915, 959, 964). Twenty-six of the sites were isolated finds (12-Wb-912, 915, 917, 918, 920, 921, 927, 928, 933, 935, 938, 939, 946 to 948, 953, 955, 957, 958, 964, 968, 971 to 973, 978, 979) and forty-two sites were lithic scatters (12-Wb-913, 914, 916, 919, 922 to 926, 929 to 932, 934, 936, 937, 940 to 945, 949 to 952, 954, 956, 959 to 963, 965 to 967, 969, 970, 974 to 977).

Sites Locations Confidential

Not for Public Disclosure

Figure 62. A portion of the USGS 7.5', Indiana Quadrangles showing the location of sites 12-Wb-912 to 979.

Sites Locations Confidential

Not for Public Disclosure

Figure 63. 2005 aerial showing the location of sites 12-Wb-912 to 979.

The sites were found on all landforms present in the survey area. Thirteen sites were discovered on outwash terrace; nine on Fox soils (12-935 to 937, 956 to 958, 977 to 979), three on Milton soils (12-Wb-923, 924, 934) and one that covered both Fox and Milton soils (12-Wb-933). Fifty-five sites were discovered on the floodplain; all on Genesee soils (12-Wb-912 to 922, 925 to 932, 938 to 955, 959 to 976). Seven sites in the outwash terrace were lithic scatters (12-Wb-923, 924, 934, 936, 937, 956, 977) and six were isolated finds (12-Wb-933, 935, 957, 958, 978, 979). Thirty-five sites in the floodplain were lithic scatters (12-Wb-913, 914, 916, 919, 922, 925, 926, 929 to 932, 940 to 945, 949 to 952, 954, 959 to 963, 965 to 967, 969, 970, 974 to 976) and twenty were isolates (12-Wb-912, 915, 917, 918, 920, 921, 927, 928, 938, 939, 946 to 948, 953, 955, 964, 968, 971 to 973).

Due to the low number of artifacts on many of the sites within the project area, and the eroded nature of soils, many sites were determined not to qualify for listing on the State or National Registers. Multiple sites within Survey Area 13 were considered potentially eligible for listing on the State and/or National Registers. These sites are 12-Wb-913, 925, 929, 940, 941, 949, 951, 952 and 962.

Site 12-Wb-913 contained a high density of artifacts including a Late Woodland component. The site also contained prehistoric pottery, a rare surface artifact along the Wabash. The remaining sites recommended for testing were large lithic scatters. A Phase II investigation to determine State and National Register eligibility is recommended for sites 12-Wb-913, 925, 929, 940, 941, 949, 951, 952 and 962. Additionally, portions of Survey Area 13 contained Genesee soils, a well drained, low energy alluvial soil. Subsurface investigation of portions of the survey area and sites discovered in Genesee soils including 12-Wb-912 to 922, 925 to 932, 938 to 955, 959 to 976 are recommended for subsurface investigation (Figure).

Density

Survey Area 13 consisted of approximately 55.7 acres of floodplain and 8.0 acres of outwash terrace. Within Survey Area 13, a density of one prehistoric site per 0.6 acres occurred on outwash terrace and covered 2.4% of the surface area, one prehistoric site per 1.0 acres occurred within the floodplain and covered 9.4% of the surface. An overall density of prehistoric sites within Survey Area 1 was one site per 0.9 acres. While the density of sites within the floodplain was lower than on the outwash terrace the utilized portion of the landscape is much greater.

Survey Area 14

Survey Area 14 was located on the south side of the Wabash River in Noble Township, Wabash County in Reserve 11, Township 27 North, Range 5 East as shown on the USGS 7.5' Richvalley Quadrangle (Figure 64). The property was surveyed on March 13th, 2009. Ground surface visibility was approximately 70%. Approximately 6.9 acres were surveyed consisting of 6.9 acres of wind deposited sediments. The area contained Chelsea (ChC) and Milford (Mm) soils. One site was encountered during the survey. The site dimensions determined the area surveyed and therefore covered the entire survey area. Components identified in the site included Late Archaic, Middle Woodland and Late Woodland.

Sites Locations Confidential

Not for Public Disclosure

Figure 64. A portion of the USGS 7.5' Richvalley, Indiana Quadrangles showing the location of Survey Area 14.

Artifacts

A total of 1,040 artifacts and more than 200 fire-cracked rocks were encountered in Survey Area 14 on site 12-Wb-980 (Figures 65, 66). Table 18 provides a list of the artifacts recovered by category. Artifacts are listed with more detail in Appendix E. Only a few of the artifacts recovered were diagnostic of a particular time frame.

Table 18. Artifacts from Survey Area 14 Site 12-Wb-980			
Category	No.	Category	No.
biface fragment	12	prehistoric pottery body, grit temper	1
bipolar	1	Snyder's	1
core	14	stage 2 biface	9
edge modified flake	23	stage 4 biface	2
graver	1	Table Rock	1
other chipped stone	1	Triangular Cluster	1
point fragment	2	unmodified flake	971

One artifact was recovered from the Late Archaic period, one from the Middle Woodland and one from the Late Woodland (Figure 67). A Table Rock point was recovered from site 12-Wb-980 and manufactured from an unknown chert. Table Rock points date to approximately 3000 to 1000 BC (Justice 1987: 124). A Snyder's point was recovered from site 12-Wb-980 and manufactured from an unknown chert. Snyder's points date to approximately 200 BC to 400 AD (Justice 1987: 203). A Triangular Cluster point was recovered from site 12-Wb-980 and manufactured from Liston Creek chert. Triangular Cluster points date to approximately AD 800 to 1300 (Justice 1987: 224). Additionally, a body sherd of grit tempered prehistoric pottery was recovered from the area. The sherd was undecorated and is not diagnostic.

Sites Locations Confidential

Not for Public Disclosure

Figure 65. A portion of the USGS 7.5' , Indiana Quadrangles showing the location of sites 12-Wb-980.

Sites Locations Confidential

Not for Public Disclosure

Figure 66. 2005 aerial showing the location of site 12-Wb-980.



Figure 67. Diagnostic artifacts from Survey Area 14, 12-Wb-980: a) Triangular Cluster point, b) grit tempered pottery body, c) Snyder's point, d) Table Rock point.

Sites

Site 12-Wb-980 contained a high density of artifacts including a Late Archaic, Middle Woodland and Late Woodland component and the assemblage contained exotic cherts including Burlington, and prehistoric pottery, a rare surface artifact along the Wabash. The density of fire-cracked rock on the site was also high and suggests that domestic activities were being carried out on the site. The eroded nature of Chelsea sand that the site is on argues against intact deposits. However, with the density of material on the site and the unknown stability of eolian sand deposits outside of the lake basin environment in Indiana, testing of the site to determine whether intact deposits remain is recommended. Additionally, because it is unknown how much the sand dune may have migrated across paleo-surfaces, it is recommended that the site be covered by a subsurface investigation to determine whether intact buried deposits exist on the site.

Density

Survey Area 14 consisted of approximately 6.9 acres of wind blown deposits. It was noted that the deposits represent a unique environment within the valley. The sand dune exceeded two meters in height above the surrounding floodplain. It was surrounded to the north by productive cropland and to the south by a now drained wet prairie. The Wabash River is approximately 750 m northwest of the site and the uplands are approximately 400 m east of the site. The combination of well drained elevated soils and the diverse ecozones and ecotones in proximity to the site would have made the site an ideal locus of activity. It is not entirely surprising then that the entire surface area of the sand dune was covered in cultural debris.

Summary/Discussion

Approximately 791 acres were surveyed during this project and 467 new archaeological sites were recorded. The Little River and Wabash River valleys were sampled from fourteen locales. The survey documented human occupation and use of the Little River and Wabash valleys as early as the late Paleo-Indian period. In the absence of intact deposits through excavation it is presumptive to assign functionality to a site, and site types were not assigned beyond isolates and scatters. However, it appears likely based upon the variation in artifact classes discovered on the sites that multiple site types were represented. The pre-contact settlement in the valley can be characterized as a combination of small, short term-extractive camps, and long term-possible camp and/or potential village sites. Some sites in the valley were, either through chance or desirable features, repeatedly occupied throughout the pre-contact era. Flooding episodes may have represented the greatest impediment to permanent settlement within

portions of the floodplain. Chert resources in addition to animal and plant resources attracted people, and it is certain that plant cultivation occurred within portions of the valley. Gessie soils dominate the floodplain and settlement appeared to favor the highest, and therefore best drained, portions of the Gessie soils.

Ross soils, which are well drained mollisols, are strongly correlated with pottery bearing sites in the White River valley (Stephenson 1984: 120). Stephenson claimed that in the Upper White River “Ross soils, the only dry prairie-like soils within the drainage, were located adjacent to, directly across the river from, or within one-half mile of these sites” (Stephenson 1984: 119). This may be the preferred settlement pattern within the Woodland period in Indiana. However, multiple sites with pottery have been recovered outside of the valley setting within the Upper Wabash drainage that do not conform to the Ross-centric settlement (Cochran 1985). If the Ross soils are regionally as important for site selection as they appear to be, than the dearth of Ross soils within the Upper Wabash River valley may be the reason for an apparent random settlement system associated with pottery bearing sites.

Artifacts

The project recovered 10, 237 prehistoric artifacts and 556 historic artifacts (Table 19). The majority of prehistoric artifacts consist of lithic debitage. The edge modification of several hundred flakes indicates the debitage could function as expedient tools. The majority of formal tool types were projectile points dating to the Paleo-Indian, Early Archaic, Middle Archaic, Late Archaic, Early Woodland, Middle Woodland and Late Woodland/Prehistoric periods (Table 20). Other chipped stone tools consist of endscrapers, graters and a possible adze.

Table 19 Artifacts Recovered			
Prehistoric	No.	Historic	No.
Unmodified flake	9344	Ceramics	307
Edge modified flake	225	Container glass	172
Core	208	Canning lid liners	7
Bipolar	29	Flat glass	2
Bifaces	230	Button	4
Endscrapers	11	Horseshoe	1
Graver	4	Metal, unidentified	1
Points and point fragments	139	Nail	2
Block	11	Washer, iron	1
Other chipped stone	8	Electrical Insulator	40

Other chipped stone, possible adze	1	Coal	1
Prehistoric grit temper pottery body	5	Fencing staple	1
Prehistoric grit temper, cord	1	Doll pieces (porcelain)	2
Burned bone	20	Waterbury Co. bronze button	1
		Mammal bones	11

Table 20 Projectile Points by Period	
Cultural Period	Projectile Point Styles
Paleo-Indian	Agate Basin (1), Late Paleo-Indian fluted (1)
Early Archaic	Decatur (1), Kanawha (2), Kirk corner notched (4), LeCroy (1), Palmer (2), St. Charles (1), Thebes (3), unidentified Early Archaic (3)
Middle Archaic	Godar (1), Godar endscraper (1), Raddatz side notched (3)
Late Archaic	Brewerton (2), Brewerton corner notched (2), Brewerton corner notched endscraper (3), Brewerton eared notched (1), Buck Creek Barbed (1), Karnak (2), Karnak stemmed (1), Lamoka (3), Late Archaic Stemmed Cluster (2), Late Archaic Stemmed Cluster endscraper (1), Matanzas (4), Motley (1), Riverton (4), Table Rock (3), unclassified Late Archaic (1)
Early Woodland	Dickson Cluster (1), Kramer (1)
Middle Woodland	Middle Woodland expanding stemmed (1), Snyder's (1), Snyder's endscraper (1)
Late Woodland/ Late Prehistoric	Triangular points (34), Commissary knife (1), Jack's Reef corner notched (1)

Chert

The chipped stone artifacts were dominated by Liston Creek chert (90.72%) (Table 21). Unknown cherts made up the next most frequent chert type. Most of these cherts were what Cantin (2005) defines as gravel cherts. These cherts are locally available eroding from outwash, till and sorted in stream gravels and bars.

Attica chert was the next highest identified material. Attica chert outcrops significantly downstream (>75 km) from the survey areas. Including Attica chert as an exotic, cherts from down the Wabash and further west into Illinois (Burlington, Dongola) made up seventy nine percent of exotic cherts. Cherts from southern Indiana and Ohio each made up nine and eleven percent respectively. However, because Attica is a special case and is located within the same

drainage basin as the survey areas the numbers have been calculated to exclude Attica from the totals as well. Under this method the exotic materials are almost evenly distributed as coming from Ohio (40%), Southern Indiana (31%) and Illinois (28%). No cherts associated with the Great Lakes region, *ie*, Bayport, were discovered during the survey.

Aside from Liston Creek chert the closest chert resource to the project area is Kenneth chert. Kenneth chert is available in bedrock exposures and creek beds less than 20 km from the western end of the research universe. Kenneth chert is considered to be a “good-quality chert occurring in a chert poor section of the state” (Cantin 2005: 31). Kenneth chert is also an easily identified chert during sorting. It is interesting to note then that Kenneth chert is such a small amount of the identified chert within the survey at only 0.13% of the total.

Table 21 Chert Raw Materials					
Chert	No.	%	Chert	No.	%
Attica	75	0.73%	metaquartzite	2	0.02%
HT Attica	2	0.02%	Middle Jeffersonville	1	0.01%
HD Attica	1	0.01%	orthoquartzite	5	0.05%
Burlington	8	0.08%	slate	6	0.06%
Dongola	1	0.01%	unknown	757	7.42%
Flint Ridge	3	0.03%	HT unknown	46	0.45%
fossileiferous	3	0.03%	HD unknown	5	0.05%
Kenneth	13	0.13%	Upper Mercer	8	0.08%
Liston Creek	8972	87.89%	Wyandotte	8	0.08%
HT Liston Creek	256	2.51%	HD Wyandotte	1	0.01%
HD Liston Creek	33	0.32%	Zaleski	2	0.02%
HT= heat treated HD= heat damaged					

Sites

Of the 467 archaeological sites, 400 had unidentified prehistoric components (Table 22). The identified precontact components consisted of Paleo-Indian, Early Archaic, Middle Archaic, Late Archaic, Early Woodland, Middle Woodland, and Late Woodland/Prehistoric. Twenty-eight sites had historic components.

Table 22 Site Components		
Component	No.	Comment
Unidentified Prehistoric	400	17 multicomponent (Historic)
Paleo-Indian	2	0 multicomponent
Early Archaic	16	3 multicomponent
Middle Archaic	5	1 multicomponent
Late Archaic	24	7 multicomponent
Early Woodland	2	1 multicomponent
Middle Woodland	3	2 multicomponent
Late Woodland/Prehistoric	26	4 multicomponent
Historic	28	21 multicomponent (Prehistoric)

The frequency of identified components encountered in the project area was somewhat different than that previously noted for the till plain of east central Indiana (Cochran 1994, McCord 2005, McCord 2007). Late Woodland/Prehistoric component sites were the most commonly encountered followed by Late Archaic and Early Archaic. Paleoindian, Middle Archaic (non Matanzas), Early Woodland and Middle Woodland were encountered in low frequency, but these components are more uncommon in the Till Plain region.

Historic settlement

Results from the survey were not able to elucidate historic Native American or early Euro-American settlement within the study area. No artifacts were discovered that were definitively from historic Native American occupations and only a few dated to an early Euro-American time period. Only 28 sites with Historic components were discovered and most of these were small scatters of less than 10 artifacts that often occurred with precontact artifacts.

Only one survey area located between the Mississinewa River and the Wabash River contained sites with substantial historic assemblages that had early historic dates between 1800 and 1850. Two possible historic Miami village locations were recorded within the survey area (Worthington 1824, Wepler 1984), the area was part of the Godfroy Reserve, and it was the home of Francis and Gabriel Godfroy (Rafert 1996: 120). The area was historically important for the Miami, but no direct evidence of a Miami occupation was recorded from survey. Several sites with early historic artifacts were recommended for further work in this area.

Density

The project documented a very high density of archaeological sites with an average of 1 site per 1.7 acres and an average density of 12.94 artifacts per acre surveyed. Table 23 demonstrates site density by landform. The outwash terrace had a very high density. A comparison to other valley studies within the region is presented in Table 24. Compared to regional densities the project had the second highest site density documented for the region (Table 25).

Table 23 Landform Density			
Landform	Acres Surveyed	No. Sites	One Site per Acre
Floodplain	496.1	298.5	1.7
Outwash Terrace	143.5	115	1.2
Till Plain	118.0	49.5	2.4
Lake Plain	21.3	4	5.3
Peat	6.5	0	NA
Eolian	6.9	1	6.9
* sites covering two landforms were split in half between those landforms			

Table 24 Regional Site and Artifact Densities in Valley Settings			
Area	Acres Surveyed	One Site per Acre	Artifacts per Acre
White River Valley (McCord 2005)	155	3.97	7.45
Upper Wabash River (Wepler and Cochran 1983)	262	1.06	26.7
St. Joseph River Valley (Jeske 1992)	2830	50	0.05
St Mary's River Valley (Jeske 1996)	2011	15.3	1.3

Table 25 Artifact Densities					
Survey Area	Acres	No. Sites	Sites per Acre	No. Artifacts	Artifacts per Acre
Area 1 (Little River Valley)	50.6	39	1.3	469	9.3
Area 2 (Till Plain)	66.6	17	3.9	58	0.9
Area 3 (Till Plain)	15.4	7	2.2	27	1.8
Area 4 (Little River Valley)	30.5	13	2.3	71	2.3
Area 5 (Wabash Valley)	37.7	26	1.5	159	4.2
Area 6 (Alluvial Fan in Wabash Valley)	71.1	5	14.2	52	0.7
Area 7 (Outwash Terrace Wabash Valley)	11.4	0	0.0	0	0.0
Area 8 (Outwash Terrace Wabash Valley)	35.7	19	1.9	56	1.6
Area 9 (Wabash Valley)	174.3	102	1.7	2652	15.2
Area 10 (Wabash Valley)	59.1	65	0.9	2195	37.1
Area 11 (Wabash Valley)	79.0	64	1.2	2011	25.5
Area 12 (Wabash Valley)	89.0	42	2.1	992	11.1
Area 13 (Wabash Valley)	63.7	68	0.9	1069	16.8
Area 14 (Sand Dune Wabash Valley)	6.9	1	6.9	1040	150.7

The site and artifact densities recorded for the Wabash River valley supports the interpretation of repeated mixed short term and long term settlement in the valley. Site duration was probably the most intensive at areas with substantial quantities of fire-cracked rock, while areas with substantial quantities of lithic debris and low amounts of fire-cracked rock most likely were utilized as extractive camps. Site and artifact densities along the Little River, with the exception of three sites (12-Hu-1260, 1262, 1270), appeared to be short term camps. Site and artifact densities for the Wabash River valley indicate more intensive and longer duration occupations.

Recommendations

Of the 467 archaeological sites discovered by this project, 179 were not considered eligible for listing on the State or National Registers of Historic Places. Most of these sites were isolated finds or small scatters of artifacts with no or low numbers of fire-cracked rocks. An

additional 287 were on alluvial soils and had the potential for intact subsurface deposits which may qualify for listing on the State or National Registers of Historic Places, and 51 surface sites were determined to be potentially eligible for listing on the State or National Registers of Historic Places and were recommended for additional assessment (Table 26).

Table 26 Site Recommendations	
Recommendation	Site No.
Not eligible	12-Hu-1261, 1263 to 1269, 1271 to 1335 12-Mi-629 to 633, 635, 639, 640, 743, 744, 774, 763, 775, 777, 778, 781, 782, 789 to 791, 793, 794, 797 to 802, 804, 806 to 810, 819, 820, 823 to 832, 841, 843 to 849, 855 to 859, 861, 864 to 870 12-Wb-851 to 870, 904, 906 to 910, 923, 924, 933 to 937, 956 to 958, 977, 978, 979
Subsurface assessment	12-Mi-610 to 615, 617 to 620, 622 to 626, 628, 634, 636, 637, 641 to 645, 648, 650 to 654, 657 to 660, 662, 664 to 669, 671, 672, 674 to 676, 678, 681, 684 to 689, 691 to 693, 695, 697 to 711, 713 to 716, 720 to 742, 745 to 752, 754 to 762, 764 to 773, 776, 779, 780, 783 to 788, 792, 795, 803, 805, 811, 813 to 818, 833 to 838, 842, 850, 854, 862 12-Wb-872 to 877, 879 to 901, 903, 905, 911, 912, 914 to 922, 926 to 928, 930 to 932, 938, 939, 942 to 948, 950, 953 to 955, 959 to 961, 963 to 976
Potentially eligible (Testing)	12-Hu-1260, 1262, 1270 12-Mi-638, 796, 821, 822, 851, 853, 858, 860
Subsurface assessment and Potentially eligible (Testing)	12-Mi-616, 621, 627, 646, 649, 655, 656, 661, 663, 670, 673, 677, 679, 680, 682, 683, 690, 694, 696, 712, 717, 753, 812, 839, 840, 852, 863 12-Wb-871, 878, 902, 913, 925, 929, 940, 941, 949, 951, 952, 962, 980

EXCAVATIONS AT BIG BANGS AND LITTLE BANGS by Beth McCord

Introduction

The Archaeological Resources Management Service (ARMS) at Ball State University conducted a data enhancement project for threatened archaeological resources in the Wabash River valley in Miami, Wabash and Huntington Counties, Indiana, for a FY2008 Historic Preservation Fund Grant (Grant #21719-13) (Figure 68). The project involved a pedestrian survey of approximately 800 acres of agricultural land and documentation of three mounds recorded [REDACTED] at the J. Edward Roush Lake: Big Bangs (12-Hu-25), Little Bangs Mounds (12-Hu-26) and unnamed mound (12-Hu-27). This report covers the archaeological documentation and limited excavations of the Roush Lake mounds. The primary objectives of the mound project were to document exposed sections of the mounds, recover data, backfill the mounds in order to better protect and conserve the sites, and to nominate them to the State and National Registers. The project was conducted under ARPA permit # DACW27-4-09-010 and DHPA approved plan # 2008026.

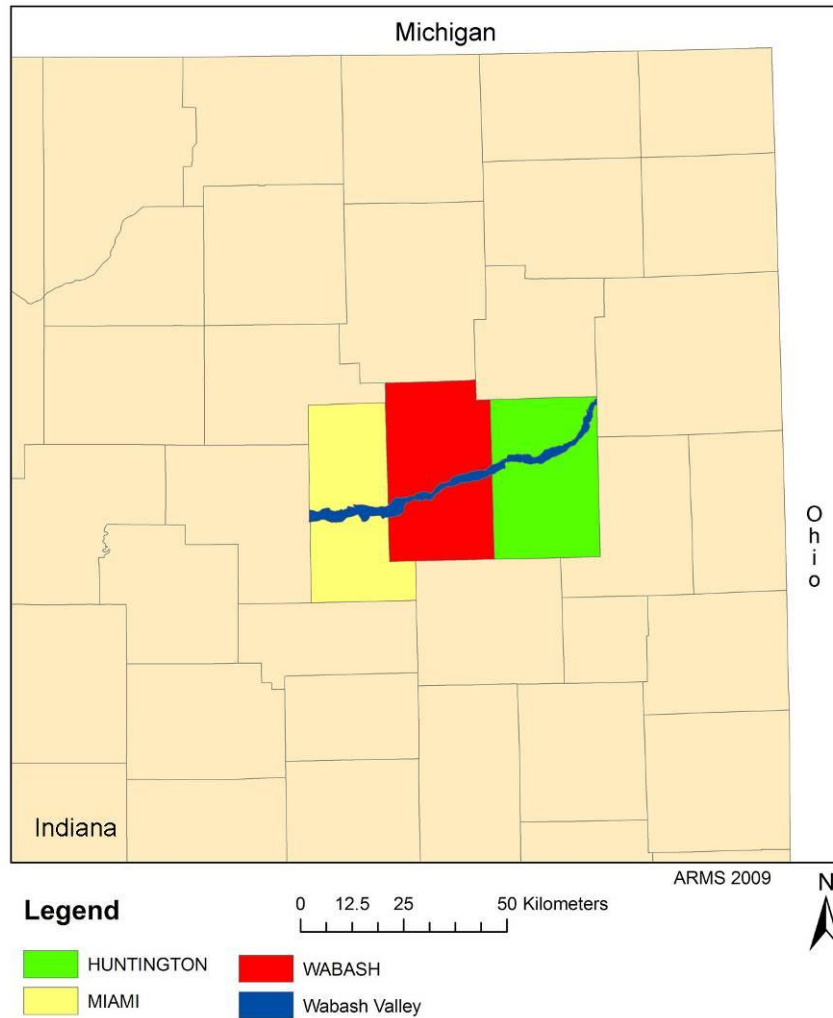
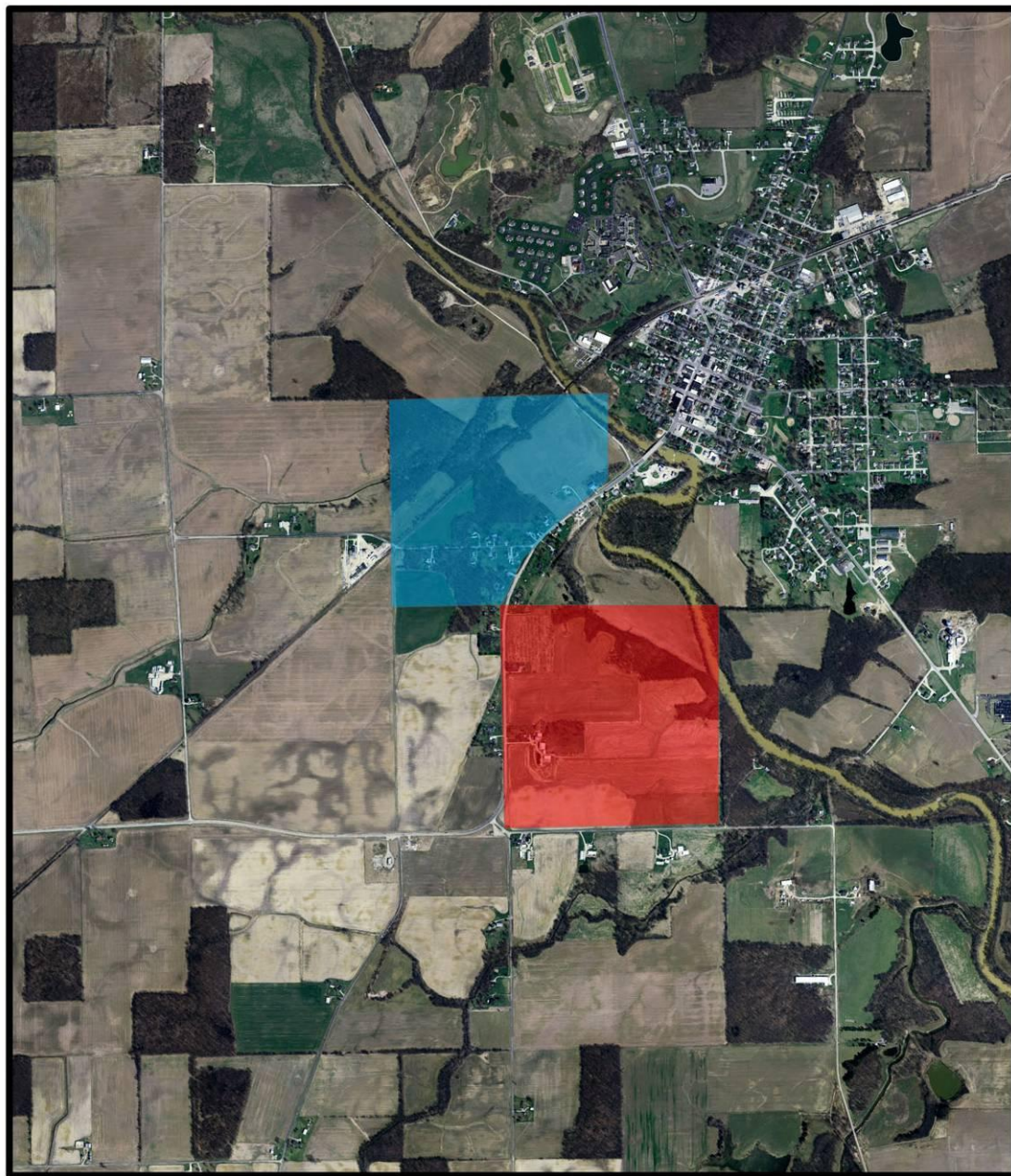


Figure 68. Location of the project area in Indiana.

Background

The first report for mounds in the Upper Wabash drainage in Miami, Wabash and Huntington counties appeared in General Land Office (GLO) survey notes. An ancient mound was reported in 1823 by T.G. Noble east of Warren in Huntington County. The site area, designated as 12-Hu-902, was investigated by ARMS staff in 1989, but no evidence of a mound was found (Indiana Historic Sites and Structure Inventory-Archaeological Sites). Two mounds were reported in GLO notes in Wabash County, 12-Wb-517 and 518, but these are located in the Eel River drainage outside of the grant project area.

The 1875 Geological Report for Huntington County (Collett 1876:131) reports two mounds on a high eminence on the bend of the Salamonie River opposite Warren. One mound was located on Daniel Adsit's property and was 25' in diameter and 6' high. An excavation had been made in the top, but no relics were reported. The other mound was located approximately a quarter of mile to the northwest in an orchard on John D. Jones property. The mound was near the barn, but was nearly destroyed by plowing. An 1877 Historical Sketch of Huntington County, notes the first school house in Salamonie Township was "built near the Mounds, south of Warren" (Anonymous 1877:29). The two mounds were apparently identified in 1891 in Cyrus Thomas' (1891) *Catalogue of Prehistoric Works East of the Rocky Mountains*. The report states two mounds were located on the Salamonie River, in the southeast corner of Huntington County opposite the town of Warren. They were partially examined (Thomas 1891:75). The current landowners of the Adsit and Jones properties were contacted in an effort to survey the areas (Figure 69). One owner (former Jones property) did not respond to our inquiries and the other (former Adsit property) did not know anything about a mound on his property. Figure 70 shows the most probable locations for the two mounds factoring in Collett's (1876) description, the topography and soils of the area.



Legend

Landowners

- Adsit Land
- Jones Land

0 250 500 1,000 Meters

ARMS 2009



Figure 69. Aerial map showing the location of the Adsit and Jones property.



Figure 70. Potential Mound Locations.

No mounds are reported in earlier histories of Miami County.

The only other mounds reported in the Upper Wabash Valley in Miami, Wabash and Huntington counties are from more recent archaeological investigations. The Big Bangs and Little Bangs mounds (12Hu25/26), and 12Hu27, an unnamed mound (Figures 71, 72) were recorded during the 1963 IU survey of the Huntington Reservoir prior to inundation (Kellar 1964, Gerald 1964). Huntington Reservoir is now known as J. Edward Roush Lake [REDACTED]. The Big Bangs and Little Bangs mounds were partially excavated in 1963 and 12Hu27 was tested (Gerald 1964). The following is a summary of the excavations reported by Gerald (1964).

Sites Locations Confidential

Not for Public Disclosure

Figure 71. A portion of the USGS 7.5' Majenica, Indiana Quadrangle showing the location of Big Bangs, Little Bangs and 12Hu27.

Sites Locations Confidential

Not for Public Disclosure

Figure 72. View of the Wabash Valley showing the location of Big Bangs, Little Bangs and 12Hu27.

Big Bangs

Big Bangs was reported as 40' (12 m) north-south by 50' (15 m) east-west and 4 feet (1.2 m) tall. The mound had been potted in the center and a trench was evident on the western side. The mound was cleared of trees and excavated on a 10' (3 m) grid. Standing bunks were left between each square excavated. The excavation was conducted in both natural level and arbitrary levels of 12" (0.30 m). Figure 73 shows the plan of the excavations. Figure 74 shows the profile of the mound.

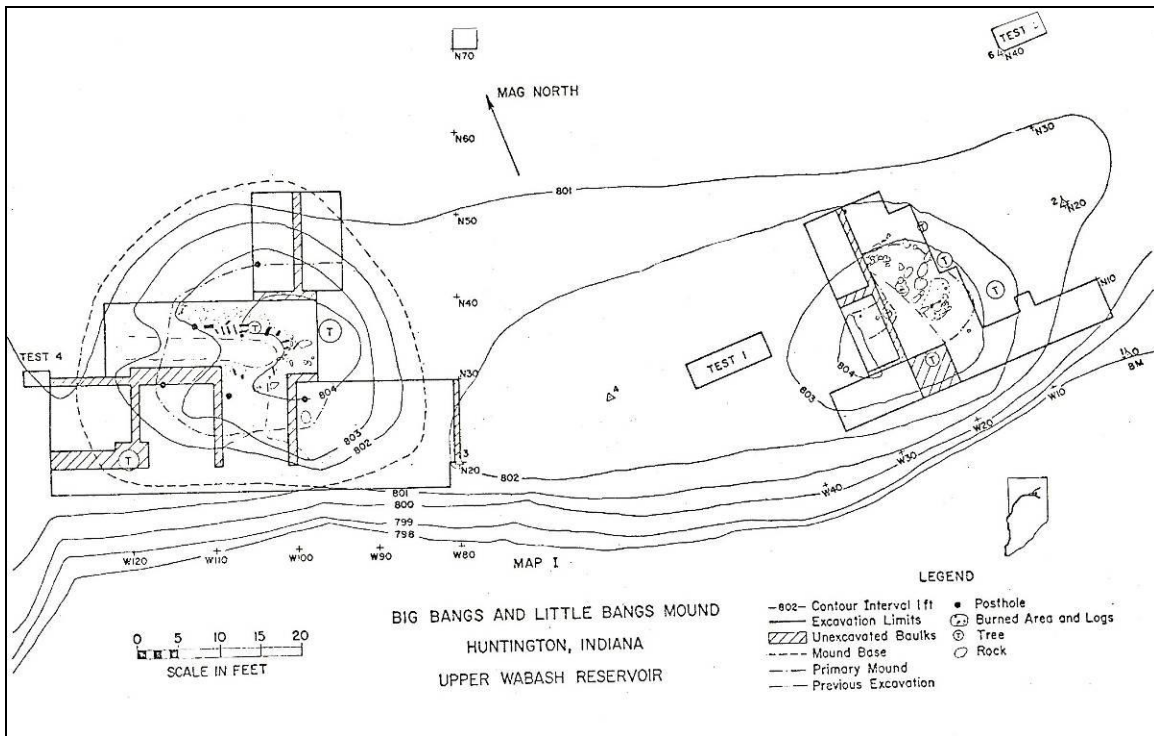


Figure 73. Gerald's (1964) plan map of Big Bangs and Little Bangs.

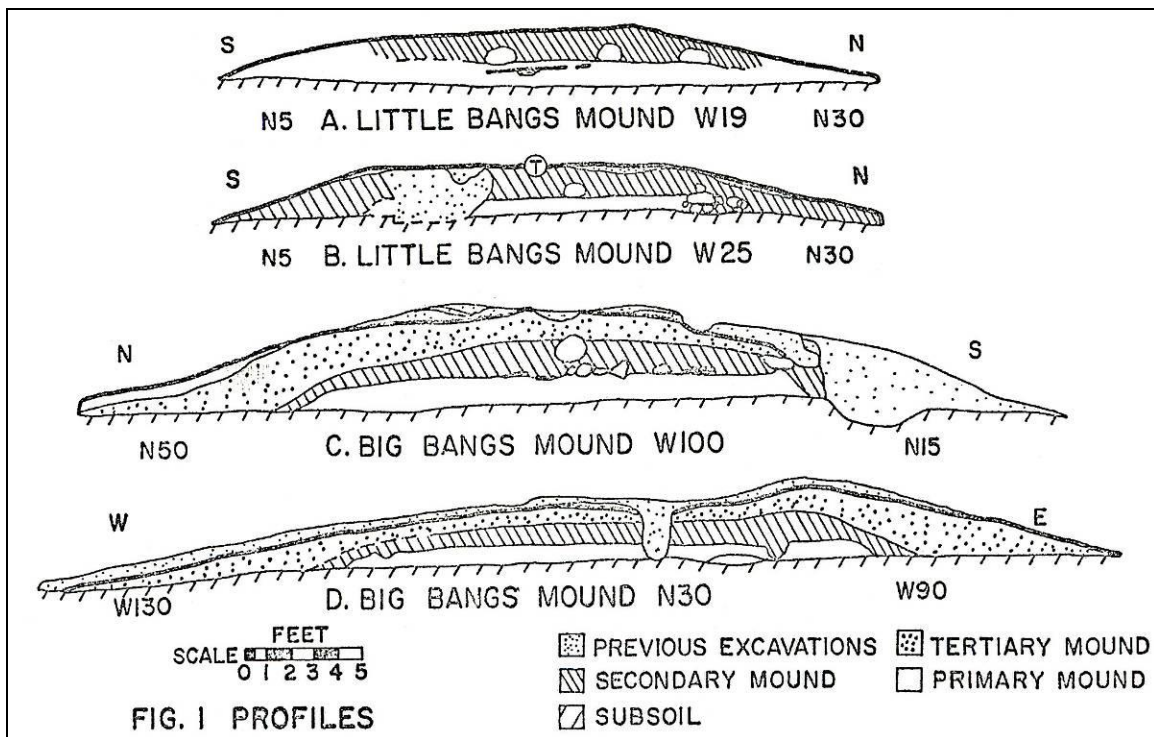


Figure 74. Gerald's (1964) profiles of Big Bangs and Little Bangs.

The primary mound consisted of a flat platform of fine consolidated loess containing charcoal flecks and flint chips. The platform was approximately 20' (6 m) east-west by 22' (6.7 m) north-south. It was between 0.5' and 1' (0.15 and 0.30 m) in height being thickest at the center. A rim at the edge of the platform was noted on the south side. No humus was encountered between the primary mound and the natural yellow-orange clay that the platform was built on. The primary mound apparently blocked and filled in a small natural drainage. Within the primary mound, four post holes and a stake hole were reported. Artifacts, including pottery, were reported from the primary platform.

In the central area, on top of the primary mound, a layer of burned logs was documented. The layer ranged between 0.1 and 0.5' (0.03 and 0.15 m) thick. Fire-cracked rocks were found scattered across the remainder of the primary mound. They did not occur in the layer of logs. Large limestone rocks marked the edges of the log deposits and were placed on top of the logs. No large limestone rocks were found in the central area, but the area had been previously disturbed by pothunters. Burned red earth was found on the primary platform under the logs on the north side.

Over the large rocks and burned logs, the secondary mound layer had been placed. The secondary mound fill was between 0.5' (0.15 m) at the periphery to 1.25' (0.38 m) at the center of the mound. The secondary fill was described as a yellow loess or fine sandy dust. Artifacts were found in this fill. This secondary mound capped and extended beyond the primary mound edges. One post mold was found extending into the subsoil adjacent to the edge of primary mound under the secondary mound fill.

Big Bangs also had a tertiary mound. The soil was reported as a mix of orange crumbly clay and white sandy loess. This construction episode did not contain any artifacts. A humus zone, no more than 4" (0.10 m) covered the surface of the mound. The humus zone was thicker around the base of the mound, due to erosion.

Little Bangs

Little Bangs was reported as 25' (7.6 m) north-south by 30' (10 m) east-west and 3 feet (1 m) tall. The mound was potted with many shallow excavations. The mound was also cleared of trees and excavated on a 10' (3 m) grid. Figure 74 shows the plan of the excavations and Figure 75 shows the profile of the mound. Little Bangs was constructed in a similar manner to Big Bangs, except it did not have a tertiary mound.

The primary mound was not as hard or as white as Big Bangs. It was only defined in a limited area, due the previous disturbance. There were areas of intensive burning on the primary

platform under the burned logs. On the north side of the primary platform a rock wall approximately 3' (1 m) long and 1.13' (0.34 m) in height was recorded. Flint chips, scrapers and one point were reported from the primary mound.

The secondary mound was apparently similar to Big Bangs. Artifacts consisting of tool debris were reported. No formal tools or pottery were identified. A humus layer covered the mound.

12-Hu-27

Mound 12-Hu-27 was given only a cursory description by Gerald (1964:3). Figure 8 shows the contour map, location of the excavation and profile of the unit reported. The mound was described as a remnant that was almost entirely removed at an earlier date. The profile shows an area of red, burned clay. No artifacts were reported from the excavation.

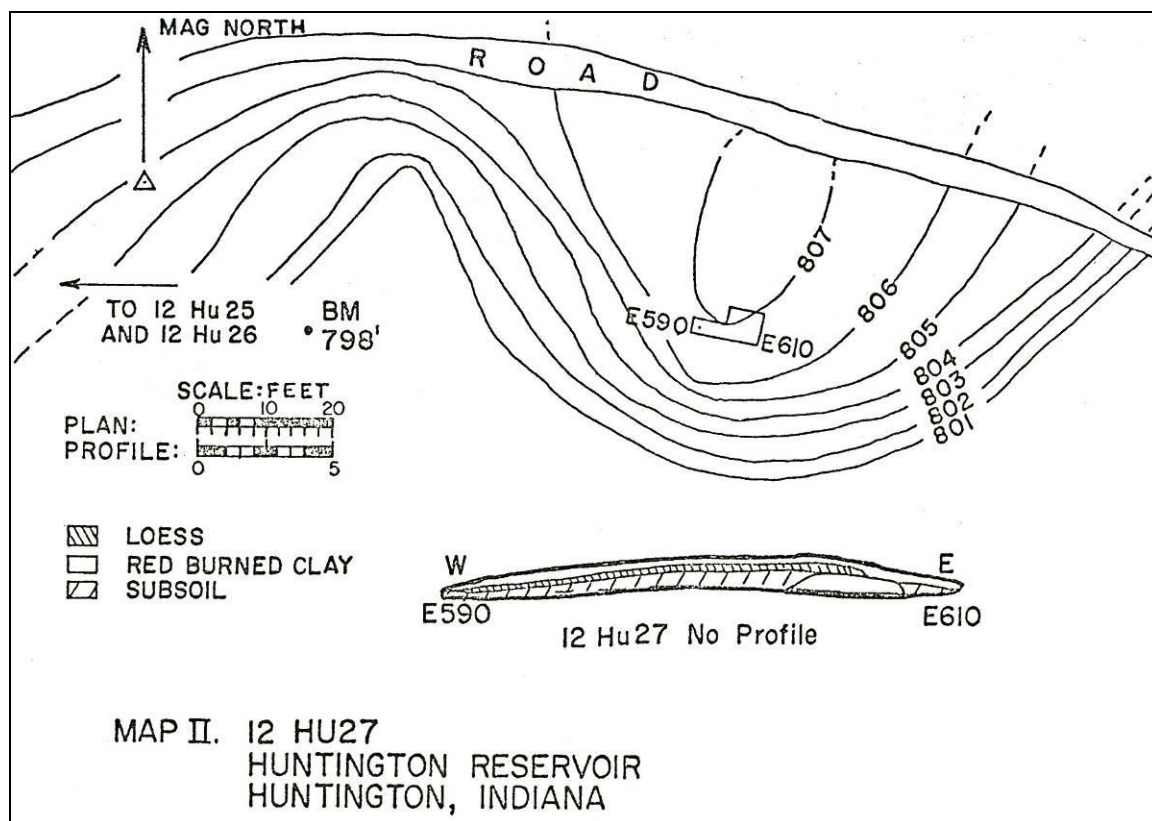


Figure 75. Gerald's (1964) plan and profile of 12Hu27.

Summary

The regional context for the mounds was unclear to Gerald (1964:18-20) and other researchers (Wepler and Cochran 1983a, 1983b). No human remains were found in the mounds. Artifacts from both mounds were reported as rare with only 50 specimens catalogued. Cord marked ceramics and points were related to the Late Woodland Michigan Owasco (Gerald 1964:18-19). The structure of the mounds was related to Hopewell Ginther Mound in Ross County Ohio (Gerald 1964: 19). Unfortunately the excavations were not backfilled and they are situated within a modern campground at Roush Lake. Campsites were built immediately adjacent to the open mounds and camping activities and exposure have caused deterioration (Wepler and Cochran 1983b:120).

Research Orientation

Systematic archaeological investigations of the Upper Wabash River valley are a fairly recent phenomenon. Prior to 1980, the only large scale investigations were the surveys carried out prior to inundation of the Mississinewa, Salamonie and Huntington reservoirs (Kellar 1963, 1964a, 1964b). Unfortunately, these investigations were conducted under a perspective that was biased toward the Ohio River valley and discounted the importance of precontact settlement in the till plain region of Indiana (Kellar 1966). Since 1980, ARMS has carried out several focused archaeological investigations in the Upper Wabash Drainage basin of Indiana that have effectively reversed the earlier perspective (Wepler 1982, Wepler and Cochran 1982, Wepler and Cochran 1983a, Wepler and Cochran 1983b, Anuszczyk and Cochran 1984, Holsten and Cochran 1984, Cochran and Buehrig 1985, James and Cochran 1986). This research has resulted in increased site data, construction of regional chronologies (James and Cochran 1986, Angst 1997), compilation of site and artifact densities for some environmental zones in the region (Cree 1992), and settlement pattern models (Holsten and Cochran 1985, Zoll 1993, Verbka 1994). These projects have shown that the Upper Wabash drainage is an environmentally distinct region that is somewhat different from other parts of the Tipton Till Plain (Wepler 1982, Wepler and Cochran 1983a and 1983b).

No survey of reported mounds has been conducted in the Upper Wabash drainage although mounds and enclosures appear to occur in far less density than in the adjacent upper White River valley (ARMS files, McCord and Cochran 1996). Only the three mounds at Roush Lake are known to be extant.

Methods

The methods developed for the project were designed to cause minimal disturbance, but gather new information. Obtaining radiocarbon samples and documenting the mound structure were key elements in answering the research questions. Investigations at the Roush Lake mounds occurred between October 31, 2008 and November 14, 2008. The author served as the Principal Investigator.

Instrument Survey

All instrument survey was accomplished using a Sokkia SE 6 total station with SDR 33 fieldbook. Survey information was downloaded utilizing Prolink software. The data was then imported into Surfer, Photoshop and ARCGIS software to create the contour and site maps. Two datums were established utilizing a large landscape tie. The datum locations were recorded with a Trimble GeoXT using NAD 1983. Datum one is located at 632320.13 E, 4522458.14 N and datum two was located at 632532.23 E, 4522455.99 N.

Surface Survey

The surface of Big Bangs (12-Hu-25) was primarily bare dirt with very little vegetation. Artifacts were found across the surface of the mound and down the terrace slope towards the river. The artifacts were thought to originate from active erosion due to camper use and from backdirt piles from the original excavation. All observed artifacts were collected from the surface of Big Bangs and the slope before our excavations began. Transects spaced approximately 1 m apart were walked across the mound. All artifacts were collected, except for fire-cracked rock that was noted but not collected. No surface collection was conducted from Little Bangs or 12-Hu-27.

Excavation

The original intent for the excavation was to re-excavate five old units and clean the profile walls with as little new excavation as possible. While areas previously excavated were evident, the walls of the units were too severely slumped to reopen and actually have any profile. Our units were placed near old units, but within intact portions of the mounds. To minimize the

destruction of intact portion of the mounds, the units were 50 cm wide and between 1.5 and 2 m long. Three units were excavated in Big Bangs and two were excavated in Little Bangs. No units were excavated in 12-Hu-27.

Each unit was excavated in 10 cm arbitrary levels until sterile subsoil was encountered. All excavated soil was screened through 6.4 mm mesh. The excavation walls were profiled using a consistent scale. A soil sample was taken from the bulk of each unit in 10 cm levels within defined cultural strata for analysis and fine screening in the lab. Level forms were completed and field notes were kept by the Principal Investigator. Samples appropriate for radiocarbon dating were collected as available. Diagnostic artifacts were mapped *in situ* and individually bagged when possible. Non-diagnostic artifacts were provenienced by unit and level. Fire-cracked rock were counted and weighed by level but were discarded. The excavated units were recorded on a site plan and recorded from a site datum. The project was documented by digital photographs.

Laboratory

All artifacts were taken to the ARMS laboratory for processing and analysis. Laboratory methods followed standardized ARMS procedures. Artifacts were cleaned, identified and catalogued using categories established for the definition of technological classes of lithic artifacts (Cochran 1986)(Appendix B). Soil samples were water screened through .5 mm wire mesh. Metrical attributes and raw materials were recorded. Diagnostic artifacts were photographed. Radiocarbon samples were dried, weighed and repacked prior to submission to Beta Analytic, Inc. Feature forms and level records were verified and maps redrawn for publication. A complete listing of materials recovered is provided in Appendix G. Artifacts recovered from the water screening are listed in Appendix G.

The materials recovered by Gerald (1964) from Big Bangs and Little Bangs were curated at the Glenn A. Black Laboratory (GBL) at Indiana University. The GBL was visited by Andrew Smith and Beth McCord to examine the diagnostic artifacts. The projectile points and pottery were not located in the collection. Field notes and photographs were also not located. The collection contained a larger number of artifacts than reported by Gerald (1964). From Big Bangs over 400 flakes and a few cores and biface are listed. The Little Bangs collection had over 300 flakes and a few cores and bifaces. No pottery or projectile points were listed in the catalogue records, so the diagnostic artifacts may have never been curated at GBL.

A DHPA Sites and Structures Inventory form was revised and submitted in SHAARD for the three mounds. All materials generated by this project were catalogued under ARMS

accession # 08.43. All artifacts acquired during this project remain the property of the Corps of Engineers and were curated at Ball State University.

Results

Big Bangs

The contour map of Big Bangs shows the undulations created by previous excavations and erosion (Figures 76, 77). Figure 78 shows the setting of the mound within the Kil-so-quah campground. Significant erosion has occurred since Gerald's excavations were left open. A survey of Huntington Reservoir conducted by ARMS in 1982 (Wepler and Cochran 1983b) took photographs of Big and Little Bangs (ARMS files). Figure 79 displays the 1982 condition of Big Bangs compared with the 2008 investigation. [REDACTED]

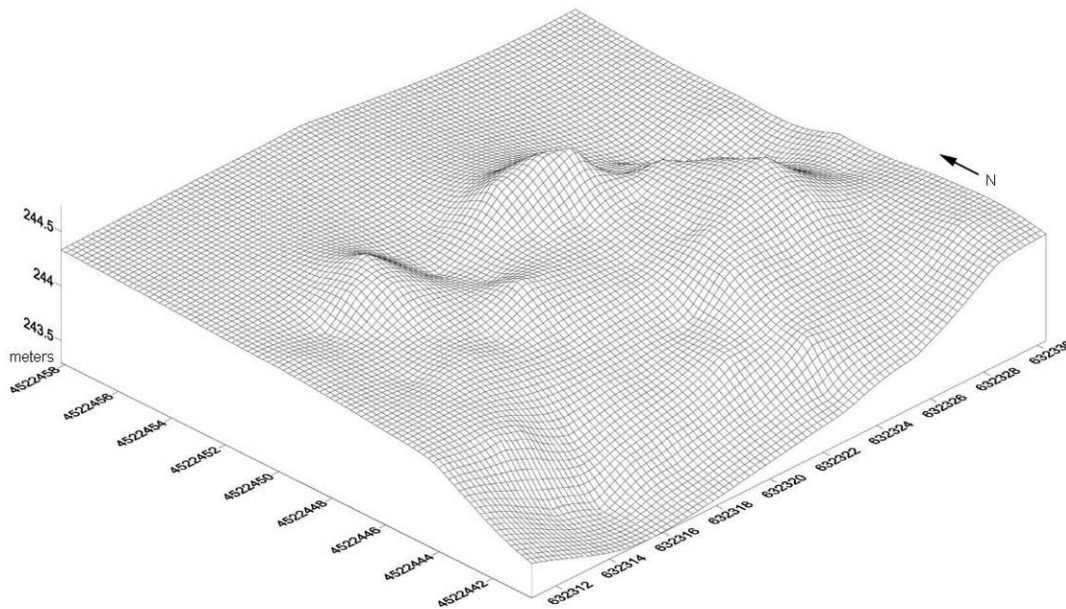


Figure 76. Wireframe map of Big Bangs.

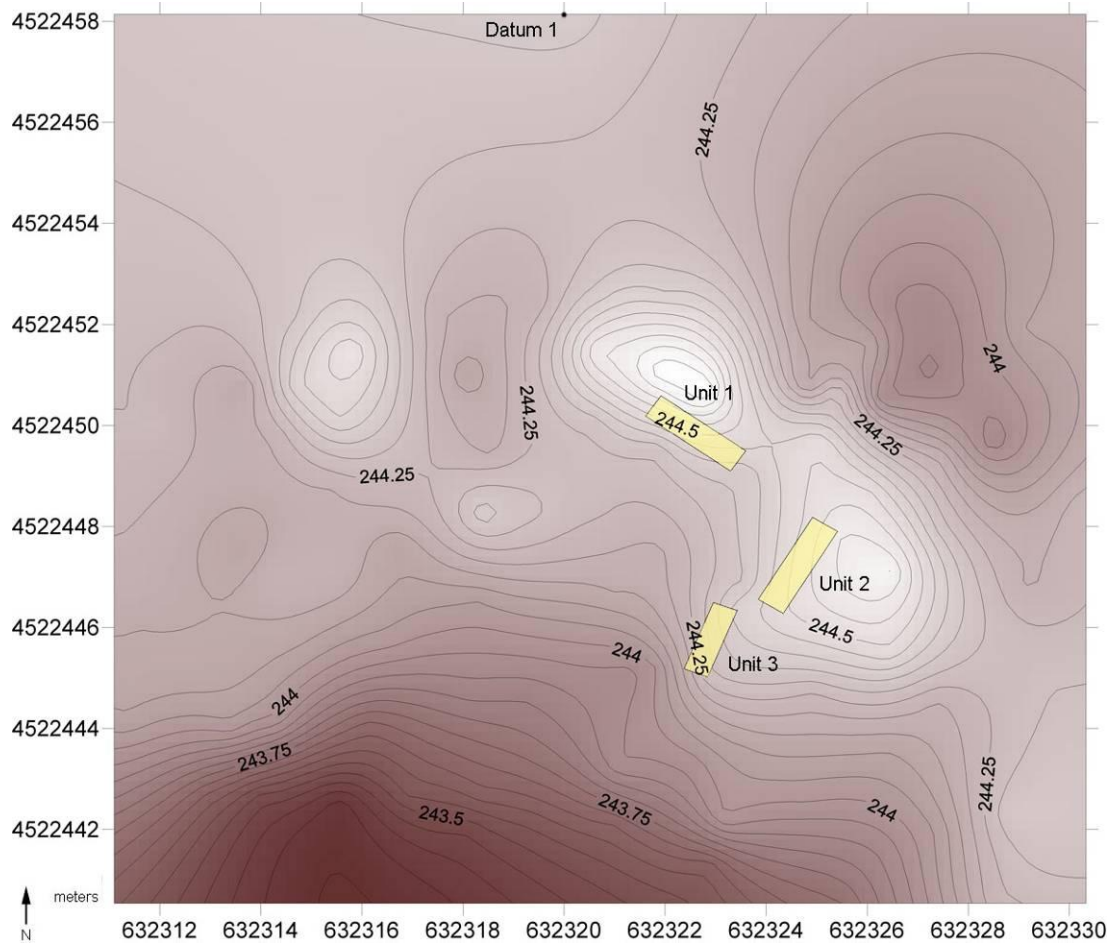


Figure 77. Contour map of Big Bangs with unit locations.

Sites Locations Confidential

Not for Public Disclosure

Figure 78. Aerial view of Big Bangs and Little Bangs within the campground.



Figure 79. A 1982 photo (top) and 2008 photo (bottom) of Big Bangs.

A large quantity of artifacts was evident on the surface of the mound. It appeared that no humus zone protected the interior of the mound and erosion was ongoing. The surface collection recovered 236 unmodified flakes, one core, one biface fragment and one Stage 3 biface fragment. The raw materials were almost exclusively Liston Creek with only two artifacts of unknown chert.

While areas previously excavated in the mound were evident, the unit walls were too severely slumped to reopen. Three locations with intact mound sections were selected for excavation. Figure 77 shows the location of the units excavated. Figure 80 shows approximate locations on Gerald's (1964) plan map. Each of the units was positioned on a sloping surface due to the erosion along the intact walls.

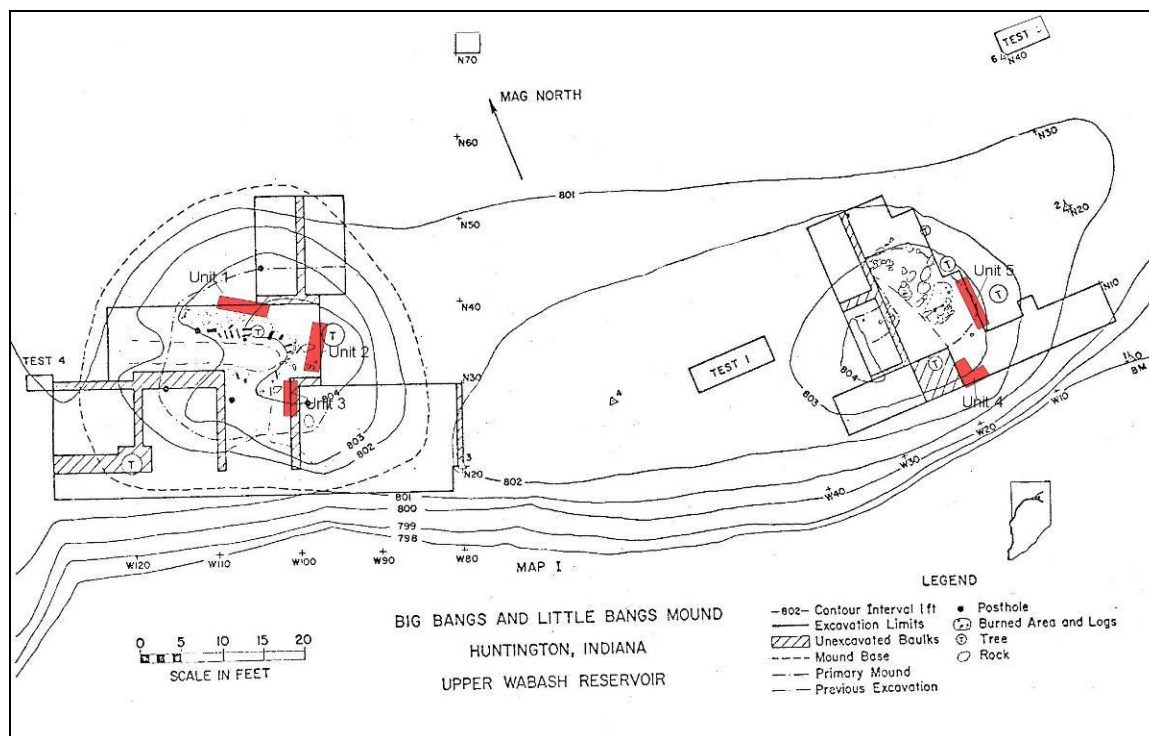


Figure 80. Gerald's (1964) map with the approximate location of the 2008 units.

Unit 1

Unit 1 was placed in the north central area of the Big Bangs mound (Figure 77 & 81). The excavation unit was 0.5 m wide and 2 m long and approximately 52 cm deep. Figure 82 shows the profile recorded from the unit. The stratigraphy is comparable to that described by Gerald (1964) for the mound. Zone 4 is the light yellowish brown natural subsoil of silty clay loam. Zone 3 is the primary mound. This construction episode consisted of a very compact silt loam (loess) that was extremely difficult to excavate. Zone 2 was an organic horizon with some small flecks of charcoal. This would appear to be part of the fire-crack rock and burned log layer that Gerald identified on top of the primary mound. Fire-cracked rocks were found at this level, but not in great quantities. Zone 1 was a mixed light gray to brown silt loam deposit and would represent Gerald's secondary mound. The tertiary mound and humus zone were absent in Unit 1.



Figure 81. Photo of Unit 1.

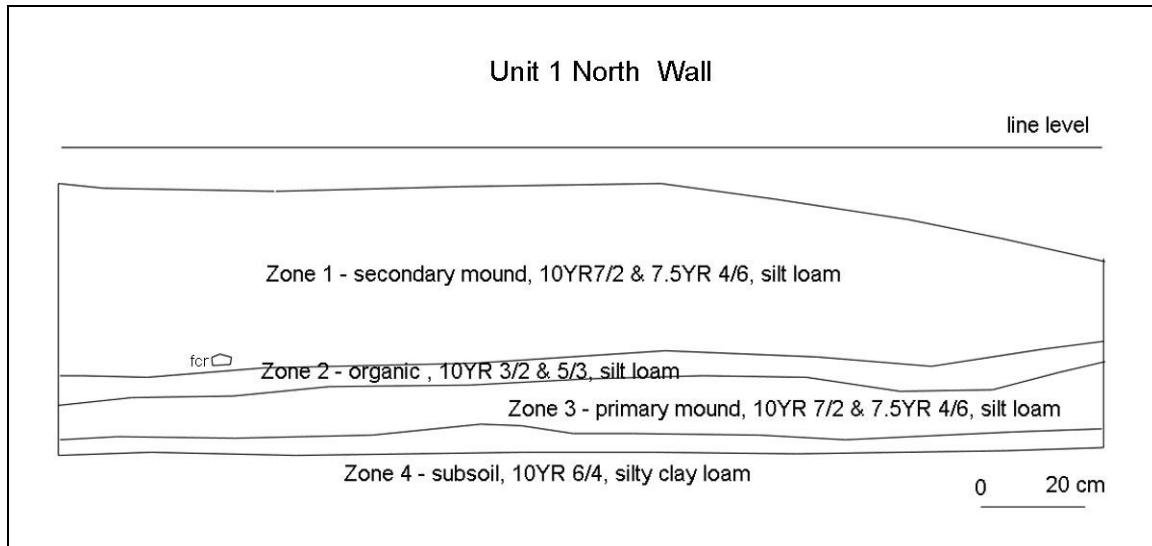


Figure 82. Profile of Unit 1, North Wall.

Table 27 contains a list of the artifacts recovered from Unit 1 by level and zone. A total of 161 prehistoric artifacts and one wire nail were recovered from the unit. Artifacts were recovered from every excavation level, but the subsoil was sterile. The discovery of wire nails in Level 3 is somewhat misleading. The historic materials were actually close to the surface, but not recovered until Level 3 due to the slope. The Motley point dates to the Late Archaic and Early Woodland period between 1400 and 600 BC (Justice 1987:198) (Figure 83). The point is believed to be incidental in the mound fill. One piece of grit tempered pottery was recovered in Level 2 (Zone 1), but the sherd was cleaned in water by an inexperienced lab technician and the sherd disintegrated. A carbon sample was taken from Level 4 in Zone 2. The resultant AMS date was 1550 ± 40 BP or 2-sigma calibration AD 420 to 600.

Table 27 Artifacts from Unit 1							
Level	Zone	Identification	No.	Level	Zone	Identification	No.
1	1	Unmodified flake	10	4	2	Edge modified flake	1
		Block flake	1			Bipolar	1
		FCR	(89 g)			Core	1
2	1	Unmodified flake	19			Biface fragment	1
		FCR	(737 g)			Motley point	1
3	1	Unmodified flake	40			FCR	(2240 g)
		Edge modified flake	1	5	2/3	Unmodified flake	49
		Wire nail	1			Edge modified flake	2
4	2	Unmodified flake	32	6	3/4	Unmodified flake	1



Figure 83. Points recovered during the excavation: a) Motley - Unit 1, b) Triangular Cluster biface - Unit 5.

Unit 2

Unit 2 was placed in the central area of Big Bangs (Figures 77, 84). Gravel was found on the surface of the mound in this location, but it matched the crushed gravel used on the adjacent campsite. The excavation unit was 0.5 m wide and 2 m long and approximately 50 cm deep. The profile of the unit is shown in Figure 85. The stratigraphy of this unit was very similar to Unit 1. The main difference was a layer of fire-cracked rock encountered below Zone 2. Nearly 12 Kg of fire-cracked rock were found from this layer at the base of Zone 2 into Zone 3. Based on the stratigraphy recorded in this unit, the fire-cracked rocks were integrated into the top of the primary mound and the primary mound was capped with an organic layer. Therefore, the fire-cracked rock and organic layer are separate parts of construction, unlike Gerald's interpretation of one layer. Like Unit 1, the tertiary mound and original humus zones were missing in Unit 2. The west wall of the unit showed a deposit of mixed A-horizon (recent) that was likely due to slumping along Gerald's excavation wall.



Figure 84. Photo of Unit 2.

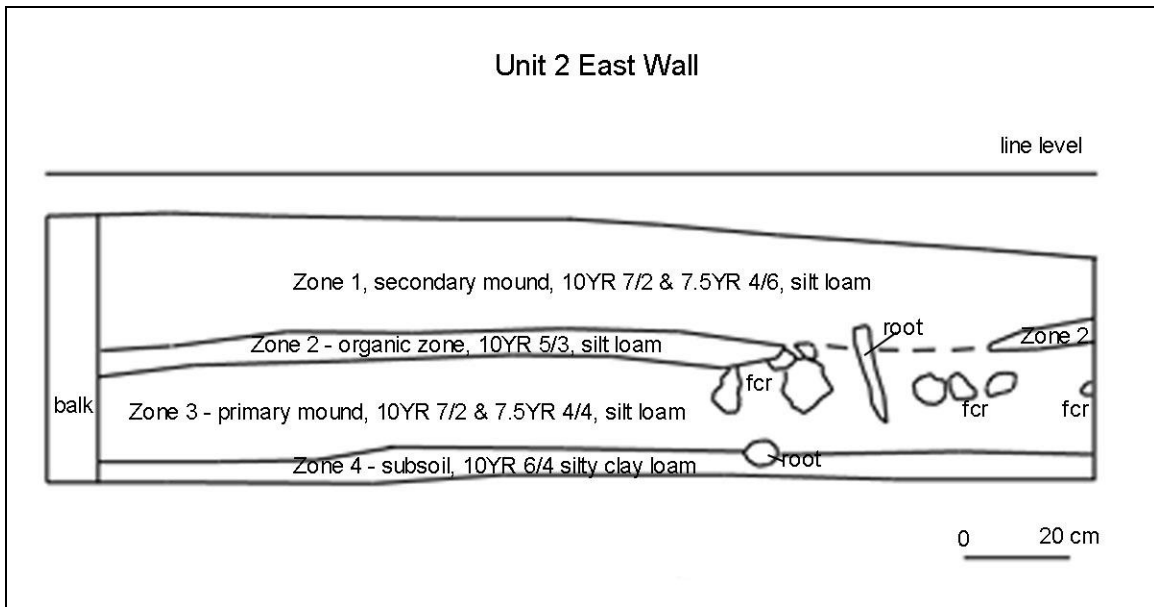


Figure 85. Profile of Unit 2, East Wall.

Table 28 contains a list of the artifacts recovered from Unit 2. A total of 296 prehistoric artifacts and three wire nails were recovered from the unit. Artifacts were recovered from every excavation level, but the subsoil was sterile. No diagnostic artifacts were recovered from the unit.

Table 28 Artifacts from Unit 2							
Level	Zone	Identification	No.	Level	Zone	Identification	No.
1	1	Unmodified flake	25	3	1/2	Bipolar	1
		Biface fragment	1			FCR	(4426 g)
		FCR	(56 g)	4	3	Unmodified flake	96
2	1	Unmodified flake	72			Core	1
		Block flake	1			Block	3
		Wire nail	3			Bipolar	1
		FCR	(1021 g)			Biface	1
3	1/2	Unmodified flake	82			FCR	(7543 g)
		Edge modified flake	1	5	3/4	Unmodified flake	10

Unit 3

Unit 3 was placed in the southeastern area of Big Bangs (Figures 77, 86). The excavation unit was 0.5 m wide and 1.5 m long and approximately 40 cm deep. The profiles of the unit are shown in Figure 87. The intact portion of the mound documented in this unit was shorter than Unit 1 and 2. Zone 1, the secondary mound, was absent. The remainder of the stratigraphy of this unit was very similar to Unit 1. A section of the organic horizon that capped the primary mound was identified only in the north wall (Zone 2). The primary mound (Zone 3) and subsoil (Zone 4) were documented below this. No layer of fire-cracked rock like that documented in Unit 2 occurred in Unit 3.



Figure 86. Photo of Unit 3.

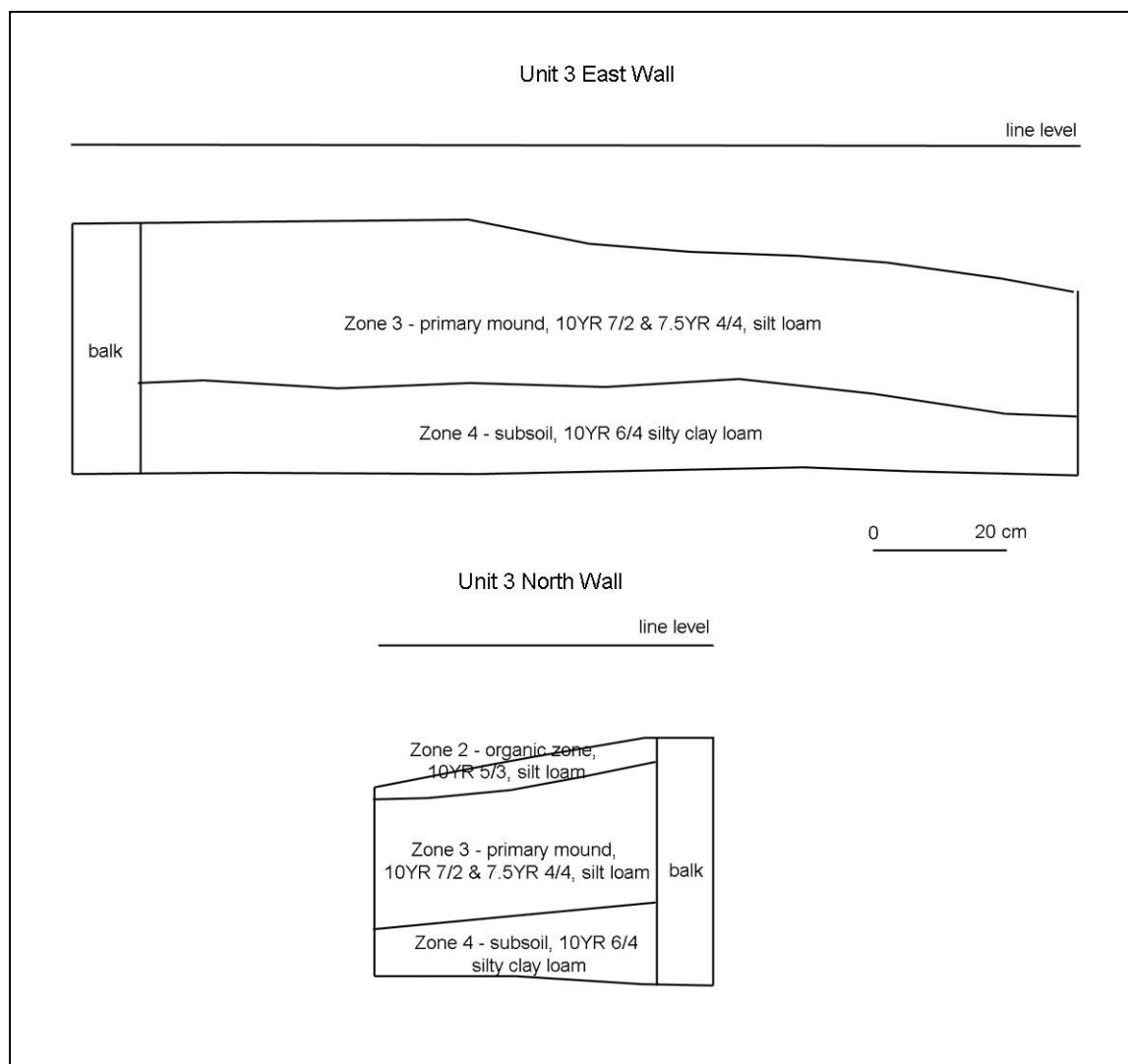


Figure 87. Profiles of Unit 3, East and North Walls.

Fewer artifacts were recovered from this unit compared Units 1 and 2, but the unit was smaller and less of the mound was present. A total of 73 prehistoric artifacts were recovered from the unit (Table 29). No diagnostic artifacts were recovered.

Level	Zone	Identification	No.	Level	Zone	Identification	No.
1	2/3	Unmodified flake	25	3	3	Unmodified flake	10
		FCR	(52 g)	4	3/4	Unmodified flake	5
2	3	Unmodified flake	35			Edge modified flake	1
		FCR	(425 g)			FCR	(23 g)

Little Bangs

The contour map of Little Bangs shows the topography created by previous excavations and erosion (Figures 88, 89). It appears that less erosion has occurred compared to Big Bangs. Figure 90 displays the 1982 condition of Big Bangs compared with the 2008 investigation. More trees and scrub cover the surface of Little Bangs and that likely serves as a deterrent to campers impacting the mound. Surface artifacts were not apparent as at Big Bangs so no systematic collection of artifacts was conducted.

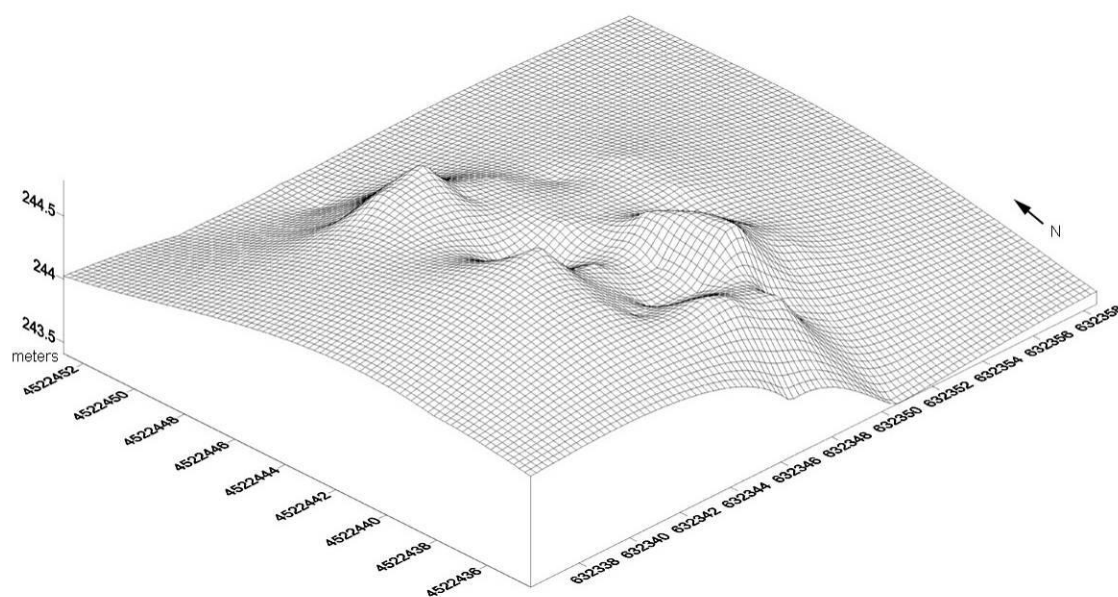


Figure 88. Wireframe map of Little Bangs.

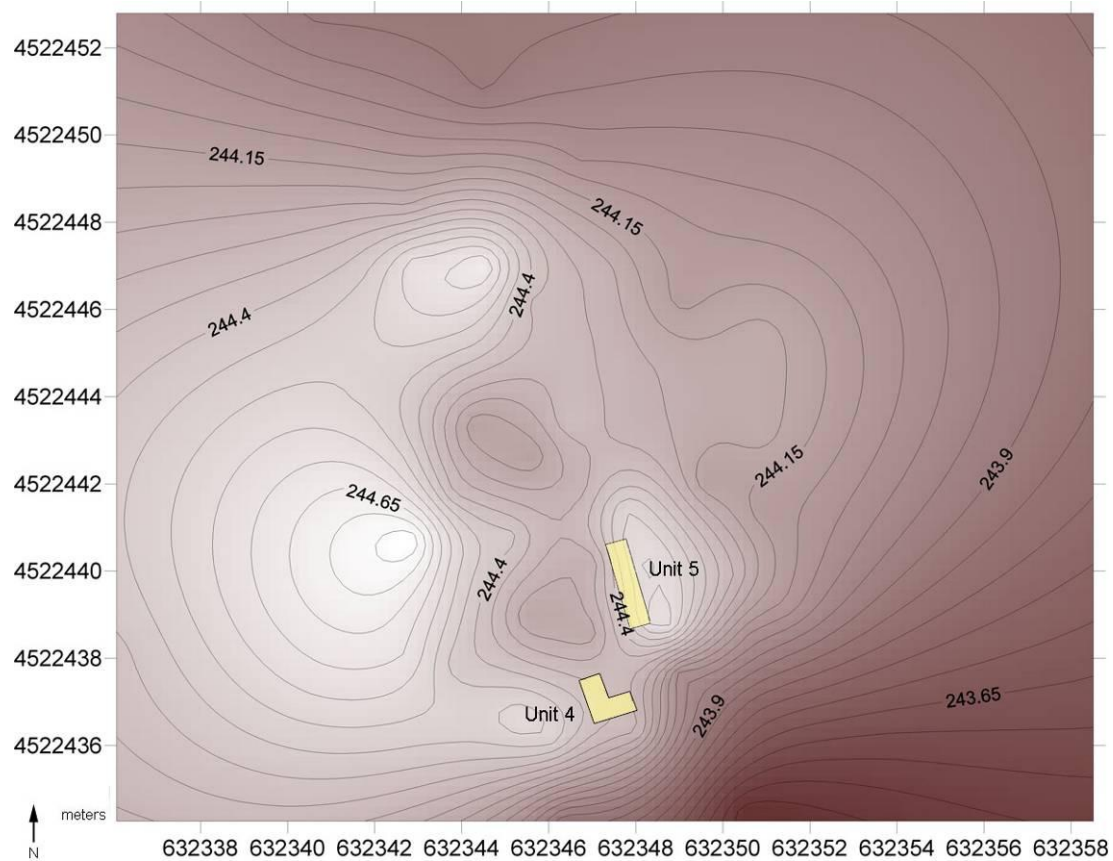


Figure 89. Contour map of Little Bangs with units.



Figure 90. A 1982 photo (top) and 2008 photo (bottom) of Little Bangs.

Areas previously excavated in the mound were evident, but the unit walls were too severely slumped to reopen. Two locations with intact mound sections were selected for excavation. Figure 89 shows the location of the units excavated. Each of the units was positioned on a sloping surface due to the erosion along the intact walls. Figure 80 shows approximate locations on Gerald's (1964) plan map.

Unit 4

Unit 4 was placed at the corner of an old excavation on the south side of the Little Bangs mound (Figures 89, 91). The excavation unit was L-shaped and 1 m long to the north, 1 m long to the east and 0.5 m wide. The unit was approximately 50 cm deep. Figure 92 shows the profiles recorded from the unit. The stratigraphy is comparable to that described by Gerald (1964) for the mound. Zone 3 is the brownish yellowish natural subsoil of a silty clay loam. Zone 2 is a yellowish brown silt loam deposit and would represent Gerald's secondary mound. This zone is not thought to be the primary mound since it is less compact than that encountered in Big Bangs and the unit was outside the boundary drawn for the primary mound. Zone 1 was a very dark grayish brown humus zone.



Figure 91. Photo of Unit 4.

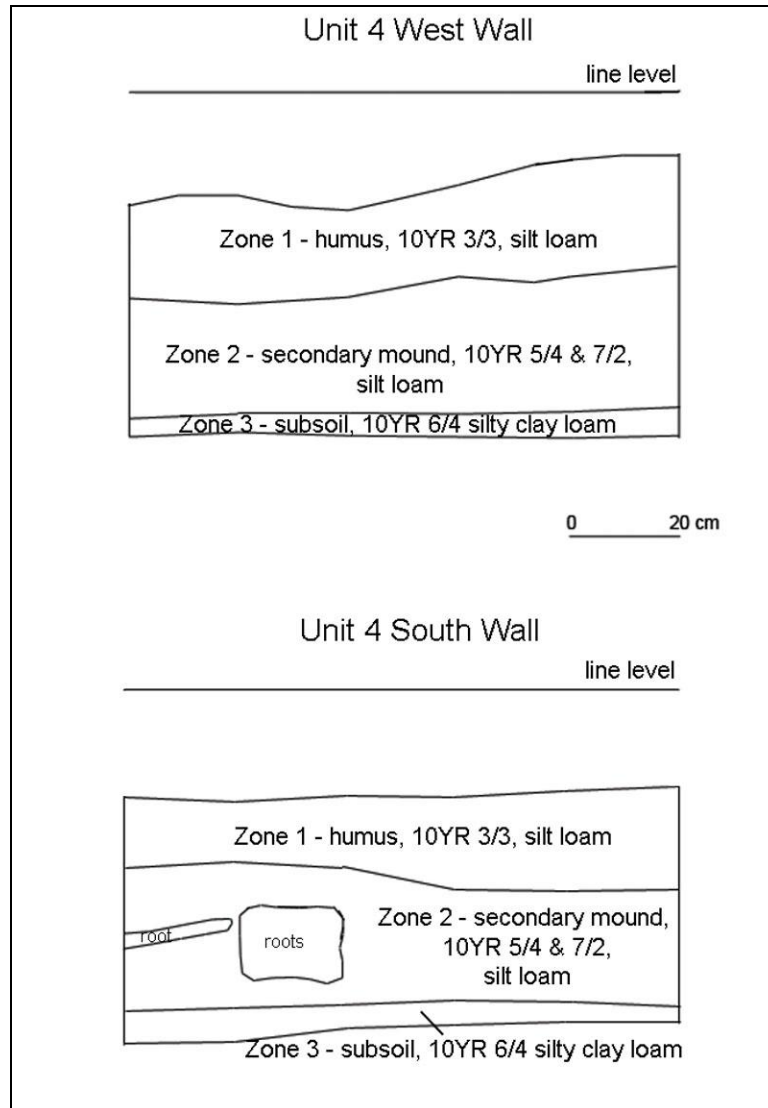


Figure 92. Profiles of Unit 4, West and South Walls.

Table 30 contains a list of the artifacts recovered from Unit 4. A total of 95 prehistoric artifacts and eight historic artifacts were recovered from the unit. Artifacts were recovered from every excavation level, except Level 1. Level 1 only encompassed a small portion of the unit due to the slope. The discovery of historic materials in Levels 3 and 4 is somewhat misleading. The historic materials were actually close to the surface, but not recovered until the lower levels due to the slope. The subsoil was sterile. No diagnostic artifacts were recovered from the unit.

Table 30 Artifacts from Unit 4							
Level	Zone	Identification	No.	Level	Zone	Identification	No.
2	1	Unmodified flake	14	4	2	Unmodified flake	36
		FCR	(14 g)			Edge modified flake	2
3	1/2	Unmodified flake	28			Marble –glass	1
		Container glass	7			FCR	(154 g)
		FCR	(61 g)	5	2/3	Unmodified flake	15
						FCR	(125 g)

Unit 5

Unit 5 was placed in the east central area of Little Bangs (Figure 89, 93). The excavation unit was 0.5 m wide and 2 m long. The unit was approximately 50 cm deep. Figure 94 shows the profile recorded from the unit. The stratigraphy is very similar to Unit 4. The humus zone (Zone 1) was not as thick. We anticipated encountering the primary mound in this location based on Gerald's plan map, but the secondary capping (Zone 2) was the only construction episode found.



Figure 93. Photo of Unit 5.

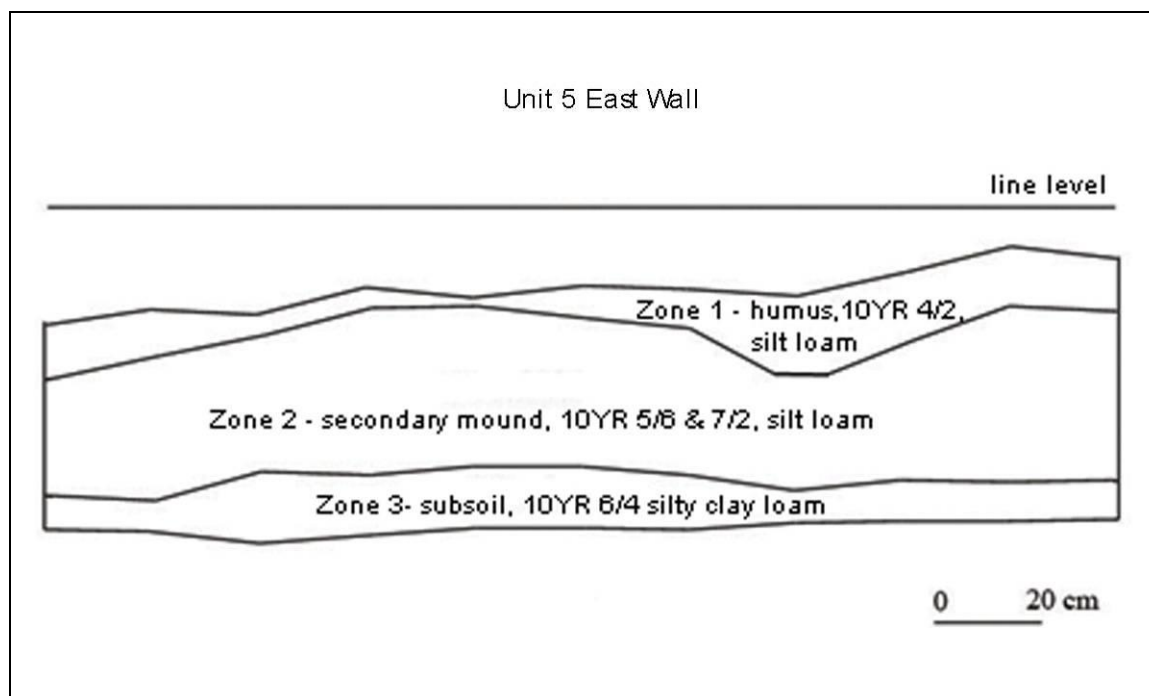


Figure 94. Profile of Unit 5, East Wall.

Table 31 contains a list of the artifacts recovered from Unit 5 by level and zone. A total of 68 prehistoric artifacts were recovered from the unit. One unmodified flake and one bipolar artifact were recovered from the surface. Artifacts were recovered from every excavation level, except Level 1. Level 1 only encompassed a small portion of the unit due to the slope. A Triangular biface was found near the surface, but in Zone 2. The biface has a “humpback” area and was not fully thinned. Triangular Cluster points indicate a Late Woodland/Late Prehistoric use and can range in age from AD 500 to Historic contact (Justice 1987:224-230)(Figure 83). The earlier range of dates for Triangular Cluster points overlaps with the radiocarbon date from Big Bangs of cal AD 420 to 600. It is possible the biface is intrusive to the mound. It was found near the surface, but no intrusive features were observed.

Table 31 Artifacts from Unit 5							
Level	Zone	Identification	No.	Level	Zone	Identification	No.
2	1/2	Unmodified flake	16	4	2	Unmodified flake	16
		Triangular biface	1			FCR	(175 g)
		FCR	(2 g)	5	2/3	Unmodified flake	12
3	2	Unmodified flake	21			FCR	(65 g)
		FCR	(87 g)				

12Hu27

A contour map of 12Hu27 was constructed (Figures 95, 96). The topography did not suggest the presence of a mound, but Gerald (1964:3) noted the mound was almost entirely removed. The 1963 excavation unit was apparent. Due to time constraints, no further investigation of the site was undertaken. It is unknown if the site is an artificially constructed mound.

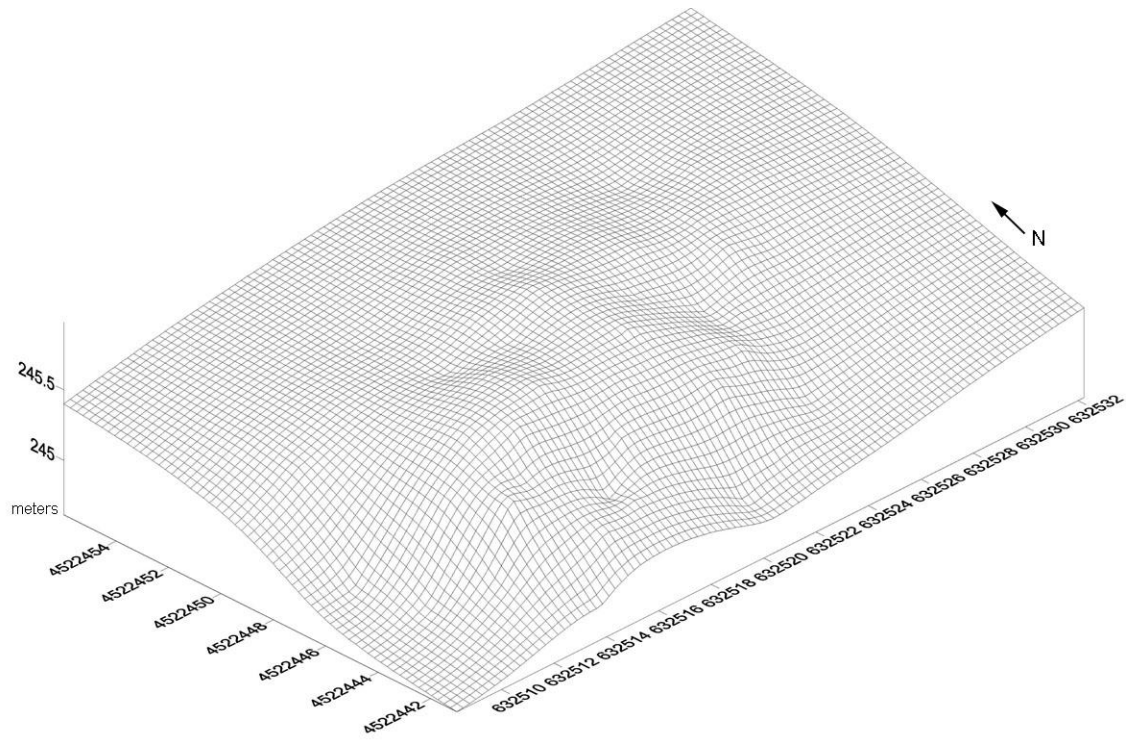


Figure 95. Wireframe map of 12-Hu-27.

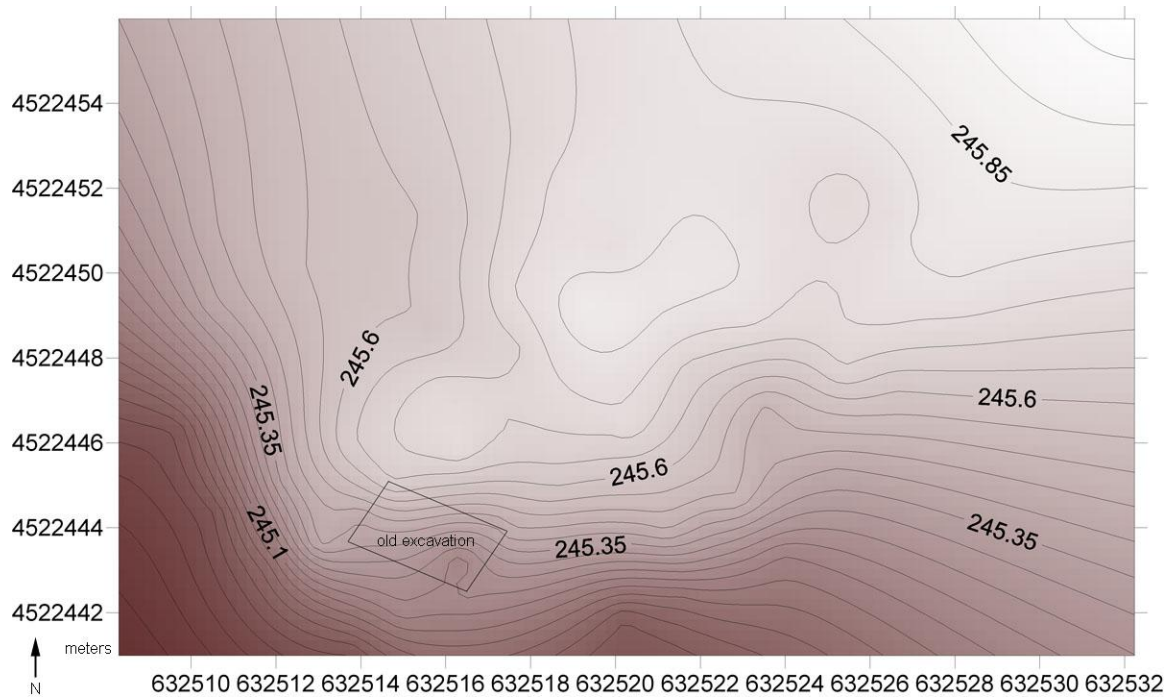


Figure 96. Contour map of 12-Hu-27 with old excavation unit.

Artifacts

A total of 688 prehistoric artifacts were recovered from the test excavations of Big and Little Bangs mounds: Big Bangs = 527 artifacts and Little Bangs = 161 artifacts. Gerald (1964:13-14) noted that artifacts from both mounds were rare and only 50 specimens were catalogued. However, the artifact collection curated at GBL at IU contained over 700 artifacts. The disparity between Gerald's comments and the curated collection may be attributed to what she considered artifacts. Only tools such as scrapers, drills and points were discussed by Gerald in her report of the excavation. Lithic debris may not have been considered. Certainly, artifacts were not rare from either mound. From the small test excavations made during this project a large amount of lithic material occurred in both mounds.

The lithic material occurred in all of the cultural zones tested. Due to the 10 cm arbitrary levels used in the excavation methods, the level and cultural zone did not neatly correspond. However, an overall pattern between the primary mound and secondary mound fill could be compared from Units 1 and 2 in Big Bangs. From Unit 1, 52 artifacts were assigned to the primary mound episode and 108 were found in the secondary mound episode. Unit 2 echoes this pattern with 112 artifacts from the primary mound and 183 artifacts from the secondary mound. The primary and secondary mound deposits sampled were similar in volume and the secondary mound fill contained more artifacts than the primary mound fill.

Of the 688 lithic artifacts recovered during the excavation, 650 (94.4%) were manufactured from local Liston Creek chert. Other unidentified materials included 2 (0.3%) of Attica chert, 1 (0.1%) of Wyandotte chert and 1 (0.1%) of quartzite. The remaining 35 (5.1%) artifacts were from unknown cherts. Only 18 (2.6%) artifacts were either heat treated or heat damaged.

Summary

The test excavations conducted at Big Bangs and Little Bangs confirmed some of Gerald's (1964) comments on the mound construction and contents. However, a few differences were encountered. The first obvious difference is in the quantity of artifacts recovered. Gerald noted that artifacts were rare, but this was certainly not the case. Lithic debitage was frequently encountered. Formal tools were rare. The second difference is in the mound structure. The layer of burned logs and fire-cracked rock described by Gerald to occur on the top of the primary mound, was not confirmed by the test excavations. This could be due to the placement of our units. However, Units 1 and 2 in Big Bangs indicate the fire-cracked rock were incorporated into the fill of the primary mound. A layer of burned wood was not encountered, but rather an

organic horizon. This may represent a break in the construction of the mound and the formation of an A-horizon before the secondary mound was constructed.

While the temporal affiliation of the mounds was better defined by the project, the cultural affiliation of the mounds is still somewhat ambiguous. The recovery of a Triangular Cluster point and a radiocarbon date between cal AD 420 and 600 indicates a late Middle Woodland to early Late Woodland time period for the construction of the mounds. From a regional perspective, no identified cultural groups have been named for this period in the Upper Wabash drainage. Possible cultural associations are discussed in the research questions.

Conclusions and Recommendations

Big Bangs (12-Hu-25) and Little Bangs (12-Hu-26) contain intact deposits. Data was recovered to further our understanding of the construction of the mounds and to determine the historic context. The two mounds are the only known surviving examples of mounds in the Upper Wabash drainage. The mounds provide a unique opportunity to further explore the settlement system of MiddleWoodland/Late Woodland populations. The mounds in particular offer a rare opportunity to examine the ceremonial and ritual aspects of the inhabitants of the area. The mounds are eligible for listing on the State and National Registers of Historic Places.

As part of this project, it was anticipated that the mounds would be backfilled after the completion of the field work. The scope of negotiating a backfilling plan between the Division of Historic Preservation and Archaeology, the Corps of Engineers and the staff of the Kil-so-quah campground reached beyond the boundaries of the project. A consultation about backfilling the mounds did occur with the Corps of Engineers, but the plan was not formalized and the mounds have still not been backfilled. Backfilling the mounds would greatly increase their preservation. If camper access is not restricted or the cultural deposits are not protected, significant erosion will continue to occur, particularly at Big Bangs. The intact areas of the mounds will continue to degrade and significant information may be lost.

RESEARCH QUESTIONS

The following research questions, while not exhaustive, guided this project.

1. *What are the densities and distributions of archaeological sites on the various landforms within the Wabash River valley in the survey areas?*

The density and distribution of sites are important for modeling and prediction. In the current study not only was site distribution tracked by landform and cultural period, but the amount of the surface that was covered by individual sites was used to demonstrate the percentage of utilized surface by landform (Table 32). For example, five small lithic scatters on a given landform may utilize a smaller portion of the landscape than one large lithic scatter on another landform. The percentage of utilized landscape may provide a further refined perspective of just how settlement occurred within the research universe.

Sites on the outwash terrace occurred with a greater frequency at one site per 1.2 acres surveyed than sites on the floodplain at one site per 1.7 acres surveyed. However, sites on the floodplain covered almost double the percentage of the surface area. The floodplain and outwash terrace accounted for 97% of the artifacts recovered during the survey, but only made up 80% of the area surveyed. This means that artifacts occur at 9.2 times the frequency on the floodplain and outwash terrace than they do on other landforms within the research universe. In the current survey 8,960 artifacts were recovered from the floodplain and 1,238 on the outwash terrace. As a percentage of the total area surveyed it appears that artifacts are found at two times the frequency on the floodplain as on the outwash terrace.

Table 32 Cumulative Site Sizes as a Percentage of Landform Total			
Landform	Acres Surveyed	Site Acreage	Percent of Coverage
Floodplain	496.1	50.7	10.24%
Outwash Terrace	143.5	8.5	5.75%
Till Plain	118.0	2.7	2.22%
Lake Plain	21.3	0.33	1.55%
Peat	6.5	0	0.00%
Eolian	6.9	6.9	100.00%

As expected the lake plain and peat had very low site densities. This fits the pattern of archaeological sites being located more heavily in well drained settings (McCord 2007). The till plain surveyed also had a low percentage of coverage. This is similar to what is found in other till plain regions. A large percentage of the till plain surveyed for this project was adjacent to the

valley environment. With the observed preference for settlement within the valley it is unknown if the percentage of land surface coverage in the till plain surveyed is affected by the proximity to the valley.

2. *What is the chronology of precontact settlement on the various landforms within the study area?*

Precontact settlement within the research universe appears to be similar to that seen in other surveys within the till plain region of Indiana. Late Woodland, Late Archaic and Early Archaic dominate the diagnostic assemblage. Diagnostic artifacts from the Paleo-Indian, Middle Archaic, Early Woodland and Middle Woodland are much more rare. The total diagnostic artifacts for the survey area listed by the landform they were discovered on is included in Table 33.

Table 33 Diagnostic Artifacts by Landform					
Landform	Floodplain	Outwash	Till	Lake plain	Eolian
Paleo-Indian	1	1	0	0	0
Early Archaic	11	3.5	0.5	1	0
Middle Archaic	2	1	1	0	1
Late Archaic	19.5	3.5	0	0	0
Early Woodland	2	0	0	0	0
Middle Woodland	2	0	0	0	1
Late Woodland	24	1	0	0	1
Sites covering two landforms were assigned half values to each landform.					

The valley environment, which includes outwash, floodplain and eolian soils, is a domestic focus. Assuming the density of artifacts reflects the intensity of occupation and use of the valley, with over nine times the frequency of artifacts, it is by far the most heavily utilized portion of the research area. Also, the amount of valley surveyed makes it likely that patterns within the chronology can be seen as meaningful. It is noted that diagnostic artifacts were much more likely to occur within the valley, even accounting for the higher percentage of valley survey. Only five of the 79 diagnostic artifacts recovered were from outside the valley. In other words, although the valley made up roughly 80 percent of the surveyed area, it accounted for 94 percent of the diagnostic artifacts. Based on the current study, it appears that Late Woodland people were utilizing the valley much more heavily than other studies have demonstrated. Middle and Early Woodland sites were limited to valley settings (the eolian landform was within the valley). Late Archaic sites also favored the valley setting, although they occurred over a greater number of environments than any other period. Middle Archaic sites occurred

infrequently, but occurred outside the valley with the same frequency as within. Early Archaic sites favored the valley setting; as did Paleo-Indian sites.

Till plains have patterned, small lithic scatters indicative of short term extractive/hunting/gathering camps. Without unique resources, i.e. permanent wetlands, the till plain remains an important procurement area, but not one where large, dense, long term occupation was occurring. The till plain appears to be utilized in all time periods, although the Early and Middle Woodland periods certainly are focused more strongly on the valley. In the current study diagnostics within the till plain were limited to the Early and Middle Archaic. However, the amount of till plain surveyed was not large enough to draw conclusions pertaining to settlement by prehistoric period.

The lake plain makes up such a small portion of the area surveyed that it is difficult to make any assessment of the landform. It appears based on other till plain surveys (McCord 2007) that the lake plain would be expected to have a lower density of site use than the surrounding till plain because of the poorly drained nature of the soils. However, it was assumed that the lake plain may represent a unique resource within the survey area and that lake plain margins may demonstrate an increase in site density. An area along the lake plain margin with some of the highest relief from the lake bed was surveyed to test this hypothesis. What was found did not demonstrate an increase in land use around the lake plain margin, although this may be attributable to sampling. The Patton soil that made up the lake plain is classified as a mesic typic Haplaquolls. The USDA NRCS (1999: 563) states that “most of the [aquolls] have had a vegetation of grasses, sedges, and forbs” and that they develop in dominantly wet conditions. These wet environments are typically rich in biodiversity, which could favor settlement. It was also assumed that this ancient lake may have been extant during the Paleo-Indian through Middle Archaic periods and may have been a different but equally productive environment. The only diagnostic artifact recovered from around the lake plain margin was from the Early Archaic. Again, too small of a sample was conducted to draw conclusions for the settlement chronology of this landform.

3. What is the nature of the Late Woodland/Late Prehistoric settlement in the upper Wabash River valley?

Late Woodland/Late Prehistoric settlement in the upper Wabash River valley appears to be more patterned than other surveys have demonstrated. The numbers of identified Late Woodland/Late Prehistoric artifacts in the current survey total thirty five. In the till plain region of Indiana Late Woodland/Late Prehistoric is typically the third most commonly identified component in sites after Late Archaic and Early Archaic. On the current survey Late Woodland/Late Prehistoric was the most commonly encountered. This may be because the current survey focused so heavily on the valley setting.

Floodplain settings made up 63 percent of the surveyed area but accounted for 97 percent of the identified Late Woodland/Late Prehistoric artifacts. In multiple other surveys, including portions of the Upper Wabash River and the White River, Late Woodland/Late Prehistoric sites were not as heavily concentrated in the valley. In the Huntington Reservoir survey 65 percent of Late Woodland/Late Prehistoric sites were found in the valley (Wepler and Cochran 1983: 100). At the Strawtown Prairie on the White River Late Woodland/Late Prehistoric sites were almost evenly distributed between the floodplain, outwash terrace and till plain (McCord and Cochran 2003). In a comparison of surveys conducted on the Wabash Moraine in the Upper Wabash River valley, it was noted that Late Woodland/Late Prehistoric only accounted for seven percent of the identified components (Cochran and Buehrig 1985: 26). This analysis of till plain regions within the research area helps to confirm that the normally abundant Late Woodland/Late Prehistoric artifacts are conspicuously limited outside of the valley setting.

It is unknown at this time why there is such a heavy concentration of Late Woodland/Late Prehistoric artifacts within the valley. Other anomalous trends have appeared in the Upper Wabash River valley with respect to the Woodland Period. Little pottery has been recovered during survey within the Upper Wabash River valley. Where pottery has been recovered does not fit the trends noted within other drainages in the state (Cochran 1985, Stephenson 1984). Ross soils seem to correlate strongly with the presence of pottery within the Upper White River drainage, but Ross soils are almost absent from the Upper Wabash River valley except in the form of alluvial fan formations in Miami County. It does appear that in the limited locations where Ross soils do occur pottery sites do to (Cochran 1985), but the correlation is not as strong as within the White River valley. It has become apparent that no amount of additional survey is likely to elucidate the settlement system of the Late Woodland/Late Prehistoric peoples within the Upper Wabash River valley. The only method that appears likely to affect a change in our understanding of the settlement system is focused testing of Late Woodland/Late Prehistoric sites.

4. Where are the sites with ceramics located in the Wabash River valley?

Ceramic sites within the Upper Wabash River valley are rare. Cochran (1985) documented only twenty-five sites within the Upper Wabash River valley with pottery. The current survey only located two additional sites with pottery (12-Wb-913, 980). With the survey so heavily focused in the valley it was assumed that more sites with pottery would be discovered; and certain survey areas were selected specifically in an attempt to locate pottery.

One ceramic site from the current survey, 12-Wb-980, is in a very unique setting on a sand dune near the interface of the floodplain, outwash soils, a large (>4 km²) wet prairie, and the upland/till plain located approximately half a kilometer away. The site would have provided

access to multiple ecozones and ecotones. The variety of the biota in this location would have been greater than any other portion of the valley that was covered during the current survey. Review of the counties soils demonstrates the unique nature of this location (Figure 97). The site is in many ways similar to the Fox Island sand dunes (east of the current research universe); albeit much smaller, and with a much higher artifact density. Early and Late Woodland pottery traditions, including Marion Thick and Younge pottery, have been recovered from the Fox Island sand dunes from sites 12-AI-117, 118, 121, 122, 123, 124, 429, 468 (Cochran 1980). Site 12-Wb-980 also is within a true valley setting, while the Fox Island ecology is limited to sand dunes, wet prairie and upland settings. It has been noted that “small dunal tracts are found in most places where the sluiceway is wider than normal, but as the width of the upper Wabash sluiceway is not as great as that of the lower Wabash, sand dunes are not particularly conspicuous in size or extent” (Thornbury 1958: 467). While the site appears to be important, the aberrant nature of the site in the Upper Wabash River valley precludes predicting the location of other ceramic sites.

Site 12-Wb-913 may be more representative of where ceramic sites are located within the Upper Wabash River valley. The site was located on a floodplain rise on Genesee soils. The area where the pottery was located was slightly higher than any other location along the river in the vicinity. It may be that ceramic sites within the valley are more commonly found on the highest and best drained alluvial soils. Since no two foot contour maps are available for the Upper Wabash River valley with the exception of two small areas at the cities of Huntington and Wabash, the assertion that the highest portions of the floodplain were selected for settlement would be difficult to test.

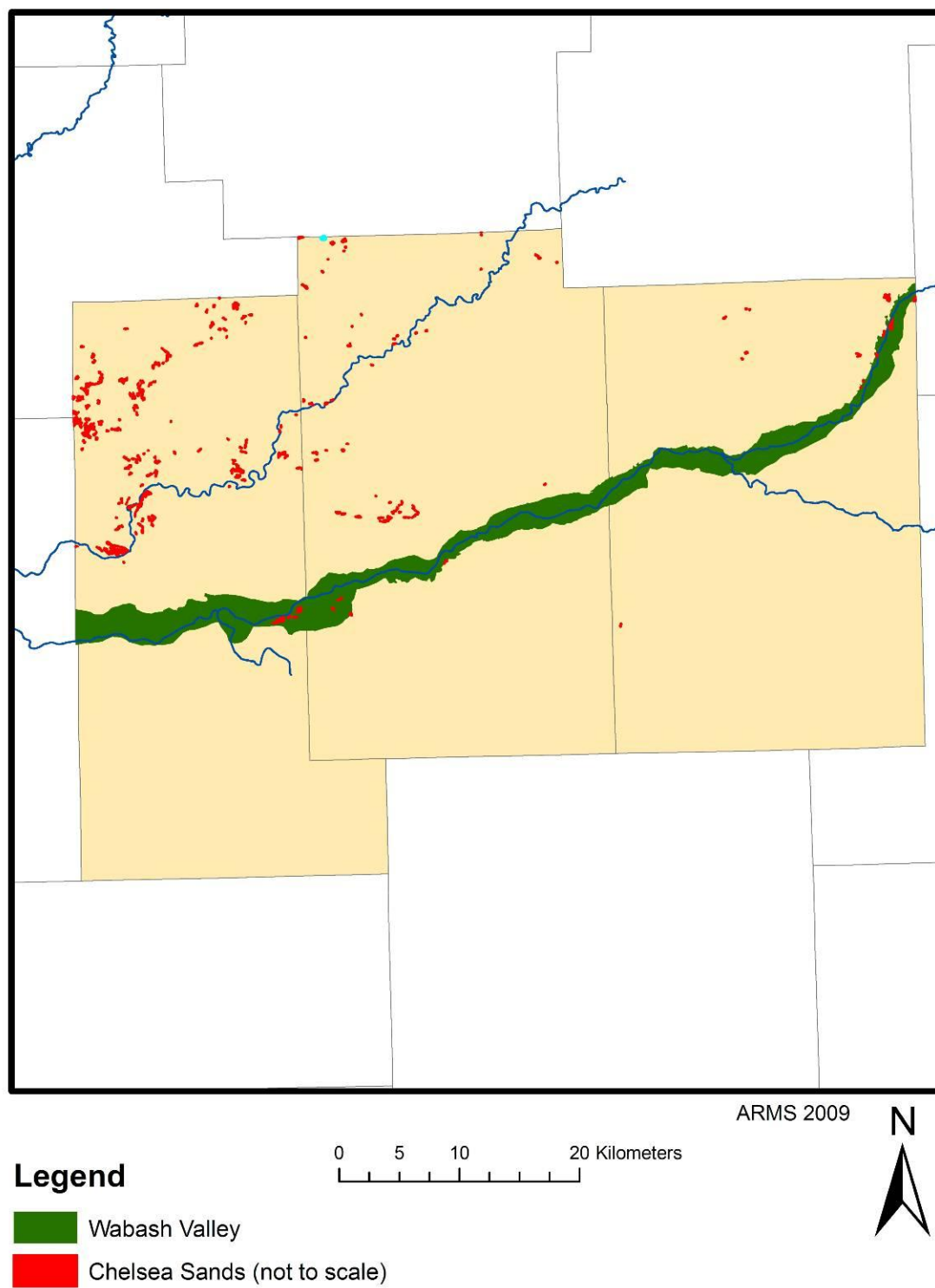


Figure 97. The location of dune facies within Huntington, Miami and Wabash counties.

5. *What is the nature of the density and distribution of chert resources in the study area?*

Chert resources within the survey area predominantly appeared to conform to previous studies. Liston Creek, a locally available resource (Cantin 2005) dominated the artifact assemblage. Very little of the recovered material was definitively exotic to the region and it was fairly evenly split between eastern, western and southern source area; the exception being Attica chert which is located downstream from the survey area. Additionally, very little Kenneth chert was recovered during the survey, though the material is located near the research area. No full analysis of Kenneth chert use has been conducted but circumstantial evidence suggests it was not utilized until the Late Archaic (DeRegnaucourt 1998).

One type of chert that was sorted and labeled as unknown and/or orthoquartzite appeared within multiple survey areas in Wabash and Miami counties. Early in sorting this material was classified as unknown. When it was determined that this material may be a distinct category it was set aside under the generic rubric of orthoquartzite. It is unknown how many artifacts manufactured from this material are labeled unknown in the assemblage, although it is speculated that the total is less than fifty.

The material does not appear to fit within gravel cherts. Exterior portions of the material remain blocky and lack weathering that would be typical of water or ice transported cherts. The material was not a large portion of the assemblage and no unmodified blocks of the material were collected. However, because the material may be a new Indiana bedrock lithic type it is described below.

The material is a fairly high quality with clean, sharp edges. The material is banded with layers of chert and layers of cemented sand. In the artifacts recovered, the banding averages between one and two millimeters. The sand is cemented by a translucent, milky chert that is almost opalescent at times, while the chert bands resemble Liston Creek chert. Fossil inclusions include crinoid stems and unidentified fragmented fossils. The coloration of the chert is also similar to Liston Creek chert with most specimens having colors of yellow and tan (10Y1/7, 10YR8/3) but with specimens weathering more red (2.5R6/6). The sand within the lenses is translucent under magnification and the cement is milky in color.

6. *What is the nature and distribution of mound sites within the study area?*

The nature and distribution of mound sites within the study area appears to be rather limited. Big Bangs and Little Bangs mounds are not funerary mounds, and the precise function aside from general ceremonial use is not understood. The mounds appear to have been constructed at

the transition from the Middle to Late Woodland. This is in contrast to the Middle Woodland dominated mounds in the White River drainage.

Aside from Big Bangs and Little Bangs, very few mounds were reported within the survey area, and none of the reported mounds were verified during the current work. A drive by of the location of two reported mounds near Warren in Huntington County could not verify the existence of the mounds. No mounds are reported in earlier histories of Miami County. Two mounds were reported in GLO notes in Wabash County, 12-Wb-517 and 518, but these are located in the Eel River drainage outside of the grant project area. While it is possible that there are undiscovered mounds within the Upper Wabash drainage basin it is assumed that if more were within the area they would have been recorded in the early county histories.

7. *Are mound sites in the Upper Wabash drainage related to the mounds and enclosures in east central Indiana? by Beth McCord*

Gerald (1964:18) related Big Bangs and Little Bangs to Late Woodland Michigan Owasco (Quimby 1960) based on three projectile points. The Owasco points depicted in Quimby (1960:96) include Triangular and corner notched points. The ceramics were related to a general Late Woodland type. Structurally, the mounds were related to the Ginther Mound in Ohio, a Hopewell mound. At least one of points pictured by Gerald (1964:18) that was related to the Owasco culture appears to be Middle Woodland, either a Snyders or Expanding stem style. Another point pictured by Gerald is similar to an Early Woodland Dickson Contracting Stemmed point. Unfortunately, none of the points were curated at GBL and could not be re-examined. The relation of Big Bangs and Little Bangs to the Ginther Mound in Ross County Ohio (Shetrone 1925:154-168) is not supported by the structure of the mounds. The mounds are only similar to Ginther mound in that human remains were not encountered. Ginther mound consists of a mound and a separate circular enclosure. The mound was oval in shape and 100' east-west x 125' north-south and 9' tall. Shetrone attributed the mound to Hopewell based on submound features, features encountered at the base of the mound and artifacts recovered. None of the features were consistent with Big or Little Bangs.

Big Bangs and Little Bangs do not appear to be related to the mounds and enclosures from east central Indiana in the Upper White River and Whitewater drainages. The earthworks from east central Indiana are related to the Middle Woodland New Castle Phase (McCord 2006:106-108). The sites from east central Indiana date between cal 250 BC and AD 350. The New Castle Phase sites typically contain diagnostic artifacts relating to the Adena and Hopewell complexes (McCord and Cochran 2000). New Castle Phase mounds typically contain human remains, and fewer numbers of lithic debris are reported (McCord and Cochran 2000).

The mounds do not appear to be related to mounds and enclosures in adjacent counties in the Maumee drainage basin. Early county histories (Goodspeed 1882, Robertson 1875, Slocum 1905) note several mounds and earthworks. Several of the sites in this region have been attributed to the Western Basin Tradition (Stothers 1999:194-211, White et al. 2003). The tradition consists of four sequential phases dating between AD 500 and 1300. Western Basin mounds contain human remains.

The mounds appear to be a regionally distinct phenomena. Occupation in the Upper Wabash drainage during the Middle Woodland/Late Woodland transition is documented, but not well represented. Site 12-Hu-935, the Moore Site, had an uncorrected radiocarbon date of AD 460 \pm 60 from a circular pit filled with fire-cracked rock (Zoll et al. 1991:74). Undecorated body sherds were recovered from the Moore site (Sherman and Plunkett 1999:103-104) that appear similar to those described by Gerald (1964:13-14) from Big Bangs. The All Seasons site, 12-Mi-224, also produced an uncorrected radiocarbon date of AD 380 \pm 60 from a charcoal concentration (Cochran and James 1986). The site also contained ceramics that could be similar to those recovered from Big Bangs. The ceramics from the Moore site and the All Seasons site were both related to ceramic traditions from the Great Lakes region, but neither was attributed directly to the region. Other excavation data from the time period and the region is severely lacking, but diagnostic artifacts from Middle Woodland/Late Woodland period have been recovered from numerous surface sites in the Upper Wabash drainage.

While the mounds appear unique to the region, they are within known Middle Woodland/Late Woodland settlement for the region. In a general sense, the mounds fit a pattern of mound building continuing in the late Middle Woodland/Late Woodland period (eg. Wayne Mortuary Complex, Halsey 1976). Based on current evidence, Big Bangs and Little Bangs are more similar to mound building traditions for the Great Lakes region than to traditions from central Indiana.

8. *What is the chronology, nature and structure of Big Bangs/Little Bangs and 12-Hu-27 mounds? By Beth McCord*

The chronology of the construction of the Big Bangs mound is less ambiguous with a radiocarbon assay of cal AD 420 to 600. The Triangular biface recovered near the surface in Little Bangs may be intrusive. Triangular Cluster points are reported as early as AD 500 in Tennessee but are generally more accepted after AD 800 (Justice 1987:224-229). Based on the structure and construction of Big Bangs and Little Bangs, there is little doubt that these mounds are related and likely constructed near the same time period. The mound recorded as 12-Hu-27 was not investigated during this project. If the site was a mound, it has been severely damaged.

Gerald's (1964) description of both mounds' structure was confirmed with a few differences. The layer of burned wood was not encountered on the top of the primary mounds. An organic horizon encountered at this location may represent a break in the construction of the mound and the formation of an A-horizon. Also, fire-cracked rocks were incorporated into the fill of the primary mound in Big Bangs. Only the secondary mound fill was tested in Little Bangs, so no discrepancies were noted.

The intent of the construction for both mounds did not include the incorporation of human remains. Of course, the category of "ceremonial activities" has long been associated with earthwork sites (eg. Squier and Davis 1848, Webb and Snow 1945). These activities may have included ceremonies conducted for world renewal, creation, death and rebirth, rites of passage, reincorporation, production of ceremonial objects, feasting, renewing and creating kinship ties, and ancestor worship (Brown 1997, Carr 2005, DeBoer 1997, Hall 1979, Miller 2001, Romain 2000, Seaman 1979). In the basic sense, Big Bangs and Little Bangs would have been a place of gathering. A labor force was necessary to construct the mounds. Traditional activities recorded from historic sources when people gather together include social gatherings, dances, singing, trade, celebrations, games, gambling and story telling (Brown 1997, DeBoer 1997, Miller 2001). While the exact nature of Big Bangs and Little Bangs was not identified by this project, the location of the mounds was important to people living in the Upper Wabash drainage.

9. *What is the structure of historic Native American and early Euro-American settlement in the study area?*

Results from the current survey were not able to elucidate historic Native American or early Euro-American settlement within the study area. No artifacts definitively from historic Native American, and few early Euro-American were discovered. It was thought that Survey Area 9, located between the Mississinewa River and the Wabash River, might contain artifacts associated with the historic Native American time period. Two possible historic Miami village locations were recorded within the survey area (Worthington 1824, Wepler 1984). One was reported to be opposite Osage Village and the other was along the Wabash River. Neither location revealed definitive historic Native American domestic or trade goods. It is possible that the current work did not survey far enough east to cover the village reported along the Wabash, as the exact location is unknown. The most intriguing artifact recovered from a likely location of one of the villages was the cast lead shot from site 12-Mi-649. However, cast lead shot is still manufactured today. Survey Area 9 is recognized as a historically important area for the Miami. The survey area was part of the Godfroy Reserve and was the home of Francis and Gabriel Godfroy (Rafert 1996: 120).

While it is known that multiple historic Native Americans populated the research area, even specifically within certain survey areas, no evidence of their past life was recorded in any of the survey areas. The village locations marked in the GLO notes do not specify the population or the number of structures within the villages, and they may have been quite small. For example, the George Winters painting of Osage Village shows only one structure, a lean to and a fence (Cooke and Ramadhyani 1993). This type of settlement would not likely have a large artifact footprint. Additionally, many artifacts associated with later historic Native Americans would be impossible to sort from other early historic artifacts. The earliest historic artifacts recovered during the survey, comprised of multiple types of decorated whiteware, have known manufacture dates between 1800 and 1850. These may fit in the time period when the area was occupied by historic Native Americans, although these artifacts would appear to correspond to the latter part of the historic Native American occupation of the area. Due to the potential historic significance of sites within Survey Area 9, sites containing early historic artifacts were recommended for testing.

CONCLUSIONS AND RECOMMENDATIONS

This project targeted archaeological resources in the Little River and Upper Wabash River in Huntington, Miami and Wabash counties, Indiana. The project area was selected for its expansive valley combined with recent river terraces that contain extensive outwash deposits. The area within and around the Little River and Wabash River valleys are seriously threatened by gravel mining. The goals of the project were to investigate previously unsurveyed portions of the valleys, refine settlement patterns of the precontact and early Euro-American era and increase Indiana's site data base.

Approximately 791 acres of agricultural land were surveyed during this project and 467 new archaeological sites were recorded. Precontact era components were identified from 460 sites and Historic components were identified from 28 sites. The survey recovered 10, 237 prehistoric artifacts and 556 historic artifacts. Most of the precontact sites were unidentified by cultural period, but every prehistoric cultural period was documented. Fifty-one sites were recommended for further assessment or testing. An additional 287 sites were recommended for additional surface archaeological assessment.

The survey resulted in the rediscovery of some distinctive characteristics of the Wabash Valley. It was noted that Late Woodland settlement was much more focused within the valley than within the White River or the Maumee drainages. Data recovered suggests long term occupations within the valley with short term extractive camps within the uplands. The Paleo-Indian, Early Woodland and Middle Woodland sites occurred in low frequency. The dearth of pottery from surface sites within the Wabash Valley continues to defy adequate explanation.

The average site density recorded for the project area for precontact sites was one site per 1.7 acres. This density was one of the highest in the region, and only surpassed by survey conducted at the Huntington Lake. The highest artifact densities were encountered in survey areas with Genesee (Gessie) soils. This soil is a well drained alluvial soil.

The project suggests that precontact populations used the Wabash valley and its tributary valleys for multiple purposes, including long term settlement. Site duration was most intensive on well drained alluvial soils near the river channel. The continued lack of pottery from the valley is an intriguing problem that bears further research. It is suggested that further pedestrian survey is not sufficient to elucidate trends in the Woodland within the Wabash valley. Excavation will be required to determine settlement systems of the Woodland period in the Upper Wabash.

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