A PROFILE OF TILL PLAIN ARCHAEOLOGY: A SURVEY OF HANCOCK COUNTY, INDIANA

Grant #21517-7

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Beth K. McCord

with sections by
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Archaeological Resources Management Service
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60 site forms. Jutta Vogelbacher conducted the majority of the German Settlement investigation provide a native German's insight. Don Cochran worked tirelessly on determining the origins of Fall Creek chert and he wrote the sections pertaining to chert. Don also served as the Co-PI for this project and helped during every phase of the project. I greatly appreciate his editorial assistance with the German Settlement section and the entire report. Mitch Zoll provided his usual sage advice and kept all the paperwork straight. I'll miss working with Mitch. Thank you all for your help.

ABSTRACT

This Historic Preservation Fund grant project investigated the archaeological resources of Hancock County. Nearly 800 acres of agricultural land were surveyed by pedestrian transects. The survey recorded 161 new archaeological sites, recovered 702 prehistoric artifacts and 950 historic artifacts from 14 locations across the county. The project also visited over 100 historically documented sites and recorded 13 new and two previously recorded sites German Settlement in Sugar Creek Township was investigated. Several local collections were reviewed and correlated to 17 archaeological sites. In total, 193 archaeological site inventory forms were completed. To assist in the management of archaeological data from Hancock County, a GIS database was also created. The information obtained from this project was then compared to regional information. While Hancock County archaeology is analogous to the till plain region, unique environmental characteristics distinguish the county. The abundance of poorly drained soils in the county amplifies the relationship of well drained soils and prehistoric settlement.

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INTRODUCTION

The Archaeological Resources Management Service (ARMS) at Ball State University conducted a Historic Preservation Fund Grant to survey portions of Hancock County, Indiana. The project involved a pedestrian survey of nearly 800 acres of agricultural land, survey of over 100 historic sites, and documentation of local collections. The main goals of the project were to increase the site data base, to construct a cultural chronology, to refine settlement patterns of the precontact era and to investigate early Euro-American settlement within the county.

Hancock County is unique in comparison to surrounding counties in several ways and these distinctive characteristics inspired the current project. 1) Hancock County is data deficient with only 189 archaeological sites recorded. The surrounding counties all have significantly more sites on record. 2) The cultural affiliation for defined sites is better recognized and understood in the surrounding region. Hancock County is situated to provide significant information on cultural/population boundaries. 3) The physiography of Hancock County is somewhat different than the surrounding counties. Each of the surrounding counties has a larger river and associated valley that is primarily responsible for draining the county. This could have a significant influence on the precontact and historic settlement in the county.

The following research questions were constructed to guide this project:

1. What is the cultural chronology for Hancock County?
2. What is the settlement pattern for different cultural contexts?
3. Are Late Archaic sites found with the greatest frequency, followed by Early Archaic and Late Woodland as elsewhere?
4. What is the average site density within the county?
5. Is prehistoric occupation more extensive and/or more intensive at the ecotones between the environmental zones?
6. Can German identity be distinguished from other early Euro-American settlement?
7. What is the potential for buried archaeological sites within the county?
8. What chert resources were utilized in the county? Are there outcrops of Fall Creek chert?

BACKGROUND

Natural Setting

Location

Hancock County is located in central Indiana, bounded by Marion, Hamilton, Madison, Henry, Rush and Shelby counties (Figure 1). The county has an area of approximately 195,200 acres (Ruesch 1978:1). The county was formed in 1828 and is currently the sixth fastest growing county in the state (www.stats.indiana.edu/profiles/pr18059.html). The total county population according to the 2005 census was 63,138. Greenfield, located in Center Township, serves as the county seat and is the largest city within the county. Other smaller cities and towns include Fortville, Cumberland, New Palestine, McCordsville, Shirley, Wilkinson and Spring Lake.

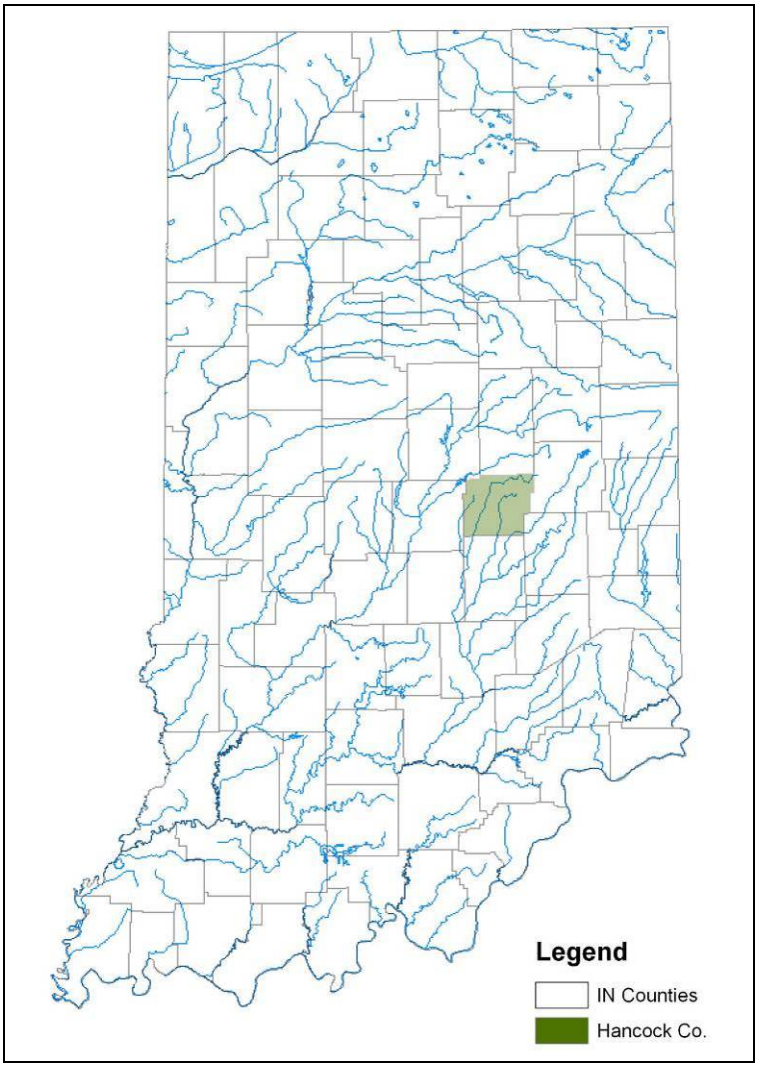

Figure 1. Location of Hancock County within the state.

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). Hancock County is 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. In Hancock County, these zones are the Bluffton Plain, the Scottsburg Lowland and the Muscatuck Regional Slope (Schneider 1966:54).

The bedrock of Hancock County contains Devonian limestone and Silurian rocks (Gutschick 1966:5), and both ages contain limestone or dolomite (Gefell 1983:17). No known bedrock sources are known in the county (Gefell 1983:20). Bedrock chert outcrops are, therefore, not known within the county.

Chert – by Donald R. Cochran

Chert resources in the till plain region of Indiana are well documented, although inadequately defined. Chert from bedrock exposures in the till plain region include Liston Creek (Cumings and Schrock 1928, Wepler 1982, Wepler and Cochran 1983, Cree 1991:44), Kenneth (Carson 1984), Attica (Cantin 2005), and Laurel (Cantin 2005). Gravel sources of chert in the till plain region are widespread, abundant and variable in quantity, quality and abundance (Gooding 1973, Cochran 1994:7, Cantin 2005). Fall Creek chert is a gravel chert defined originally from till gravels along Fall Creek on Reformatory property near Ingalls (Lumbis and Cochran 1984). Gravel sources of Fall Creek chert occur as far west as Strawtown (McCord and Cochran 2003) and east to near Hagerstown in Wayne County. An abundant gravel source for Fall Creek chert is recorded near Geist Reservoir (Cree 1991:44).

Although no bedrock outcrops are recorded in Hancock County, gravel sources of chert appear plentiful. The percentage of chert in till gravels in Hancock County ranges between 0.25 and 5 % with an average of 1.5% (Blatchley 1905:501). The highest densities of gravel chert are recorded in the northern third of the county (between 2 and 5%) and the lowest densities are in the southern third of the county (0.25 to 1.5%) (Blatchley 1905:500-512). Given that a bedrock exposure of Liston Creek chert occurs just north of the Hancock County line (Cumings and Schrock 1928), the higher concentrations of chert in the northern third of the county are expected. However, the overall pattern of north to south decrease in chert density in the till gravels is the reverse of the pattern established for Wisconsin tills within the region (Gooding 1973:20).

Bedrock sources of chert are reported from counties adjacent to Hancock County. A bedrock source of Liston Creek is documented near Ingalls just north of the Hancock County line (Cumings and Schrock 1928, Wayne 1975, Curtis Tomak, personal communication 2000). Laurel chert outcrops are recorded in adjacent Rush County and Laurel chert is common in gravels along the Big Blue River in northwestern Rush County (Angst 1997:31).

Glacial History

Glacial drift covers the bedrock of Hancock County (Gefell 1983:17). The Kansan, Illinoian and Wisconsinan glacial episodes all covered the county leaving drift that varies between 50 to over 300 feet (Gefell 1983: 20-24). The Wisconsin age deposits buried the previous glacial episodes and all of the surface glacial land forms in the county are part of the Cartersburg Till Member of the Trafalgar Formation (Wayne 1963, Wayne 1966:26, Gefell 1983:20 & 25). The Center Grove Till Member occurs below the Cartersburg Till Member (Gefell 1983:20). The Trafalgar formation is composed primarily of a massive calcareous conglomeritic mudstone, a compact but uncemented sandy, silty, matrix, with scattered beds of gravel, sand and silt (Wayne 1963:45).

Unconsolidated sediments overlie the Trafalagar Formation 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). Most of the Atherton Formation sediments in the county belong to the outwash facies. This facies consists of stratified coarse-grained sediments which were deposited in sheets and by glacial meltwater currents in valley fill (Wayne 1963:32).

The outwash facies of the Atherton Formation intertongues and intergrades with other formations in the state and it is disconformably overlain by the Martinsville Formation in most of 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 floodplains of streams (Wayne 1963:28-29).

Physiography

Hancock County lies within the New Castle Till Plains and Drainageways section of Indiana that is characterized as a relatively featureless plain of low relief dissected by a crisscross pattern of meltwater features (Gray 2000). The county has relatively small differences in topographic relief, but the greatest relief is evident along the breaks between the uplands and the bottom lands of streams (Ruesch 1978:53). The difference in elevation throughout the county is approximately 250 feet (Ruesch 1978:53).

Ground moraine predominates in the western portion of the county and ridge moraine is identified in the eastern half of the county (Gefell 1983:24). Glacial sluiceways occur predominantly in the central and western regions of the county. Some of the sluiceways are occupied with underfit streams while others are not apparently drained (Gefell 1983:15). The largest areas of sand and gravel deposits are associated with the outwash terrace along the Blue River valley in the southeastern portion of the county (Gefell 1983:27). The largest area of alluvial soils is also associated with the Blue River (Gefell 1983:49). Peat and muck deposits in the county are found primarily in

areas of ridge moraine and along glacial sluiceways. Kames and eskers occur throughout the county, but comprise less than one percent of the total county area (Gefell 1983).

Soils

The soils of Hancock County formed in glacial till, glacial outwash, lacustrine deposits, alluvium and windblown material (Ruesch 1978:50). The soils of the county have been categorized into three soil associations (Table 1). The specific soils mapped within the county are dominated by Crosby soil series, a deep, somewhat poorly drained soil found on uplands (40.1%); Brookston soil series, a deep, very poorly drained soil found in depressions on the uplands (33.0%); and Miami soil series, deep, well drained soils found on rolling uplands (14.0%) (Ruesch 1978:5, 8, 13).

Table 1.
Soil Associations (Ruesch 1978:2-3)

Association	Description	Landform	%
Crosby – Brookston	Deep, somewhat poorly drained and very poorly drained, nearly level silt loams and silty clay loams that formed in glacial till or in loamy sediment and underlying glacial till	Broad uplands	72.7
Miami – Crosby	Deep, well drained and somewhat poorly drained, nearly level to strongly sloping silt loams and clay loams that formed in glacial till	Rolling uplands and breaks	16.9
Ockley-Sloan-Shoals	Deep, well drained, somewhat poorly drained and very poorly drained, nearly level to moderately sloping silt loams and silty clay loams that formed in glacial outwash and alluvium	Terraces, outwash plains, floodplains	10.4

Hancock County has a high incidence of Crosby-Brookston soils. To place Hancock County within a regional perspective and determine if this incidence was unique in the region, the soils and proportionate extent of these soils from the surrounding counties were examined (Table 2). The Crosby soils of Hancock County compare fairly evenly within the surrounding counties, except for Henry and Rush counties that had approximately 20% or fewer Crosby soils. Slightly over 40% of Hancock County is mapped as Brookston soils. The nearest comparisons are Hamilton, Madison and Rush counties with approximately 24% of the county composed of Brookston soils. The other counties contained less than 20% of Brookston soils. Hancock County had 14% occurrence of Miami soils which is lower than every county except Shelby. The high percentage of poorly drained Brookston and low percentage of well drained Miami soils in the till plain area of Hancock County may effect the settlement patterns somewhat differently than other areas of the Till Plain region in Indiana.

Table 2. Comparison of Regional Soils			
County	Soil Series	Percentage in County	Reference
Hancock	Crosby	33.0	Ruesch 1978
	Brookston	40.1	
	Miami	14.0	
Marion	Crosby	30.1	Strum and Gilbert 1978
	Brookston	16.6	
	Miami	30.5	
Hamilton	Crosby	36.5	Hosteter 1978
	Brookston	24.4	
	Miami	26.3	
Madison	Crosby	26.2	Schermerhorn 1967
	Brookston	24.2	
	Miami	20.8	
Henry	Crosby	22.1	Hillis and Neely 1987
	Cyclone and Treaty (Brookston equivalent)	20.9	
	Miami	18.2	
Rush	Crosby	19.6	Brock 1986
	Cyclone and Treaty (Brookston equivalent)	23.2	
	Miami	20.4	
Shelby	Crosby	34.9	Brownfield 1974
	Brookston	16.6	
	Miami	12.4	

Water Resources

Hancock County lies within the White River drainage basin between the Upper White, West Fork and the Upper White, East Fork (Kingsbury 1970). Most of the county is somewhat dissected by drainages (Ruesch 1978:51)(Figure 2). The general drainage pattern is dendritic and water flows from the northeast to the southwest (Gefell 1983:12). Several glacial sluiceways transect areas of ridge and ground moraines. Infiltration basins and scattered kettles are common in areas of ridge moraines and some have filled with peat and muck deposits (Gefell 1983:12).

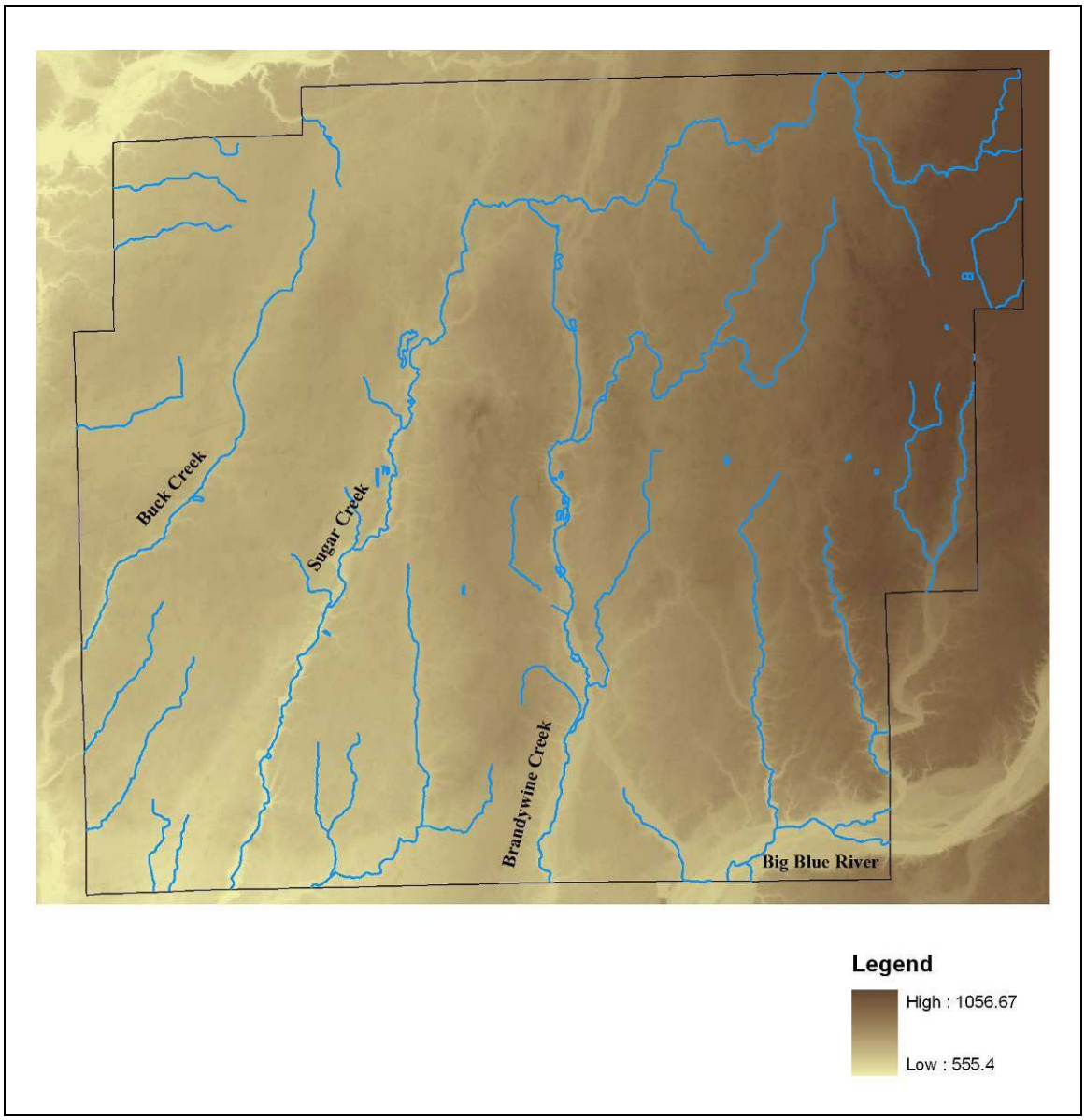

Figure 2. Digital Elevation Model of Hancock County with drainages.

Sugar Creek drains most of the county. Other major drainages include Brandywine Creek, also in the central part of the county, Buck Creek on the west and the Big Blue and its tributaries to the east (Ruesch 1978:54). Brandywine Creek heads within the county and Sugar Creek heads just across the Henry County line. Drainage in the upland till plains is undeveloped with marshes and swamps common prior to artificial drainage (Ruesch 1978:54). No natural lakes or ponds occur in the county, but springs are reported (Brown 1886:195).

The lack of a larger river system and associated valleys makes Hancock County different from the surrounding counties. The county is situated between the major

drainages of the White River to the northwest and the Blue River in the southeast corner of the county. This could have a significant influence on the precontact and historic settlement in the county.

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 of 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 mestothermal unit which has a warm temperature climate similar to those areas in the south and west (Newman 1966:171). Since Hancock County is in central Indiana, it experiences alternate flows of cool Canadian air with tropical air from the south and causes daily and seasonal variability in the climate (Ruesch 1978:54).

The temperature and precipitation data presented were collected at Greenfield between 1939 and 1973 (Ruesch 1978:56). The average minimum temperature in January was 20 degrees. The average maximum temperature in July was 87 degrees. The total annual precipitation was 39.9 inches. The precipitation in the spring and early summer generally exceeded precipitation in the winter, but it was fairly evenly distributed.

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) 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 (Newman 1966:174-176).

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 paleoclimates has been hampered by ambiguous climatic data that have been used to support conflicting interpretations. A study conducted at four different locations in Ohio concluded that a general pattern of modern climatic gradients was established by 10,000 B.P.; however, local variation was demonstrated at each location and the entire Holocene was "marked by constantly varying conditions" (Shane, Snyder and Anderson 2001:36).

A model applicable to the Indiana region can be discussed as a general climatic pattern. As the glacial ice retreated at the end of the Wisconsin Ice Age, the interglacial or Holocene period began a shift to warmer climate with conditions characterized as cool and moist. The hallmark for the Holocene across Ohio was the establishment of deciduous forests dominated by oak (Shane, Snyder and Anderson 2001:36). 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 2^0 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 wildfire, wind damage and flooding that in turn dictate the landscape mosaic. Environmental changes can result in new conditions that have profound effects on biota (Delcourt and Delcourt 1991:1, 152).

Flora

As the climate shifted in Indiana after the end of the Pleistocence, so did the plant species. Table 3 presents the transformation of the vegetative sequence constructed by Shane (1976) to reflect the general changes that took place in the region since the retreat of the glacial ice. Table 3 is a regional generalization and of course does not cover Hancock County specifically. Vegetative responses have not been recorded in sediments from the Great Lakes Region (Holloway and Bryant 1985:237).

Table 3.
Vegetation Sequence of Central Indiana
(Cochran and Buehring 1985:9, after Shane 1976)

<table>
<tr><td>AD 2000</td><td rowspan="2">Historic</td><td rowspan="8">Deciduous Forest</td></tr>
<tr><td>AD 1000</td></tr>
<tr><td rowspan="2">0</td><td>Late Woodland</td></tr>
<tr><td>Middle Woodland</td></tr>
<tr><td>1000 BC</td><td>Early Woodland</td></tr>
<tr><td>2000 BC</td><td rowspan="2">Late Archaic</td></tr>
<tr><td>3000 BC</td></tr>
<tr><td>4000 BC</td><td rowspan="3">Middle Archaic</td><td rowspan="2">Prairies and Open Vegetation</td></tr>
<tr><td>5000 BC</td></tr>
<tr><td>6000 BC</td><td></td></tr>
<tr><td>7000 BC</td><td rowspan="2">Early Archaic/ Late Paleo Indian</td><td rowspan="2">Deciduous Forest</td></tr>
<tr><td>8000 BC</td></tr>
<tr><td>9000 BC</td><td rowspan="7">Early Paleo Indian</td><td>Pine Maximum</td></tr>
<tr><td>1000 BC</td><td rowspan="2">Conifer-Deciduous Woodland</td></tr>
<tr><td>11000 BC</td></tr>
<tr><td>12000 BC</td><td>Boreal Forest</td></tr>
<tr><td rowspan="2">13000 BC</td><td>Park Tundra</td></tr>
<tr><td>Tundra or Open Areas</td></tr>
<tr><td>14000 BC</td><td>Periglacial Zone</td></tr>
<tr><td>15000 BC</td><td>Wisconsin Ice</td></tr>
</table>

The Christensen Bog in central Hancock County (Graham et al. 1983) and a kettle basin near Gynneville in Shelby County (Jackson 1983) provide some local floral data from the late Pleistocene. Pollen analysis from both sites has allowed for environmental reconstructions for a period between approximately 14,000 BP to 11,000 BP. Both basins contain similar pollen strata. The lowermost zone indicates an open spruce dominated parkland that is transitional between tundra and forest. Between 13,000 and 12,000 BP, this zone is replaced in the Christensen Bog by a fir-birch-*Cupressaceae* zone and indicates a more diversified forest community (Graham et al. 1983). The Gynneville kettle also shows a transition and the pollen recovered was equated with an open mixed spruce-hardwood forest at approximately 11,000 BP (Jackson 1983). Unfortunately, palynology studies into the Holocene period are lacking.

With historic documentation, detailed descriptions of the vegetation in central Indiana can be given. The historic forest descriptions should be representative of the decidious vegetation occurring during the Woodland period. Petty and Jackson's (1966) study of the natural vegetation of Indiana in 1816 shows Hancock County within the beech-maple forest association. The beech-maple forest developed from the mesophytic forest as northward postglacial migration occurred. Beech-maple forests usually have beech as the most abundant canopy trees with sugar maple co-dominate in the canopy and dominant in the understory. Other species occurring in beech-maple forests include: black walnut, white oak, burr oak, red oak, tulip poplar, white ash, American elm, slippery elm, cork elm, basswood, black gum, hickory, sassafras and black cherry. Small tree understory is generally either redbud-dogwood-blue beech or dogwood-hop hornbeam. Shrub layers usually include pawpaw, spicebush, greenbriar, elderberry, leatherwood, wahoo and maple-leaf viburnum. The most prominent herbs occur in the spring with 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. Hancock County would have also contained areas of floodplain forest and prairie. A study of floodplain forests along the East and West forks of the White River found the following species dominant: silver maple, sycamore, American elm, cottonwood, hackberry, cork elm, box-elder, black willow, white ash and red elm (Petty and Jackson 1966:276). The same study found the predominance of hawthorn, redbud, wild plum, hop hornbeam and flowering dogwood in the understory, elderberry, spice bush, wahoo, swamp-privet, wafer-ash and pawpaw in the shrubbery and poison-ivy, grapes, green briar, trumpet creeper and Virginian creeper in the vines (Petty and Jackson 1966:276). Beech and tulip poplar would have been important in floodplain forests in pre-Euroamerican times, but are now absence 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 Pleistocene through Holocene times. Various Pleistocene age fauna have been found in Indiana. Early twentieth century accounts list bison, giant beaver, caribou, Virginai deer, dire

wolf, elk, 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-faced bear, giant tortoise, white-tailed deer, Canadian goose, armadillo, jaguar, sabertooth tiger and camel (Richards 1984).

The Christensen Bog, located approximately 6 miles north of Greenfield, provides local information on Late Pleistocene fauna (Graham et al. 1983). Within this bog, the remains of mastodon, white tailed deer, caribou, raccoon, mink, coyote or domestic dog, muskrat, giant beaver, turkey, surface feeding duck, painted turtle, snapping turtle, soft-shelled turtle and leopard frog were recovered. The remains accumulated by natural attrition and were recovered in six stratigraphic units. The bog deposits dated between 14,000 and 11,000 BP.

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 species of fish have been identified (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 (Minton 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 (Minton 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 predominance of somewhat to very poorly drained habitats across the till plain of the county may have focused habitations on better drained or higher locations. The lack of a larger river system and associated valleys could also have significantly influenced the precontact and historic settlement in the county.

Archaeological Setting

Archaeological information specific to Hancock County is limited. Therefore, information to construct a regional culture history was supplemented from better documented areas of the Blue River and Upper White River valleys and the state of Indiana (Burkett and Hicks 1986, Cochran 1994, Cochran 2004, James and Johnson 2003, Justice 1987, Kellar 1983, McCord and Cochran 2003, Swartz 1981). Prior to this investigation only 189 archaeological sites were on record for the county. Information from these sites and previous archaeological surveys are also presented.

Culture History

The natural setting of Hancock County demonstrates a hospitable environment following the retreat of the glaciers. The complete range of prehistoric human occupation from Paleoindian to Late Woodland has been documented in Hancock County (Dvision of Historic Preservation and Archaeology (DHPA) site files) and east central Indiana (Burkett and Hicks 1986, Cochran 1994).

Paleoindian cultures entered Indiana as the Wisconsin glacial advance began retreating to the north circa 12,000 to 10,000 BP. The environment of this period is characterized as a succession of tundra, park tundra, boreal forest, conifer-deciduous forest, ending in a pine maximum forest (Table 3). From the Christensen Bog, an open spruce dominated parkland that is transitional between tundra and forest was replaced by a fir-birch-Cupressaceae zone and indicates a more diversified forest community during the Paleoindian era (Graham et al. 1983). Paleoindian sites are generally small surface scatters or isolated points located in upland areas resulting from small family bands wandering over large territories in search of game animals that may have included Pleistocene megafauna. The defining artifacts from this time period are the lanceolate point forms including fluted Clovis points and unfluted Agate Basin, Hi-Lo, Holcombe, and Plainview points. No Paleoindian sites with *in situ* deposits have been excavated in Indiana.

During the Early Archaic (10,000 to 8,000 BP), people were adapting to a warming environment that changed floral and faunal resources in the region. Forests became more diversified with deciduous species and the large megafauna were extinct. Early Archaic sites may be larger than the previous Paleoindian sites, but data for east central Indiana does not confirm this. Early Archaic sites are found on almost every land form and Early Archaic point styles are frequently found in the region. Technological changes are displayed in a larger diversity of projectile points with new hafting techniques. Point forms such as Dalton, Big Sandy, Lost Lake, Charleston, St. Charles, Thebes, Decatur, Kirk, Palmer, MacCorkle, St. Albans, LeCroy and Kanawha have been reported from the Upper White River Valley. While Thebes, Kirk and Bifurcate Traditions occur in the region, no excavation data is available from the region. Ground stone tools make their first appearance during this time.

Middle Archaic (8,000 to 5,000 BP) cultures are associated with a warming and drying period that occurred across the Midwest, once again changing the resources available. Forests may have declined to prairie vegetation, but rebounded to forest at the end of this period. More residential stability and a broader food base are suppose to occur during the Middle Archaic, but very few sites of this age are found in central Indiana. Sites are found in valley and valley edge settings with supposed decreased emphasis on the uplands. Point styles from this period found in the region include: Raddatz, Godar, Stanley, Karnak and Matanzas. Ground stone tools become more varied during this time.

With the Late Archaic (5,000 to 3,000 BP), the environment stabilizes to the conditions and deciduous forests encountered by Historic Euroamericans. Late Archaic artifacts are some of the most frequently encountered in the 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 the cultivation of native plants develops. 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. Diagnostic projectile points from the region include: Mantanzas, Late Archaic Stemmed, McWhinney, Karnak, Lamoka, Table Rock, Brewerton, Riverton and Turkey Tail. The worked bone industry seems more elaborate. Ground stone artifacts such as pestles, axes, adzes, celts, bannerstones and gorgets are prominent during this period. Cultures, phases or foci from this period include French Lick, Maple Creek, Glacial Kame and Riverton. A reference by Redding (1892) suggests the presence of Glacial Kame shell artifacts associated with burials in gravel banks in Henry County and an engraved shell gorget typical of Glacial Kame artifacts was reported from a burial in a gravel and sand deposit (Moore 1901 in Swartz 1968, Heilman 1969). The McKinley site in Hamilton County (Justice 1993) is a regional example of a multicomponent site with a Late Archaic occupation.

The Early Woodland period (3,000 to 2,200 BP) is marked by the introduction of pottery. Ceremonialism is heightened as evidenced by the construction of mounds and earthworks. Early Woodland habitations occur infrequently in the region, but the ceremonial sites are very visible. Hunting, gathering and limited horticulture continue during this period. Early Woodland ceramics found in the region are defined as Marion Thick. Diagnostic points include Cypress, 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 White Site in Henry County is an example of a mortuary mound from the later end of this time period (Swartz 1973). There are no verified mounds in Hancock County.

The Middle Woodland period (2,200 to 1,400 BP) marks a climax in ceremonial behavior. The habitations, similar to Early Woodland, occur infrequently in the region. The economy continues 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 demonstrate an expansion of trade networks. Middle Woodland ceramics found in the region are New Castle Incised, Adena Plain, McGraw and Scioto series. Diagnostic lithics include Robbins, Snyders, Lowe, Chesser, and Steuben points and lamellar bladelets. Archaeological units that may occur in the area are Adena and Scioto. No habitation sites with *in situ* Middle Woodland deposits was been excavated in the region. The earthworks at Mound State Park (Vickery 1979, Cochran and McCord 2001) are an example of ceremonial sites from the early end of this period. An earthwork is reportedly located on Brandywine Creek in an early Hancock County history (Brown 1886:197), but its origin has not been confirmed. By AD 300, elaborate mound building ended in the region.

The Late Woodland period (1,400 to 300 BP) sites occur in the third highest frequency in the region. The period shows a decline in the importance of mounds. The bow and arrow is firmly established and the cultivation of domestic crops rises in importance. Maize becomes an important addition to the diet. Pottery is rarely found outside of the floodplain. Ceramic styles found in the region include Jack's Reef and Albee, but none have been reported from the county. Diagnostic lithics include Lowe, Chesser, Steuben, Racoon Side Notched, Jack's Reef Corner Notched and Triangular Cluster points. Archaeological Phases recognized in the region include Intrusive Mound and Albee.

The Late Prehistoric period (1000 to 300 BP) shares the traits of the Late Woodland but show adaptation to a more focused economy based on corn agriculture. Village sites from the Upper White River drainage demonstrate segregated activity areas and palisades may occur. Along with maize horticulture, beans and squash also become important and the importance of cultivated native crops declines. Ceramics from this period are Bowen, Oliver, Fort Ancient, Western Basin and Oneota, but none have been reported from the county. Triangular points are the only projectile form used. Archaeological units recognized in the Upper White River drainage from the period are Oliver, Western Basin and Oneota and are well documented at Strawtown in Hamilton County (McCord and Cochran 2003, McCord 2005, McCullough et al. 2004, McCullough 2005, White et al. 2002, White et al. 2003). These Late Prehistoric manifestations have not yet been documented in Hancock County or the Big Blue River drainage.

At the later end of the Late Woodland/Prehistoric period, much of Indiana is reportedly depopulated. Contact with Europeans that resulted in epidemic disease and warfare associated with the fur trade are believed key factors in the abandonment of the region. By the late 1700s, several Historic Native American tribes were reported in Indiana. The Miami, Delaware and Potawatomi are the most often mentioned peoples in east central Indiana. Beginning in the 1820s, most of the Native Americans inhabiting Indiana ceded their land rights and moved to western lands. Indiana was open for Euro-American settlement.

The first Euro-American settlers in Hancock county were reported to have settled in Blue River Township in 1818 (Binford 1882:33). The county was officially organized

in 1828 when it was separated from Madison County (Binford 1882:31). Early histories of the county (Binford 1882, Richman 1916) recount the settling of the county, providing details of early industry, agriculture and education. Some of the information is very specific on the early development of the county providing locations of mills, tile manufacturers, tanneries, schools and residences (Anonymous 1968, Binford 1882, Griffing 1976, Richman 1916). One report states that Hancock County developed a reputation of a "sickly climate" due to malarial diseases suffered by early pioneers prior to drainage tiles and ditches to drain stagnant or sluggish water (Brown 1886:195). A strong ethnic community, known as the German Settlement, was formed in 1828 and was depicted as, "… a frugal, industrious people, and have made their portion of Sugar Creek township a garden spot in the county" (Richman 1916:755). Other identified ethnic groups included an Irish settlement in Vernon Township (Richman 1916:797).

Previous Archaeological Investigations

One of the primary reasons for this project is that Hancock County is archaeologically data deficient in comparison with surrounding counties in central and east central Indiana. Only 189 archaeological sites were on record for the county prior to this project. A review of site files and archaeological projects conducted in Hancock County was undertaken. Information was obtained from files at ARMS and at DHPA.

Of the 189 site numbers issued, information was found for 164 archaeological sites (Appendix A). Some early site numbers were apparently not used and some site forms were never completed. A few sites had been issued duplicate numbers as well. Of the 164 sites, 44 of the sites represent collector reports. Ninety-five of the sites were recorded during compliance surveys. The remainder of the sites were recorded by accidental discovery or non-CRM reports.

From the information available at this time, 78 Phase Ia field reconnaissance projects have been conducted in Hancock County (Appendix B). These projects have surveyed approximately 616.2 acres within the county (and recorded 95 sites). Based on previous surveys, approximately one site per every 6.5 acres should be expected in the county. This figure does not take into account variation in environmental setting, landform or soil characteristics. The majority of the compliance surveys conducted in the county were linear in nature and linear surveys provide limited data for predictive modeling (Trubowitz 1977).

Based on previous surveys and site data, the cultural chronology of the county encompasses prehistoric Paleoindian through Historic components (Appendix A). The majority of prehistoric sites had unidentified components and were most often recorded as lithic scatters (Tables 4 & 5). Fewer Historic era sites have been recorded and were often recorded as scatters as well (Tables 4 & 5).

Table 4. Site Components		
Component	No.	Comment
Unidentified Prehistoric	90	8 multicomponent (historic)
Paleoindian	7	5 multicomponent
Early Archaic	24	16 multicomponent
Middle Archaic	6	5 multicomponent
Late Archaic	20	9 multicomponent
Early Woodland	3	3 multicomponent
Middle Woodland	8	6 multicomponent
Late Woodland	10	9 multicomponent
Historic	23	10 multicomponent

Table 5. Site Types			
Prehistoric Type	No.	Historic Type	No.
Scatter/camp/habitation	93	Scatters	14
Isolates	47	Schoolhouse (possible schoolhouse)	4
Cache	1	Burial/cemetery	2
Burial	1	House/dump	1
Unknown	2	Bridge	1
		Isolate	1

The site records were also examined for the types of projectile points previously recovered from Hancock County. Since the early site forms did not contain artifact counts, no attempt was made to quantify the number of points by type. Table 6 provides a list of known point types from Hancock County.

Table 6. Previously Documented Points in Hancock County	
Cultural Period	Projectile Points
Late Woodland	Jack's Reef, Madison
Middle Woodland	Middle Woodland Expanding Stem, Lowe, Snyders
Early Woodland	Adena, Robbins
Late Archaic	Brewerton Corner Notched, Brewerton Side Notched, Ledbetter, Matanzas, McWhinney, Riverton, Table Rock, Turkey Tail, Unclassified LateArchaic/Early Woodland Stemmed Point
Middle Archaic	Godar, Raddatz, Unclassified Middle Archaic Point
Early Archaic	Hardin Barbed, Kirk Corner Notched, Kirk Stemmed, Lost Lake, MacCorkle, Rice Lobed, St. Charles, Thebes, Unclassified Bifurcate, Unclassified Early Archaic Corner Notched
Late Paleoindian	Hi-Lo
Paleoindian	Clovis, Cumberland, Fluted "PaleoIndian" Point

While information was limited, the types of cherts identified from the county were also examined. Once again since early site information did not contain artifact counts and in many cases the raw materials were not identified, no attempt was made to quantify chert use. Cherts that were identified included Fall Creek, heat treated Fall Creek, Harrodsburg, Holland, Jeffersonville, Laurel, heat treated Laurel, Wyandotte, and

Cedarville Guelph. Even though the information was of even more limited utility, Table 7 provides a list of cherts with associated time-periods.

Table 7.
Previously Documented Cherts in Hancock County

Cultural Period	Chert
Late Woodland	Fall Creek, Laurel
Middle Woodland	Fall Creek
Early Woodland	Holland
Late Archaic	Jeffersonville, Laurel, Laurel (HT), Wyandotte
Middle Archaic	Harrodsburg, Holland, Fall Creek, Laurel (HT)
Early Archaic	Cedarville Guelph, Fall Creek, Laurel
Late Paleoindian	
Paleoindian	Wyandotte

The information obtained from a review of previously recorded sites and surveys in the county provided some indications of the archaeological resources in the county. Some of the data sources were more complete than others. As expected, early reports and site forms often lack details on the types and quantity of artifacts encountered. Information concerning the environmental setting is either absent or incorrect in many cases. In essence, the low numbers of professionally recorded sites and systematic surveys that are not linear hamper construction of a reliable cultural chronology, settlement patterns or chert usage specific to the county.

Regional Prehistoric Information

Due to the limited information available for Hancock County, regional archaeological surveys from the surrounding counties of Marion, Hamilton, Madison, Henry, and Rush (Angst 1997, Burkett and Hicks 1986, Conover 1988, Cree 1991, McCord and Cochran 2003) and the nearby counties of Delaware and Jay (Cree et al. 1994, James and Cochran 1984) were consulted for data on site density by landform that would be comparable for Hancock County. Site forms on file at ARMS were also consulted for information concerning projectile point types and cherts utilized. In most cases these sources provided more complete information than was available for Hancock County.

Table 8 provides information from regional counties that would be comparable to Hancock County. Several of the surveys contained information on ecotones or environmental zones not explored during this project and were not included. For the purposes of this project, the till plain, outwash terrace, floodplain, and outwash plain/sluiceway were reviewed. Table 8 shows a range of variation in each zone depending on the survey. This variation may be partially influenced by differences in visibility, survey conditions, and survey interval. In general, the sites per acre had a similar range in each zone. Only the outwash plain of Hamilton County (Cree 1991) had a site density lower than one site per 6.0 acres. In this regard, a site density of one site per every 6.5 acres for Hancock County is low compared to regional information. The data available for Hancock County does not allow for a breakdown by different zones.

Based on the regional data, while site densities were similar for the zones presented, more artifacts were encountered in the terrace and floodplain zones. This project will determine if Hancock County is similar in this trend.

Table 8.
Regional Survey Information

County	Zone	Acres Surveyed	Total Artifacts	Sites per Zone	Site per Acre	Artifacts per Acre	Artifacts per Site
Marion[1]	Till Plain	40	71	30	1.33	1.78	2.367
Hamilton[1]		33	17	7	4.71	0.52	2.429
Madison[3]		233	--	177	1.32	--	--
Henry[4]		280	267	61	4.59	1.05	4.36
Rush[5]		218.7	1390	73	3.0	6.36	19.04
Jay[7]		173	114	34	5.0	1.5	3.3
Marion[1]	Terrace	5	8	1	5.0	1.6	8
Hamilton[1]		152.5	787	69	2.21	5.16	11.4
Hamilton [2]		87	475	30	2.9	5.46	15.83
Madison[3]		259	--	107	2.42	--	--
Henry[4]		230	854	46	5.23	0.27	18.75
Rush[5]		276	1101	68	4.06	3.99	16.19
Delaware[6]		70	--	--	2.8	0.65	--
Hamilton[1]	Floodplain	8	11	4	2.0	1.38	2.75
Hamilton [2]		276	1812	53	4.76	6.57	34.18
Madison[3]		140	--	45	3.11	--	--
Rush[5]		169.3	2052	28	6.05	12.12	73.28
Delaware[6]		170	--	--	1.93	5.50	--
Hamilton [2]	Outwash Plain	106	16	9	11.78	--	1.778
Henry[4]		100	75	20	5.00	1.35	3.7
Delaware[6]		100	--	--	2.04	0.65	--

[1]Cree 1991, [2]McCord and Cochran 2003, [3]Conover 1988, [4]Burkett and Hicks 1986, [5]Angst 1997, [6]Cree 1994, [7]James and Cochran 1985

To compare Hancock County with the surrounding regional counties (Marion, Hamilton, Madison, Henry, Rush and Shelby) in terms of point types identified and raw material used, site records on file at ARMS were examined for the types of projectile points previously recovered from the region and the chert types associated by time period. Since the early site forms did not contain artifact counts and ARMS does not have information on every archaeological site in these counties, no attempt was made to quantify the number of points by type. Table 9 provides a list of known points from the region. Table 10 provides a list of cherts with associated time periods from the region. A much wider variety of points and materials were documented in the surrounding region compared to Hancock County. Hancock County is unique in the presence of Hardin Barbed points (Table 6), as it is well outside the defined distribution of Hardin Barbed points (Justice 1987:53)

Table 9. Previously Documented Points from the Region	
Cultural Period	Projectile Points
Late Woodland	Commissary Point, Elliston, Fort Ancient, Jack's Reef, Koster Corner Notched, Levanna, Logan, Madison, Raccoon Notch, Unclassified Late Woodland Corner Notched
Middle Woodland	Bakers Creek, Chesser, Grand, Lowe, Middle Woodland Expanding Stem, Steuben, Snyders
Early Woodland	Adena, Cresap, Cypress Stemmed, Dickson, Gary, Kramer, Little Bear Creek, Robbins, Rossville, Schultz Expanding Stem, Schultz Stemmed, Unclassified Contracting Stem, Unclassified Early Woodland Stemmed, Unclassified Late Archaic/Early Woodland Point
Late Archaic	Bare Island, Bottleneck, Brewerton Corner Notched, Brewerton Eared, Brewerton SN, Buck Creek Barbed, Durst, Elk River, Genesee, Halifax, Karnak,, Lamoka, Ledbetter, Matanzas, Matanzas Flared Base, McWhinney, Motley, Normanskill, Pomranky Triangular, Riverton, Robeson, Saratoga Expanding Stem, Savannah River, Table Rock, Turkey Tail, Unclassified Late Archaic Barbed, Unclassified Late Archaic Contracting Stem, Unclassified Late Archaic Corner Notched, Unclassified Late Archaic Expanding Stem, Unclassified Late Archaic SN, Unclassified Late Archaic Stemmed, Vosburg,
Middle Archaic	Eva, Faulkner, Morrow Mountain, Raddatz, Robinson, Stanley Stemmed, Unclassified Middle Archaic Point, Unclassified Middle Archaic Side Notched, Unclassified Middle Archaic/Late Archaic Corner Notched, White River Archaic, White Springs Point
Early Archaic	Amos, Big Sandy, Cache River, Calf Creek, Charleston Corner Notched, Dalton, Decatur , Fox Valley, Hardaway, Hardin Barbed, Kanawha, Kessel, Kirk Corner Notched, Kirk Stemmed, Kirk Serrated, Lost Lake, LeCroy, MacCorkle, Palmer, Rice Lobed, St. Albans, St. Charles, Thebes, Unclassified Bifurcate, Unclassified Early Archaic Corner Notched, Unclassified Early Archaic Point, Wabash Diagonal Notch
Late Paleoindian	Agate Basin, Hi-Lo, Unclassified Late Paleo Lanceolate
Paleoindian	Holcomb, Fluted Point, Folsom Point

Table 10. Previously Documented Cherts from the Region	
Cultural Period	Chert
Late Woodland	Allens Creek, Attica, Burlington, Fall Creek, heat treated Fall Creek, Flint Ridge, Fossiliferous, Glacial, heat treated Glacial, Hixton Quartzite, heat treated Holland, Indian Creek, Kenneth, Laurel, heat treated Laurel, Liston Creek, Quartzite
Middle Woodland	Attica, Burlington, heat treated Burlington, Fall Creek, Flint Ridge, Glacial, heat treated Glacial, Holland, Laurel, Wyandotte
Early Woodland	Attica, Burlington, Cedarville Guelph, Fall Creek, Flint Ridge, Laurel, heat treated Laurel, Liston Creek, Stanford, Wyandotte, Zaleski
Late Archaic	Allens Creek, heat treated Allens Creek, Attica, heat treated Attica, Cedarville Guelph, heat treated Delaware, Fall Creek, heat treated Fall Creek, Flint Ridge, Glacial, heat treated Glacial, Harrodsburg, Holland, Jeffersonville, heat treated Jeffersonville, Kenneth, Laurel, heat treated Laurel, Liston Creek, heat treated Liston Creek, Richland, Stanford, Wyandotte, Zaleski
Middle Archaic	Attica, Fall Creek, Glacial, heat treated Glacial, heat treated Laurel, Liston Creek, heat treated Liston Creek, heat treated Muldraugh, Wyandotte
Early Archaic	Attica, Brassfield, Dark Phase Holland, Delaware, Dongola, Fall Creek, heat treated Fall Creek, Flint Ridge, heat treated Flint Ridge, Fossiliferous, Glacial, Holland, heat treated Holland, heat treated Jeffersonville, Kenneth, Laurel, heat treated Laurel, Liston Creek, heat treated Liston Creek, Muldraugh, Stanford, Upper Mercer, Wyandotte, Zaleski
Late Paleoindian	Attica, Fall Creek, Flint Ridge, Laurel, heat treated Liston Creek
Paleoindian	Attica, Indian Creek

Historic

To complement and provide a more in depth picture of the potential historic archaeological resources within Hancock County, research with historic documents was undertaken. Historic research was derived primarily from county histories (Binford 1882, Richman 1916), immigrant letters (Vonnegut 1935), county atlases (Anonymous 1968, Griffing 1976) and the Hancock County Indiana Historic Sites and Structures Inventory (Anonymous 1983). From these sources, schoolhouses, mills, brickyards and other production sites were complied (Appendix C). Over 250 historic sites were recorded. Historic cemeteries were not investigated at a county level. A few of the cemeteries from Sugar Creek Township are discussed in the German Settlement. Information concerning when the historic structure was built, when it ceased operation, why it ceased operation, location and owners was collected. This information was then used to assist in the investigation of historic resources in the county.

In addition to the list of historic sites, an overview of the county history was reviewed. Table 11 provides information concerning the initial settlement of the county, the religious denomination of the early settlers and foundation of early towns.

Table 11. Township Information			
Township	1st Land Entry	Chruches	Towns
Blue River organized in 1828 revised 1831	1st cabin in 1818 by Andrew Evans 1st entry Aug. 10, 1821 by Harmon Wiarrum	6: 1 Baptist, 1 Christian, 1 Methodist Episcopal, 3 Friends	Westland 1st store 1824, Elijah Tyner at SE 1/4, S 35 on E. side of road at angle in road
Brandywine organized 1828 revised 1835	? 1819 or 1820	3: 1 Christian, 1 Methodist, 1 United Brethren	Carrolton - plat Feb 25, 1854
Brown organized 1833 revised until 1853	Prior Brown on July 3, 1830 E 1/2, NE 1/4 S 33 T 17N, R 8E	4: 1 Baptist, 1 Methodist Episcopal, 1 United Brethren, 1 Christian	Warrington - plat Oct. 6, 1834
Buck Creek organized 1831 revised until 1853	George Worthington January 18, 1822 E 1/2, NE 1/4, S 33 T 17N, R 8E	4: 2 United Brethren, 2 Methodist Epicopal	
Center organized 1831 revised until 1853	Platt Montgomery September 12, 1821 E 1/2, SE 1/4, S 9 T 15N, R 7E	6 in Township: 4 Methodist, 2 Baptist 6 in Greenfield: 1 Presbyterian, 1 Methodist Episcopal, 1 Catholic, 1 Christian, 1 African Methodist Episcopal	Greenfield - plat April 12, 1844 Maxwell - plat Aug. 20, 1881
Green organized 1822 revised 1833	William Shortridge May 26, 1829 NE 1/4, S 19 T 17N, R 7E	3: 2 Methodist Episcopal, 1 Christian	Eden - plat Aug. 21, 1835
Jackson organized 1831 revised until 1853	William Oldham November 20, 1824 NW 1/4, NW 1/4, S 23 T 16N, R 8E	7: 3 Methodist Episcopal, 1 Protestant Methodist, 1 Baptist, 1 Christian, 1 Friends	Charlottesville Cleveland
Sugar Creek organized 1828 revised 18311	George Worthington January 18, 1822 N 1/2, NE 1/4, NW 1/4, S 3, T 15N, R 6E	6: 2 Methodist Episcopal, 1 Christian, 3 German	Philadelphia - plat April 8, 1838 New Palestine - plat Oct. 1, 1838
Vernon organized 1836 revised until 1853	George Crim November 16, 1826 E 1/2, SW 1/2 S 29 T 17N, R 6E	7: 3 Methodist Episcopal, 1 Christian, 1 Catholic, 1 Baptist, 1 Dunkard	Fortville - plat Feb. 12, 1849 McCordsville - plat Sept. 11, 1863

More extensive research and site investigations are presented in the Historic Resources and German Settlements sections later in this report.

PEDESTRIAN SURVEY

Introduction

Approximately 787 acres of agricultural land were surveyed by pedestrian transects during this project. The survey sampled 600.3 acres of till plain, 44.6 acres of floodplain, 89.6 acres of outwash terrace, and 52.0 acres of outwash plain. The survey documented 161 new archaeological sites and recovered 702 prehistoric artifacts and 950 historic artifacts. The results were discussed by survey area.

Field Survey Methods

For this project, 1000 acres of pedestrian survey was proposed. It was anticipated that approximately 800 acres would be utilized to explore prehistoric settlement. Different landforms and environmental zones consisting of till plains, floodplains, outwash terraces and outwash plains would be sampled. Following historic research, 200 acres would be utilized to explore targeted historic resources. Areas were selected for survey using aerial maps and soils information and historic sources. The survey was constructed to sample different regions within the county, but with an emphasis on areas deemed threatened by urban expansion and 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 field school students. The investigations were authorized under DHPA approved plan #2006029. The survey was conducted between May 22, 2006 and April 18, 2007. 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 30 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 Axis^3 GPS or Magellen SportTrak handheld GPS using NAD 1983. Field notes were maintained by the author and the crew.

Laboratory Methods

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 D. Diagnostic point types were classified using Justice (1987). Metrical attributes and raw material identifications were recorded as appropriate (Appendix E). Lithic raw materials were identified by comparison with reference samples and published descriptions on file in the ARMS laboratory (Cantin 2005). 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 completed for each site identified during the project.

All materials generated by this project were accessioned under # 06.61. Artifacts were either curated at Ball State or returned to the landowner after documentation. When artifacts were returned to the landowners, all the artifacts were identified, analyzed, and photographed per DHPA guidelines. Appendix F lists the collections that were returned and those that were curated at Ball State.

Results

Survey Area 1

Survey Area 1 was located near the [redacted] (Figure 3). Residential development was occurring adjacent to this survey area. The property was surveyed on May 22nd, 2006. Ground surface visibility was approximately 95%. The field had been recently planted in corn that was approximately 5 cm tall. Approximately 26.4 acres were surveyed consisting of 14.9 acres of outwash terrace, 6.1 acres of till plain and 5.4 acres of floodplain. The area contained Ockley (OcA, OcB2), Crosby (CrA), Miami (MmB2, MpC3), Brookston (Br) and Eel (Ee) soils. Fourteen sites were encountered during the survey. The sites ranged in size from prehistoric isolated finds to lithic scatters 2129 m² (0.5 acres) and one historic site 223 m² in size. Components identified in the sites included Early Archaic, Late Archaic, unidentified Prehistoric and Historic.

Sites Locations Confidential

Not for Public Disclosure

Figure 3. A portion of the USGS 7.5' Greenfield, Indiana Quadrangle showing the location of Survey Area 1.

Artifacts

A total of 74 artifacts, 72 fire-cracked rocks and 5 bricks were encountered in Survey Area 1. Table 12 provides a list of the artifacts recovered by category. Artifacts are listed by individual site in Appendix G. Only a few of the artifacts recovered were diagnostic of a particular time frame.

Table 12.
Artifacts from Survey Area 1

Category	No.	Category	No.
Unmodified flakes	23	Charleston point	1
Edge Modified flakes	15	Other Chipped Stone	1
Cores	3	Anvil	1
Biface fragment	1	Coal	1
Endscraper	1	Container Glass	2
Point fragments	4	Flat Glass	4
Late Archaic point fragment	1	Stoneware	4
Palmer point	1	Whiteware	10

Three prehistoric artifacts were recovered from the Archaic period (Figure 4). A Palmer point was recovered from site 12-Ha-191 and manufactured from Fall Creek chert. Palmer points date to approximately 7500 to 6900 BC (Justice 1987:78). A Charleston Corner Notched point was found on site 12-Ha-192 and manufactured from Fall Creek chert. Charleston points date to approximately 7900 BC (Justice 1987:79). A Late Archaic point fragment was also recovered from site 12-Ha-192. It had been heat damaged and the raw material was unknown. The point should date between 3000 and 1000 BC.

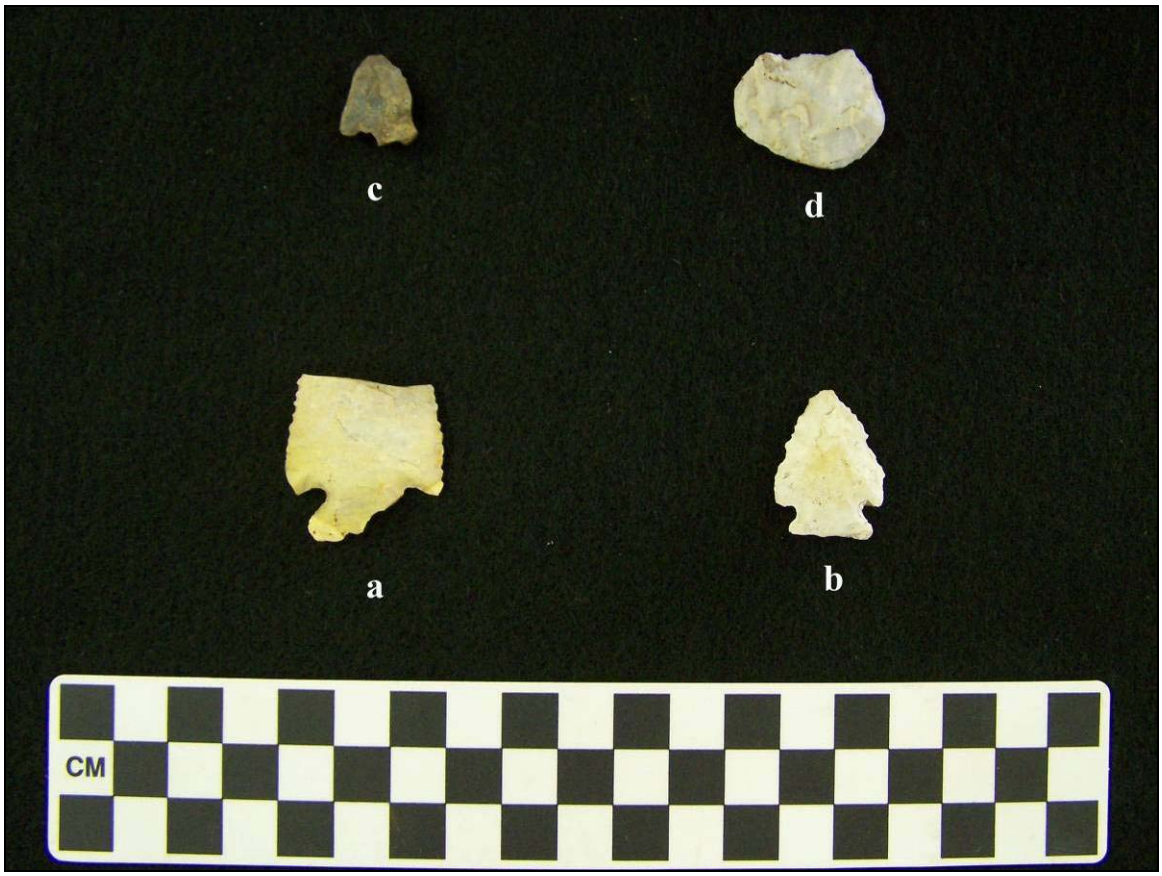

Figure 4. Diagnostic Prehistoric artifacts from Survey Area 1: a) Charleston point (12-Ha-192), b) Late Archaic point fragment (12-Ha-192), c) Palmer point, and d) endscarper (12-Ha-201).

While not diagnostic, an endscraper of Fall Creek chert was recovered from site 12-Ha-201 (Figure 4).

The historic artifacts, all recovered from site 12-Ha-203, included a few decorated ceramics (Figure 5). One fragment of whiteware had a hand painted floral design. This type of design was most popular between ca. 1840 and 1860 (Majewski and O'Brien 1987:159). One whiteware rim fragment had a flow blue design. Flow blue was popular between ca. 1820 and 1870 (ODOT 1991:178). Another whiteware rim fragment had a purple transferprint that was likely manufactured between ca. 1830 and 1860 (Lofstrom et al. 1982:14).

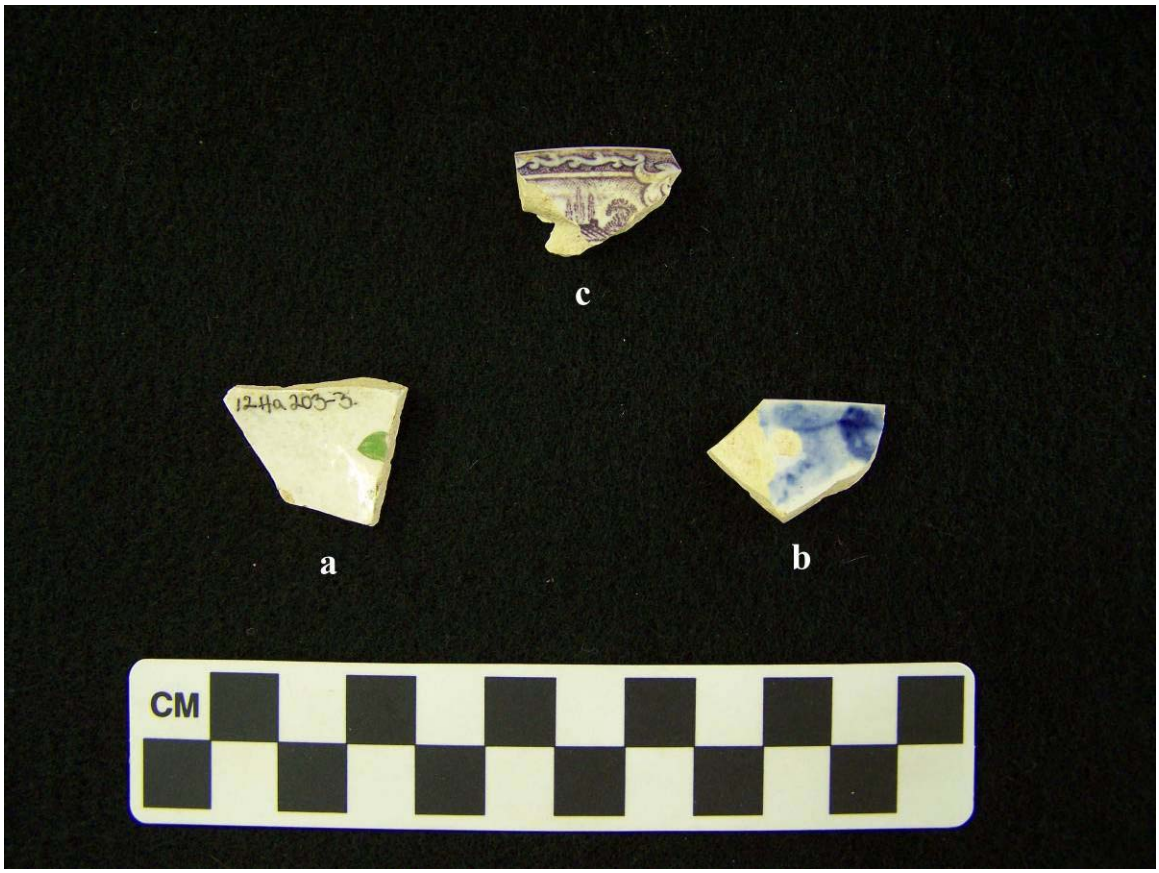

Figure 5. Diagnostic historic artifacts from Survey Area 1, Site 12-Ha- 203: a) whitware with hand painted floral design, b) whitweware with flow blue, and c) whiteware with purple transferprint.

Sites

Fourteen archaeological sites, 12-Ha-190 to 203, were recorded in Survey Area 1 (Figures 6 & 7). Summaries for the individual sites are contained in Appendix H. Eleven of the sites had unidentified prehistoric components (12-Ha-190, 193 to 202), one site had an Early Archaic component (12-Ha-191), one site had an Early Archaic and Late Archaic component (12-Ha-192) and one site had a Historic component (12-H-203). Five of the sites were isolated finds (12-Ha-194 to 197, 200), eight sites were lithic scatters (12-Ha-190 to 193, 198, 199, 201, 202) and one site was a historic scatter (12-Ha-203).

Sites Locations Confidential

Not for Public Disclosure

Figure 6. A portion of the USGS 7.5' Greenfield, Indiana Quadrangle showing the location of sites 12-Ha-190 to 203.

Sites Locations Confidential

Not for Public Disclosure

Figure 7. 2003 aerial of Survey Area 1 showing the location of sites 12-Ha-190 to 203.

The sites were found on all landforms present in the survey area. Six of the sites, five lithic scatters and one isolated find (12-Ha-190, 191, 198 to 201) were encountered in outwash terrace settings on Ockley soils. Four of the sites were found in the floodplain setting (12-Ha-194 to 197) on Eel soils and all were isolated finds. Two sites, both lithic scatters, (12-Ha-192 and 193) encompassed both floodplain and outwash terrace settings (Ockley and Eel soils). Two sites (12-Ha-202 and 203) were encountered in till plain settings. One site (12-Ha-202) was located on Crosby and Miami soils and the other site (12-Ha-203) was a historic scatter on Crosby soils. Prehistoric settlement within this survey area favored the outwash terrace and floodplain settings, though the floodplain sites were isolated finds.

Due to the low numbers of prehistoric artifacts and fire-cracked rocks recorded from each of the sites in Survey Area 1, none of the prehistoric sites were considered eligible for listing on the State or National Registers. The historic site, 12-Ha-203, contained architectural as well as kitchen remains. The ceramics recovered suggest possible occupation dates between 1820 and 1870. No historic structure is noted on the 1887 historic atlas of this area (Griffing 1976). Given the potential for a pioneer period occupation, site 12-H-203 was recommended for testing.

Density

Survey Area 1 consisted of approximately 5.4 acres of floodplain, 14.9 acres of outwash terrace and 6.1 acres of till plain. Within Survey Area 1, a density of one prehistoric site per 0.9 acres occurred within the floodplain, one prehistoric site per 1.9 acres occurred within the outwash terrace and one prehistoric site per 6.1 acres occurred with the till plain landform. An overall density of prehistoric sites within Survey Area 1 was one site per 2.0 acres.

Survey Area 2

Survey Area 2 is located in the west central portion of the county where residential development is growing rapidly. The survey area is in [redacted] (Figure 8). The area surveyed was bisected by [redacted] The area was surveyed on May 23rd and 24th, 2006. Ground surface visibility ranged between 80 and 95%. The field had been planted in corn that was approximately 10 cm tall. Approximately 104.6 acres were surveyed, all in the till plain zone. The area contained Crosby (CrA) and Brookston (Br) soils. Twenty-four sites were encountered during the survey. The sites ranged in size from prehistoric isolated finds to lithic scatters 1369 m² (0.34 acres) in size and historic scatters between 235 m² and 10858 m² (2.68 acres) in size. Components identified in the sites included Early Archaic, Middle Woodland, Late Woodland, unidentified Prehistoric and Historic.

Sites Locations Confidential

Not for Public Disclosure

Figure 8. A portion of the USGS 7.5' Cumberland, Indiana Quadrangle showing the location of Survey Area 2.

Artifacts

A total of 395 artifacts, 40 fire-cracked rocks and over 50 bricks and 16 pieces of concrete were encountered in Survey Area 2. Of the artifacts recovered 326 were historic, 52 were prehistoric and 17 were bone/shell pieces. Table 13 provides a list of artifacts recovered by category. Artifacts are listed by individual site in Appendix G. The temporally diagnostic artifacts are discussed below.

Table 13.
Artifacts from Survey Area 2

Category	No.	Category	No.
Unmodified flakes	26	Canning lid liner	1
Edge Modified flakes	12	Glass	2
Core	1	Glass marbles	2
Bipolar	1	Glass melted	2
Biface fragments	2	Field tile	18
Point fragments	2	Metal chain link	1
Triangular point	1	Metal handle	1
MW Expanding Stem point	1	Meta, harness buckle	1
Kanawha point	1	Metal hinge	1
Hardin Barbed point	1	Meta, spoon	1
Other chipped stone	3	Meta, wire/nail	2
Anvil/hammerstone	1	Plastic molded	8
Bone	1	Porcelain insulator	1
Bottle glass	13	Porcelain	4
Brick	2	Spark plug	1
Coal	30	Stoneware	11
Container glass	147	Whiteware	29
Flat glass	29	Mussel shell	16
Canning jar	17		

Four projectile points were identified by type (Figure 9). The points represent Early Archaic, Middle Woodland and Late Woodland periods. A Hardin Barbed point of Fall Creek chert was recovered at site 12-Ha-225. Hardin Barbed points date between 8000 and 5500 BC (Justice 1987:53). Hancock County is outside the documented distribution of Hardin Barbed points. A Kanawha point manufactured from Fall Creek chert was found at site 12-Ha-221. Kanawha points date between 6200 and 5800 BC (Justice 1987:95). A Middle Woodland Expanding Stem, Chesser point, manufacture from Flint Ridge chert was recovered from site 12-Ha-227. Chesser points date between AD 300 and 700 (Justice 1987:214). A Triangular point was recovered from site 12-Ha-224. The point was manufactured from Fall Creek. Triangular Cluster points date to the Late Woodland period, between AD 800 and 1300 (Justice 1987:227-229).

Figure 9. Diagnostic prehistoric artifacts from Survey Area 2: a) Hardin Barbed point (12-Ha-225), b) Kanawha point (12-Ha-221), c) Chesser point (12-Ha-227), and d) Triangular Cluster point (12-Ha-224).

Historic artifacts were recovered from five sites within Survey Area 2. Most of the artifacts were recovered from sites 12-Ha-206, 210 and 220. Decorated whiteware fragments provided an indication of occupation dates (Figure 10). One whiteware fragment from site 12-Ha-206 had a red decorative band that was popular in the early 20th century (Majewski and O'Brien 1987:160). Another whiteware fragment from the same site had a gilt band that was popular after 1880 (Majewski and O'Brien 1987:128). Also from site 12-Ha-206 was a whiteware fragment with a floral decalcomania pattern that was likely manufactured between 1890 and the present (ODOT 1991:178). From site 12-Ha-220 were earlier produced whitewares. A purple transferprint was manufactured between 1830 and 1860 (Lofstrom et al. 1982:14), a shell edge with flow blue decoration was manufactured between 1820 and 1860 (Majewski and O'Brien 1987:152) and another whiteware had a blue sponge decoration manufactured between 1840 and 1860 (ODOT 1991:178).

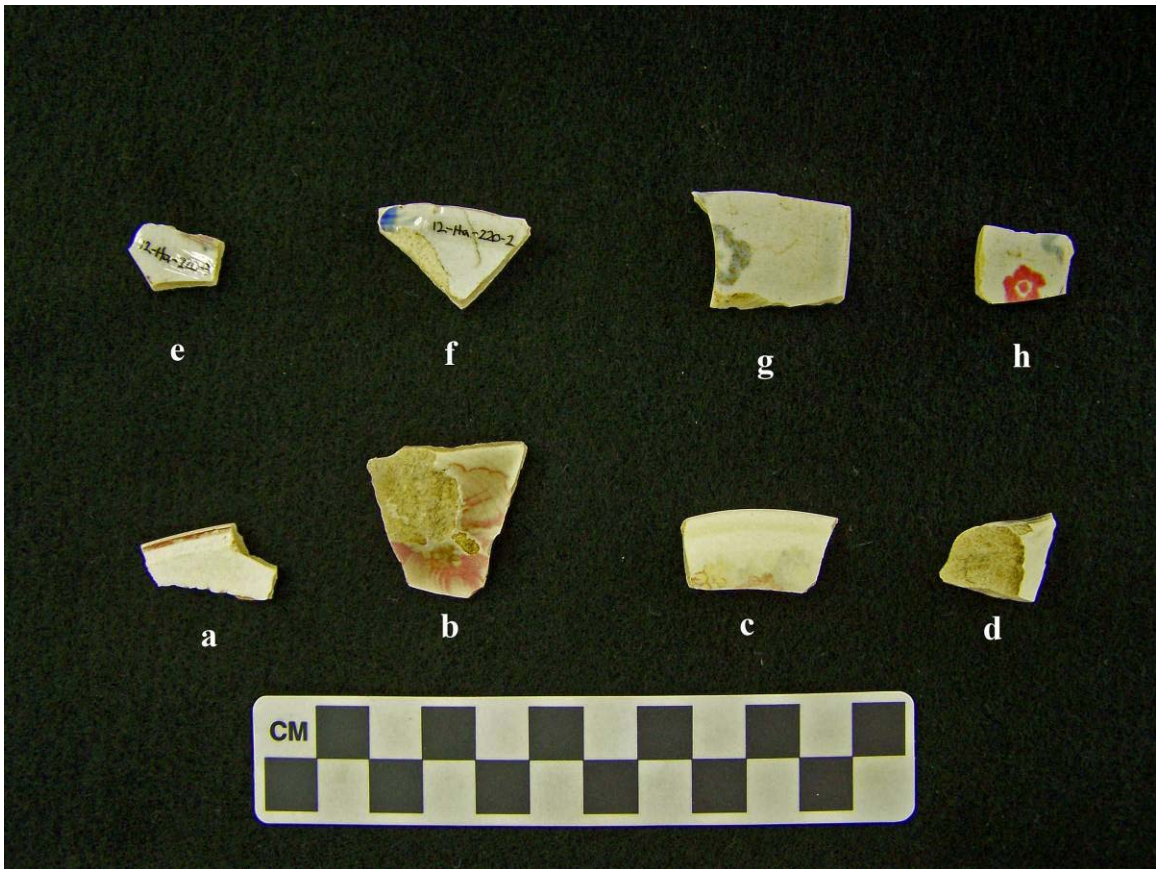

Figure 10. Diagnostic historic artifacts from Survey Area 2: a) whiteware with red band, b) & c) whiteware with floral decalcomania, d) whiteware with gilt band, e) whiteware with purple transferprint, f) whiteware with flow blue shell edge, g) & h) whiteware with sponge decoration. Bottom row are from site 12-Ha- 206 and top row are from site 12-Ha-220.

Glass colors were also examined for production dates. Dates for the glass artifacts begin ca. 1800 and some continue to be manufactured currently. From sites 12-Ha-206, 210 and 220, aqua glass was recovered that was likely manufactured between 1800 and 1910 (Fike 1984). From sites 12-Ha-206, 210 and 220, amethyst glass was recovered dating to ca. 1880 and 1925 (Newman 1970:74). Milk glass recovered from sites 12-Ha-206 and 210 and was produced between 1890 and 1960 (Fike 1984). Green glass was recovered from site 12-Ha-206 and was produced beginning in 1860 (Fike 1984). From sites 12-Ha-206, 210 and 220 clear glass was recovered that has open production dates beginning in 1875 (Fike 1984). Cobalt blue glass was manufactured beginning in 1890 (Fike 1984) and was recovered from site 12-Ha-206. From sites 12-Ha-206 and 210, amber glass was recovered that has open production dates beginning ca. 1860 (Fike 1984).

Sites

Twenty-four archaeological sites, 12-Ha-204 to 227, were recorded in Survey Area 2 (Figures 11 & 12). Summaries for the individual sites are contained in Appendix H. Seventeen of the sites had unidentified prehistoric components (12-Ha-204 to 208, 211 to 219 and 222, 223, and 226), two sites had Early Archaic components (12-Ha-221

and 225), one site had a Middle Woodland component (12-Ha-227), one site had a Late Woodland component (12-Ha-224) and five sites had historic components (12-Ha-206, 208, 209, 210 and 220).

Sites Locations Confidential

Not for Public Disclosure

Figure 11. A portion of the USGS 7.5' Cumberland, Indiana Quadrangle showing the location of sites 12-Ha-204 to 227.

Sites Locations Confidential

Not for Public Disclosure

Figure 12. 2003 aerial of Survey Area 2 showing the location of sites 12-Ha-204 to 227.

The majority of sites consisted of single artifact (isolated) finds. Fifteen sites (12-Ha-204, 207, 211, 212, 214 to 219, 222, and 224 to 227) were isolated prehistoric finds. Four of the sites (12-Ha-205, 213, 221 and 223) were prehistoric lithic scatters. Two

sites (12-Ha-206 and 208) were scatters of both prehistoric and historic artifacts. Two sites (12-H-210 and 220) were historic scatters of artifacts. One site (12-Ha-209) is an extant farmstead.

The survey area consisted of well drained nearly level Crosby soils and poorly drained depressional Brookston soils. Seventeen of the twenty-four sites were encountered on the Crosby soils (12-Ha-204, 205, 207, 208, 211 to 221, 224 to 226). Five the sites were found on a combination of Crosby and Brookston soils (12-Ha-206, 207, 209, 210, 223). Two sites were found only in Brookston soils and these sites were isolated finds from the prehistoric era (12-Ha-222 and 227). A pattern for occupation within Survey Area 2 favored the slightly higher elevations and somewhat better drained Crosby soils.

Due to the low numbers of prehistoric artifacts and fire-cracked rocks recorded from the sites in Survey Area 2, none of the prehistoric sites were considered eligible for listing on the State or National Registers. Site 12-Ha-208 contained nine prehistoric artifacts and only one historic artifact and was not considered eligible for listing on the State or National Registers. Site 12-Ha-210 was found along [redacted] and the artifacts appeared to occur on a higher elevation associated with dumping soil after dredging the ditch so the artifacts did not appear to have context and the site is not considered eligible for listing on the State or National Registers. Site 12-Ha-220 only contained eight artifacts and was located next to [redacted] The artifacts did date between 1800 and the present, but the site does not appear to be eligible for listing on the State or National Registers. Site 12-Ha-206 contained 317 artifacts and only one was of prehistoric origin. The remaining artifacts were historic ceramics, glass, metal and over 50 bricks and 16 pieces of concrete. The site is located primarily in poorly drained Brookston soils and located along [redacted]. While the historic artifacts may date as early as 1800, the site is believed to be a dumping area and not a structure. Therefore, site 12-Ha-206 is not considered eligible for listing on the State or National Registers. Site 12-Ha-209 is an extant farmstead, but was not explored during this survey. A structure is recorded at this location on the 1887 [redacted] Atlas (Griffing 1976). Further assessment of this site is recommended to document the extant structures and evaluate the potential for archaeological information.

Density

Survey Area 2 consisted of approximately 105 acres. All of the survey was in the till plain zone. Of the 24 sites identified, 21 had prehistoric components. The site density of prehistoric sites within Survey Area 2 was one site per 5.0 acres.

Survey Area 3

Survey Area 3 was located in the north central portion of the county [redacted] (Figure 13). The area surveyed is south of an existing

gravel pit that is currently under residential development. The survey area is on the eastern edge of an old sluiceway [redacted], also occurs in the survey area. The property was surveyed on May 24 and 25 , 2006. Ground surface visibility was between 90 and 95%. The field was planted in corn that was approximately 10 cm tall. Approximately 85.6 acres were surveyed consisting of 39.9 acres of till plain, 17.3 acres of outwash terrace, and 28.4 acres of outwash plain or sluiceway. The area contained Crosby (CrA), Miami (MmB2), Brookston (Br), Milford (Mr), Ockley (OcB2, OcC2), Westland (We), Rensselaer (Re), and Whitaker (Wh). Twenty-three sites were encountered during the survey. The sites ranged in size from prehistoric isolated finds to lithic scatters 4012 m² (1 acre) in size and small historic scatters 78 m² to a large historic site 12406 m² (3 acres) in size. Components identified in the sites included Early Archaic, Late Archaic, Middle Woodland, unidentified Prehistoric and Historic.

Sites Locations Confidential

Not for Public Disclosure

Figure 13. A portion of the USGS 7.5' Ingalls, Indiana Quadrangle showing the location of Survey Areas 3 and 10.

Artifacts

A total of 192 artifacts and 80 fire-cracked rocks were encountered in Survey Area 3. Table 14 provides a list of the artifacts recovered by category. Artifacts are listed by individual site in Appendix G. Diagnostic artifacts are discussed below.

Table 14.
Artifacts from Survey Area 3

Category	No.	Category	No.
Unmodified flakes	31	Bottle glass	10
Edge Modified flakes	14	Container glass	50
Core	3	Canning jar	3
Bipolar	2	Canning lid liner	3
Biface fragments	5	Flat glass	1
Endscraper	1	Glass insulator	1
Point fragments	6	Milk glass	1
Charleston Corner-Notched	1	Whiteware	7
Wabash Diagonal Notched	1	Stoneware	35
Unclassified Late Archaic point	2	Earthenware	1
Riverton	1	Ironstone	1
Karnak	1	Porcelain	1
Middle Woodland Expanding Stem	1	Porcelain doll leg	1
Other Chipped Stone	4	Brick	2
		Horseshoe	1
		Metal harrow tooth	1
		Plastic	1

Seven identifiable projectile points were recovered from Survey Area 3 (Figure 14). An Early Archaic Charleston Corner-Notched point was recovered from site 12-Ha-247. The point was manufactured from an unknown material and should date to ca. 7900 BC (Justice 1987:79). A Wabash Diagonal Notched point (Cochran 1981) also from the Early Archaic period was recovered from site 12-Ha-234. The point was manufactured from Attica chert and should date between 6000 and 7000 BC. Two unclassified Late Archaic points were recovered from sites 12-Ha-242 and 243. One was manufactured from Fall Creek and the other was from heat treated Fall Creek. A Riverton point of Fall Creek chert should date between 1600 and 1000 BC (Justice 1987:130), the Late Archaic period; the point was recovered from site 12-Ha-243. From site 12-Ha-233, a Late Archaic Karnak point of Fall Creek chert that dates between 3700 and 3000 BC (Justice 1987:134) was recovered. A Middle Woodland Expanding stem point was recovered from site 12-Ha-244. The point dates between ca. AD 200 and 600 (Justice 1987:208-214) and was manufactured from Flint Ridge chert.

Figure 14. Diagnostic prehistoric artifacts from Survey Area 3: a) Charleston point (12-Ha-247), b) Wabash Diagonal Notched point (12-Ha-234), c) Unclassified Late Archaic point (12-Ha-242), d) Unclassified Late Archaic point (12-Ha-243), e) Riverton point (12-Ha-243), f) Karnak point (12-Ha-233), g) Middle Woodland Expanding Stem point (12-Ha- 244) and h) endscraper (12-Ha-244).

While not diagnostic, an endscraper of unknown chert was recovered from site 12-Ha-244 (Figure 14).

Most of the historic artifacts were recovered from sites 12-Ha-229, 235 and 240. Only two whiteware fragments from site 12-Ha-229 were decorated (Figure 15). They were a black transferprint and was likely manufactured between 1830 and 1850 (Lofstrom et al. 1982:14). Dates for the glass artifacts begin ca. 1800 and some continue to be currently manufactured. From sites 12-Ha-229, 235 and 240, amethyst glass was recovered dating between ca. 1880 and 1925 (Newman 1970:74). From the same sites, aqua glass was recovered that was likely manufactured between 1800 and 1910 (Fike 1984) and clear glass was recovered that has open production dates beginning in 1875 (Fike 1984). Cobalt blue glass was manufactured beginning in 1860 and was recovered from site 12-Ha-240. From sites 12-Ha-229 and 235, amber glass was recovered that has open production dates beginning ca. 1860 (Fike 1984). Milk glass was recovered from sites 12-Ha-229 and 244 and was produced between 1890 and 1960 (Fike 1984).

Figure 15. Diagnostic historic artifacts from Survey Area 3, Site 12-Ha-229, whiteware with black transferprint.

Sites

Twenty-three archaeological sites, 12-Ha-228 to 250, were recorded in Survey Area 3 (Figures 16 & 17). Summaries for the individual sites are contained in Appendix H. Sixteen of the sites had unidentified prehistoric components (12-Ha-228 to 232, 235 to 239, 241, 243, 246 and 248 to 250), two sites had Early Archaic components (12-Ha-234 and 247), three sites had Late Archaic components (12-Ha-233, 234 and 242), one site had a Middle Woodland component (12-Ha-244) and four sites had Historic components (12-Ha-229, 235, 240 and 245). Eight of the sites were isolated finds (12-Ha-230 to 232, 236, 237, 246, 247 and 249), 11 sites were lithic scatters (12-Ha-228, 233, 234, 238, 239, 241 to 244, 248 and 250), two sites were scatters of historic and prehistoric artifacts (12-Ha-229 and 235), and two sites were historic scatters (12-Ha-240 and 245).

Sites Locations Confidential

Not for Public Disclosure

Figure 16. A portion of the USGS 7.5' Ingalls, Indiana Quadrangle showing the location of sites 12-Ha-228 to 250.

Sites Locations Confidential

Not for Public Disclosure

Figure 17. 2003 aerial of Survey Area 3 showing the location of sites 12-Ha-228 to 250.

The sites encountered were found on all landforms present in the survey area. Ten of the sites were encountered in till plain settings; six were found on Miami soils (12-Ha-230, 231, 243, 245 and 246), one was found on Crosby soils (12-Ha-247), one was found on Brookston soils (12-Ha-249) and two were found on Miami and Crosby

soils (12-Ha-244 and 248). Half of these sites were prehistoric isolated finds. Four of the sites were in outwash plain/sluiceway settings; three of the sites were found on Rensselaer soils (12-Ha-232, 236, 237) and one site was found on Rensselaer and Westland soils (12-Ha-240). Three of these sites were isolated finds. One site (12-Ha-228) was found in a till plain/sluiceway setting on Crosby and Rensselaer soils. Two of the sites were in outwash terrace settings and both were on Ockley soils (12-Ha-234 and 235). Three sites were encountered in till plain/outwash terrace settings on Miami and Ockley soils (12-Ha-229, 241 and 242). Three sites were encountered in outwash terrace/outwash plain settings; two were found on Ockley and Rensselaer (12-Ha-238 and 239) and one was found on Ockley and Westland (12-Ha-233). The majority of sites were located on well drained soils. The isolated finds were limited to poorly drained soils or till plain settings. The Miami and/or Ockley soils were the preferred location for prehistoric lithic scatters.

Due to the low numbers of prehistoric artifacts and fire-cracked rocks recorded from the sites in Survey Area 3, none of the prehistoric sites were considered eligible for listing on the State or National Registers. Sites 12-Ha-235 and 240 contained several artifacts, but the sites appear to more likely represent dumping episodes. Therefore, the sites do not appear to be eligible for listing on the State or National Registers. Site 12-Ha-229 surrounds an extant farmstead, but the farm lot was not explored during this survey. A structure is recorded at this location [redacted] Further assessment of this site is recommended to document the extant structures and evaluate the potential for archaeological information.

Density

Survey Area 3 consisted of approximately 39.9 acres of till plain, 17.3 acres of outwash terrace and 28.4 acres of outwash plain/sluiceway. Within Survey Area 3, a density of one prehistoric site per 3.1 acres occurred within the till plain, one prehistoric site per 2.2 acres occurred within the outwash terrace and one prehistoric site per 4.1 acres occurred within the outwash plain/sluiceway landform. An overall density of prehistoric sites within Survey Area 3 was one site per 4.1 acres.

Survey Area 4

Survey Area 4 was located in the northwest portion of Hancock County in [redacted] Figure 18). The area surveyed was in one of fastest growing regions of Hancock County near the towns of McCordsville and Fortville. The area was surveyed on May 25th, 2006. Ground surface visibility was between 90 and 100% with some old corn chaff and corn approximately 15 cm tall. Approximately 60.2 acres consisting of 56.9 acres of till plain and 3.3 acres of outwash plain were surveyed. Survey Area 4 contained Crosby (CrA), Brookston (Br), Kokomo (Ko) and Whitaker (Wh) soils. Five sites were encountered in the area surveyed. The sites ranged from prehistoric isolated finds to lithic scatters 10,746 m² (2.7 acres) in size. Unidentified Prehistoric and Late Archaic components were identified in this survey area.

Sites Locations Confidential

Not for Public Disclosure

Figure 18. A portion of the USGS 7.5' McCordsville, Indiana Quadrangle showing the location of Survey Area 4.

Artifacts

A total of 27 prehistoric artifacts and 26 fire-cracked rocks were encountered in Survey Area 4. Table 15 provides a list of artifacts by category. Artifacts are listed by individual site in Appendix G. Only one diagnostic artifact was recovered and is discussed below.

Table 15.
Artifacts from Survey Area 4

Category	No.	Category	No.
Unmodified flakes	15	Point fragment	2
Edge Modified flakes	5	Matanzas point	1
Cores	2	Adze	1
Biface	1		

Only one projectile point was recovered during the survey. A Matanzas point of Fall Creek chert was recovered from site 12-Ha-255 (Figure 19). The point should date between 3700 and 2000 BC (Justice 1987:119). Site 12-Ha-255 was an isolated find.

Figure 19. Diagnostic prehistoric artifacts from Survey Area 4: a) Matanzas point (12-Ha-255) and b) adze (12-Ha-253).

While not diagnostic of a particular period, a ground stone adze was recovered from site 12-Ha-253 (Figure 19). This site was also an isolated find. The adze is 10.75 m in length, 57.00 mm at the maximum width and 18.75 mm at the maximum thickness.

Sites

Five archaeological sites, 12-Ha-251 to 255, were recorded in Survey Area 4 (Figures 20 & 21). Summaries for the individual sites are contained in Appendix H. All of the sites were from the prehistoric era. Four of the sites (12-Ha-251 to 254) had unidentified prehistoric components and one site had a Late Archaic component (12-Ha-255).

Sites Locations Confidential

Not for Public Disclosure

Figure 20. A portion of the USGS 7.5' McCordsville, Indiana Quadrangle showing the location of sites 12-Ha-251 to 255.

Sites Locations Confidential

Not for Public Disclosure

Figure 21. 2003 aerial showing the location of sites 12-Ha-251 to 255.

The sites were found on all landforms present in the survey area. Three sites (12-Ha-253 to 255) were found in till plain settings. Each of these sites were isolated finds and each one was found on a different soil; one on Crosby, one on Brookston and one on Kokomo. Two sites (12-Ha-251 and 252) were encountered in both till plain and

outwash plain setting. These sites were larger (2+ acres) lithic scatters. One site was found on Crosby, Brookston and Whitaker soils and one was found on Crosby and Whitaker soils. Most of the sites were associated with the somewhat better drained Crosby soils, but the larger sites were associated with the Whitaker soils

Due to the low numbers of artifacts and fire-cracked rocks recorded from each of sites in the survey area, none of the sites were considered eligible for listing on the State or National Registers.

Density

Survey Area 4 consisted of approximately 56.9 acres of till plain and 3.3 acres of outwash plain. A density of one prehistoric site per 11.4 acres occurred within the till plain setting and one prehistoric site per 1.7 acres occurred within the outwash plain setting. The overall site density of prehistoric sites within Survey Area 4 was one site per 12.0 acres. The low site density in the till plain and within the survey area may be explained by the large proportion (26. 4 acres) of very poorly drained Brookston soils.

Survey Area 5

Survey Area 5 was located near the center of the county in [redacted] igure 22). [redacted] The property was surveyed on November 11, 20006. Ground surface visibility was between 85 and 95%. The field had been disked and weathered and some corn and bean debris were present. Approximately 69.6 acres were surveyed and all of the area was in the till plain setting. The area contained Crosby (CrA), Brookston (Br) and Miami (MmB2) soils. Only four sites were encountered during the survey. Three of the sites were isolated finds and one was a lithic scatter 158 m² in size. Only unidentified Prehistoric components were identified.

Sites Locations Confidential

Not for Public Disclosure

Figure 22. A portion of the USGS 7.5' Greenfield, Indiana Quadrangle showing the location of Survey Areas 5 and 6.

Artifacts

Seven artifacts and one fire-cracked rock were encountered in Survey Area 5. Table 16 provides a list of the artifacts recovered by category. Artifacts are listed by individual site in Appendix G. None of the artifacts were diagnostic of a particular time frame.

Table 16.
Artifacts from Survey Area 5

Category	No.	Category	No.
Unmodified flakes	1	Biface, Stage 2	2
Cores	3	Anvil/muller	1

Sites

Four archaeological sites, 12-Ha-256 to 259, were recorded in Survey Area 5 (Figures 23 & 24). Summaries for the individual sites are contained in Appendix H. All of the sites had unidentified prehistoric components. Three of the sites (12-Ha-256 to 258) were isolated finds and one site (12-Ha-259) was a small lithic scatter.

Sites Locations Confidential

Not for Public Disclosure

Figure 23. A portion of the USGS 7.5' Greenfield, Indiana Quadrangle showing the location of sites 12-Ha 256 to 259 and 260 to 270.

Sites Locations Confidential

Not for Public Disclosure

Figure 24. 2003 aerial showing the location of sites 12-Ha-256 to 259.

The sites were all located on Crosby (CrA) soils. No sites were encountered in the Miami (MmB2) or Brookston (Br) soils. The lack of archaeological sites on Miami soils was unusual compared to other survey areas. Miami soils are better drained and typically higher in elevation than the Crosby soils.

Due to the low number of artifacts and fire-cracked rocks recorded in Survey Area 5, none of the sites were considered eligible for listing on the State or National Registers.

Density

Survey Area 5 consisted of approximately 69.6 acres. All of the survey was in the till plain zone. The site density of prehistoric sites within Survey Area 2 was one site per 17.4 acres. Almost 40% of the survey area contained the very poorly drained Brookston soils and may have contributed to the very low site density.

Survey Area 6

Survey Area 6 was located to the southeast of Survey Area 5 in the central part of the county in [redacted] (Figure 22). [redacted]. The property was surveyed on November 28 and 29 , 2006. Ground surface visibility was between 85 and 90% visibility. The field had been disked and weathered with some bean debris present. Approximately 28.4 acres were surveyed consisting of 11.5 acres of outwash terrace, 7.2 acres of till plain, 5.0 acres of outwash plain and 4.7 acres of floodplain. The area contained Ockley (OcA, OcB2, OkC2), Miami (MmB2, MpC3, MpD3), Westland (We), Eel (Ee) and Sloan (So) soils. Eleven sites were encountered by the survey. The sites ranged in size from prehistoric isolated finds to lithic scatters 3202 m² in size. Components identified in the sites included Late Archaic and unidentified Prehistoric.

Artifacts

A total of 52 artifacts, and over 164 fire-cracked rocks were encountered in Survey Area 6. Table 17 provides a list of the artifacts recovered by category. Artifacts are listed by individual site in Appendix G. Only one diagnostic artifact was recovered and is discussed below.

Table 17.
Artifacts from Survey Area 6

Category	No.	Category	No.
Unmodified flakes	29	Bipolar	1
Edge Modified flakes	9	Point fragment	1
Cores	8	LA Barbed point	1
Bifaces	3		

A Late Archaic Barbed cluster point was recovered from site 12-Ha-261 (Figure 25). The point was manufactured from Fall Creek chert. The point should date between 1500 and 500 BC (Justice 1987:179-183).

Figure 25. Diagnostic prehistoric artifact from Survey Area 6, Site 12-Ha- 261, a Late Archaic Barbed Cluster point.

Sites

Eleven archaeological sites, 12-Ha-260 to 270, were recorded in Survey Area 6 (Figures 23 & 26). Summaries for the individual sites are contained in Appendix H. Ten of the sites had unidentified Prehistoric components (12-Ha- 260, 262 to 270) and one site had a Late Archaic component (12-Ha-261). Two sites were isolated finds (12-Ha-265 and 267) and nine were lithic scatters (12-Ha-260 to 264, 266, 268 to 270).

Sites Locations Confidential

Not for Public Disclosure

Figure 26. 2003 aerial showing the location of sites 12-Ha-260 to 270.

Sites were encountered on all landforms present in the survey area, but outwash terraces were favored. Seven of the sites (12-Ha-261, 263, 264, 267, 268, 270) were encountered on outwash terrace settings (Ockley soils), only one of these sites was an isolated find. One site (12-Ha-262) was encountered on an outwash terrace (Ockley

soils) and outwash plain (Westland soils) setting. One site (12-H-260) was found on an outwash terrace and floodplain setting (Ockley and Eel soils). One site (12-Ha-268) was found in a till plain setting (Miami soils). One site (12-Ha-265) was found in an outwash plain setting (Westland soils) and was an isolated find.

The majority of sites contained fewer than 10 artifacts and a few fire-cracked rocks. Due to the low numbers of artifacts, fire-cracked rocks and in several cases eroded or severely eroded soils, sites 12-Ha-260, 262 to 270 were not considerable eligible for listing on the State or National Registers. Site 12-Ha-261 consisted of nearly 20 artifacts and over 100 fire-cracked rocks and was located on a terrace adjacent to the Sugar Creek floodplain. Given the potential for intact sub-plow zone deposits, site 12-Ha-261 is considered potentially eligible for listing on the State or National Registers and testing is recommended.

Density

Survey Area 6 consisted of approximately 11.5 acres of outwash terrace, 7.2 acre of till plain, 5.0 acres of outwash plain and 4.7 acres of floodplain. Within this area, a density of one prehistoric site per 1.3 acres within the outwash terrace setting, one prehistoric site per 7.2 acres within the till plain setting, one prehistoric site per 5.0 acres within the outwash plain setting and one prehistoric site per 4.7 acres within the floodplain setting. An overall density of one prehistoric site per 2.6 acres occurred within Survey Area 6.

Survey Area 7

Survey Area 7 was located in the north central portion of the county in [redacted] Figure 27). [redacted]. No development was noted near the survey area. The property was surveyed on November 29th, 2006, December 6th, 2006 and March 12th, 2007. Ground surface visibility ranged between 10 and 60%, but averaged 45% in tracts without harvest debris. The field was in no-till and soybean and corn debris were a detriment to visibility. Approximately 126.7 acres were surveyed consisting of 125 acres of till plain and 1.7 acres of outwash plain. The area contained Crosby (CrA), Miami (MmA, MmB2, MpC3), Brookston (Br) and Martinsville (MaA) soils. Twenty-two archaeological sites were encountered during the survey. The sites ranged from isolated prehistoric finds to lithic scatters 3199 m² (0.8 acres) and small historic scatters 176m² to 12,186 m² (3.0 acres). Components identified from the sites included Middle Archaic, Late Woodland, unidentified Prehistoric and Historic.

Sites Locations Confidential

Not for Public Disclosure

Figure 27. A portion of the USGS 7.5' Pendleton, Indiana Quadrangle showing the location of Survey Area 7.

Artifacts

A total of 175 artifacts, 40 fire-cracked rocks and 23 bricks were encountered in Survey Area 7. Forty-eight of the artifacts were associated with prehistoric components and 127 were historic. Table 18 provides a list of the artifacts recovered by category. Artifacts are listed by individual site in Appendix G. The diagnostic artifacts are discussed below.

Table 18.
Artifacts from Survey Area 7

Category	No.	Category	No.
Unmodified flakes	25	Glass button	1
Edge modified flakes	9	Glass insulator	1
Cores	2	Milk glass	1
Bipolar	2	Melted glass	1
Stage 2 biface	1	Canning lid liner	2
Stage 3 biface	1	Whiteware	24
Point fragment	1	Stoneware	42
Raddatz point	1	Porcelain	1
Triangular point	1	Horseshoe	1
Endscraper	1	Metal handle	1
Graver	1	Metal hinge plate	1
Anvil	1	Metal hoe	1
Celt/adze perform	1	Metal cap – wheel	1
Other chipped stone	1	Nails, cut	2
Coal	1	Cast iron	1
Roofing slate	2	Aluminum	2
Container glass	26	Unidentified metal	1
Flat glass	10		

Two points were recovered (Figure 28). A Raddatz point was recovered from site 12-Ha-275. The point was manufactured from Fall Creek chert. Raddatz points date between 6000 and 3000 BC (Justice 1987:68). A Triangular point of Fall Creek chert was recovered from site 12-Ha-285. Triangular Cluster points date between AD 800 and 1300 (Justice 1987:227-229). While not diagnostic, an endscraper of Fall Creek chert was recovered from site 12-Ha-281 (Figure 28).

Figure 28. Diagnostic artifacts from Survey Area 7: a) Raddatz point (12-Ha-275), b) Triangular Cluster point (12-Ha-285), c) endscraper (12-Ha- 281), and d) whiteware with flow blue transferprint.

Of the 113 historic artifacts, 105 were recovered from site 12-Ha-280. A variety of historic artifacts were recovered from this site including ceramics, glass, metal and bricks. However, only one whiteware fragment was decorated. The rim fragment was decorated with a flow blue band (Figure 28). This type of decoration should date between 1820 and 1870 (ODOT 1991:178). Approximate date ranges for site 12-Ha-280 and sites 12-Ha-272, 274 and 277 were obtained from glass colors. From sites 12-Ha-272, amethyst glass was recovered dating to between ca. 1880 and 1925 (Newman 1970:74). Aqua glass recovered from site 12-H a-280 was likely manufactured between 1800 and 1910 (Fike 1984). Clear glass from sites 12-Ha-274 and 277 has open production dates beginning in 1875 (Fike 1984). Milk glass was recovered from sites 12-Ha-272 and 280 was produced between 1890 and 1960 (Fike 1984).

Sites

Twenty-two archaeological sites, 12-Ha-271 to 292, were recorded in Survey Area 7 (Figures 29 & 30). Summaries for the individual sites are contained in Appendix H. Sixteen of the sites had unidentified prehistoric components (12-Ha-271, 273, 274, 276, 278, 279, 281 to 284 and 286 to 291), one site had a Late Archaic component (12-Ha-275), one site had a Late Woodland component (12-Ha-285) and five sites (12-Ha272, 274, 276, 280, 292) had Historic components. Ten of the sites were isolated finds (12-Ha-271, , 275, 276, 278, 281 to 285 and 291), six of the sites were lithic scatters (12-

Ha-273, 286 to 290), three of the sites were historic scatters (12-Ha- 272, 277 and 280), one site was a scatter of both prehistoric and historic artifacts (12-Ha-274) and one site was a mill race (12-Ha-292).

Sites Locations Confidential

Not for Public Disclosure

Figure 29. A portion of the USGS 7.5' Pendleton, Indiana Quadrangle showing the location of sites 12-Ha-271 to 291.

Sites Locations Confidential

Not for Public Disclosure

Figure 30. 2003 aerial showing the location of sites 12-Ha-271 to 291.

Survey Area 7 was almost entirely contained in the till plain setting. All of the sites encountered were in the till plain. The mill race, site 12-Ha-292, was found within the till plain and floodplain setting. The floodplain was not systematically surveyed due to poor visibility and not included in total acres surveyed. Approximately 64 acres were

Miami soils, 40 were Crobsy and 20 were Brookston. Most of the sites were associated with Miami soils with only five sites located on non-Miami soils (Crosby or Crosby-Brookston). Prehistoric and Historic settlement favored the Miami soils.

Due to the low number of artifacts and fire-cracked rocks recorded from the sites within Survey Area 7, none of the prehistoric sites were considered eligible for listing on the State or National Registers. Sites 12-Ha-272, 274, and 277 had historic components, but based on the narrow range of materials and low numbers of artifacts and bricks these sites were not considered eligible for listing on the State or National Registers. Site 12-Ha-280 was a large scatter of historic materials dating between 1820 through 1960. Conversations with the current landowner indicated that this site was the original location of the house that now sits along [redacted]. The house was built in 1873 and in 1878 a double murder occurred within the house (see Binford 1882:219-222). The property was later sold and the house was moved ca. 1916 to its present location. The 1887 Atlas of [redacted] does show a structure on [redacted] property near site 12-Ha-280 (Griffing 1976:13). An access drive to this structure passes very close to site 12-Ha-272. Given the short duration of occupation, site 12-Ha-280 may provide unique information on historic settlement of Hancock County. Site 12-Ha-280 has the potential to be eligible for listing on the State or National Registers and is recommended for testing. Site 12-Ha-292 is a historic mill race (Figure 30). This site is located in a wooded floodplain that was not systematically surveyed. The race is believed to be associated with a mill reported to be [redacted] grist and saw mill located [redacted] east of Eden (Binford 1882:212). This mill was erected in 1836. Another mill was located [redacted] east of Eden on [redacted] farm (Binford 1882:212), but it was reported to be a steam saw-mill and would not have utilized a race. The entire extent of the race was not explored since property boundaries were unclear. The location of the mill was not ascertained. Further exploration of site 12-Ha-292 to determine the full extent of the race and possible location of the mill was recommended.

Density

Survey Area 7 consisted of approximately 125 acres of till plain and 1.7 acres of outwash plain. A density of one prehistoric site per 6.9 acres occurred within the till plain. No sites were encountered in the outwash terrace. An overall site density for the entire survey area did not change much from the till plain density. A density of one prehistoric site per 7.0 acres was found for Survey Area 7.

Survey Area 8

Survey Area 8 was located in the southeastern portion of the county in [redacted] (Figure 31). The area surveyed is located at the western edge of the [redacted] is at the eastern boundary of the survey area. A gravel pit is to the southwest of the survey area [redacted]. The property was surveyed on January 10th, 2007. Ground surface visibility ranged between 0 and 55%, but

averaged 40% in rows clear of bean chaff. The field was no till beans with some corn stubble. Approximately 26.0 acres were surveyed consisting of 21.4 acres of till plain and 4.6 acres of floodplain. The area contained Miami (MmA, MmB2, MpC3, MpD3), Genesee (Ge), Sloan (So) and Shoals (Sh) soils. Eight sites were encountered during the survey. The sites ranged in size from prehistoric isolated finds to lithic scatters 2236 m² in size and one historic site that extended outside the area surveyed. Components included unidentified Prehistoric and Historic.

Sites Locations Confidential

Not for Public Disclosure

Figure 31. A portion of the USGS 7.5' Morristown, Indiana Quadrangle showing the location of Survey Areas 8 and 9.

Artifacts

A total of 46 artifacts and 17 fire-cracked rocks were found in Survey Area 8. Thirty-nine of the artifacts were prehistoric in age and seven were historic. Table 19 provides a list of the artifacts recovered by category. Artifacts are listed by individual site in Appendix G. No diagnostic artifacts were recovered, but glass colors for site 12-Ha-300 were examined for manufacture dates. Amethyst glass was produced between ca. 1880 and 1925 (Newman 1970:74). Amber glass was produced beginning ca. 1860 (Fike 1984). Milk glass was produced between 1890 and 1960 (Fike 1984). While not diagnostic, an endscraper of Fall Creek chert was recovered from site 12-Ha-296 (Figure 32).

Figure 32. Endscraper from site 12-Ha-296.

Table 19.
Artifacts from Survey Area 8

Category	No.	Category	No.
Unmodified flakes	22	Graver	1
Edge Modified flakes	10	Endscraper	1
Block flake	1	Container glass	4
Bipolar	1	Canning lid liner	2
Bifaces	3	Whiteware	1

Sites

Eight sites, 12-Ha-293 to 300, were encountered in Survey Area 8 (Figures 33 & 34). Summaries for the individual sites are contained in Appendix H. Seven of the sites had unidentified Prehistoric components (12-Ha-293 to 299) and one site had a historic component (12-Ha-300). Only one site (12-Ha-298) was an isolated prehistoric find. The remaining sites were lithic or historic scatters.

Sites Locations Confidential

Not for Public Disclosure

Figure 33. A portion of the USGS 7.5' Morristown, Indiana Quadrangle showing the location of sites 12-Ha- 293 to 300 and 301 to 306.

Sites Locations Confidential

Not for Public Disclosure

Figure 34. 2003 aerial showing the location of sites 12-Ha-293 to 300.

All of the sites were found in the till plain setting within the survey area. All of the sites also occurred on the Miami soils. No sites were encountered in the floodplain setting.

Due to the low numbers of artifacts and fire-cracked rocks and the eroded or severely eroded soils that occurred at most sites, none of the prehistoric sites were considered eligible for listing on the State or National Registers. The historic site, 12-Ha-300, was located at the edge of the present house/farm lot. It is likely that this site extends to cover the farm lot, but it was not explored during this project. The artifacts recovered suggest a late 19th to early 20th century occupation. Further assessment of this site is recommended to determine its nature and extent.

Density

Survey Area 8 consisted of approximately 21.4 acres of till plain and 4.6 acres of floodplain. Within this survey area all of the sites were encountered in the till plain setting. The site density of prehistoric sites within Survey Area 8 was one site per 3.1 acres in the till plain. An overall density of one prehistoric site per 3.7 acres was recorded within this survey area.

Survey Area 9

Survey Area 9 is located adjacent to Survey Area [redacted]. The topography of the two survey areas is somewhat different and were, therefore, discussed separately. Survey Area 9 was located [redacted] (Figure 31). The area surveyed is located near the western edge of the Blue River valley. A gravel pit is to the south of the survey area across [redacted] The property was surveyed on January 10th, 2007. Ground surface visibility ranged between 0 and 60%, but averaged 40% in rows clear of bean chaff. The field was no till beans with some corn stubble. Approximately 25.8 acres were surveyed consisting of 24 acres of till plain and 1.8 acres of floodplain. The area contained Miami (MmB2, MpC3, MpD3), and Genesee soils. Eight sites were encountered during the survey. The sites ranged in size from prehistoric isolated finds to small lithic scatters 65 m² in size and one historic site, a farmstead, that extended outside the area surveyed but was approximately 6298 m² (1.6 acres). Components included Late Archaic, unidentified Prehistoric and Historic.

Artifacts

A total of 13 artifacts and one fire-cracked rocks were encountered in Survey Area 9. Table 20 provides a list of artifacts recovered by category. Artifacts are listed by individual site in Appendix G. The diagnostic artifacts are discussed below.

Table 20.
Artifacts from Survey Area 9

Category	No.	Category	No.
Unmodified flakes	5	Canning glass lid liner	2
Edge Modified flakes	1	Stoneware	1
Late Archaic point	1	Whiteware	1
Container glass	1	Coal	1

An Unclassified Late Archaic point fragment was recovered from site 12-Ha-301 (Figure 35). The point was manufactured from heat treated Fall Creek chert. The point dates between 3000 and 1000 BC.

Figure 35. Diagnostic artifacts from Survey Area 9: a) Unclassified Late Archaic point fragment (12-Ha-301) and b) whiteware with green wicker tranferprint (12-Ha-306).

A few historic artifacts were recovered from site 12-H-306. The majority of the site is an extant but abandoned farm complex and was not surveyed at this time. A whiteware rim fragment was decorated with a green wicker transferprint (Figure 35). This sherd was probably a revival transferprint dating to the late 19th or early 20th century. Aqua container glass and milk glass canning lid liners were also recovered. The aqua glass likely dates between 1800 and 1910 and the milk glass should date between 1890 and 1960 (Fike 1984).

Sites

Six archaeological sites, 12-Ha-301 to 306, were recorded in survey Area 9 (Figures 33 & 36). Summaries for the individual sites are contained in Appendix H. Four of the sites had unidentified prehistoric components (12-Ha-302 to 305), one site

(12-Ha-301) had a Late Archaic component and one site had a Historic component (12-Ha-306). Four of the sites were isolated finds (12-Ha-302 to 305), one site was a lithic scatter (12-Ha-301) and one site was a historic scatter/farmstead (12-Ha-306).

Sites Locations Confidential

Not for Public Disclosure

Figure 36. 2003 aerial showing the location of sites 12-Ha-301 to 306.

All of the sites were found in the till plain setting within the survey area and were located on Miami soils. No sites were encountered in the floodplain setting on Genesse soils.

Due to the low numbers of artifacts and fire-cracked rocks and the eroded or severely eroded soils that occurred at most sites, none of the prehistoric sites were considered eligible for listing on the State or National Registers. The historic site,12-Ha-306, was an extant but currently abandoned farmstead. The farm lot was not surveyed due to grass cover. The house within this site is listed in the Hancock County Indiana Sites and Structures Inventory [redacted] (Anonymous 1983:45). The house was listed as "Notable" and Carpenter-Builder style. The house was built in 1879, but the current property owner stated that a log house was first built on the property. The few artifacts recovered fit a late 19th century occupation. Further assessment of site 12-Ha-306 is recommended to determine its nature and extent.

Density

Survey Area 9 consisted of approximately 24 acres of till plain and 1.8 acres of floodplain. Within this survey area, all of the sites were encountered in the till plain setting. The site density of prehistoric sites within Survey Area 9 was one site per 4.8 acres in the till plain. An overall density of one prehistoric site per 5.2 acres was found within this survey area.

Survey Area 10

Survey Area 10 was located in the north central portion of the county adjacent to Survey Area [redacted]. The topography of the survey areas is somewhat different so they were discussed separately. Survey Area 10 in [redacted] (Figure13). The area surveyed is south of an existing gravel pit that is currently under residential development [redacted] The survey area is on the western edge of an old sluiceway that has a [redacted] The property was surveyed on March 12 , 2007. Ground surface visibility was approximately 90%. The field had been disked in the fall and some corn and bean debris were evident on the surface. Approximately 52.4 acres were surveyed consisting of 21.8 acres of till plain, 17.8 acres of outwash plain or sluiceway, and 12.8 acres of outwash terrace. The area contained Crosby (CrA), Miami (MmB2), Brookston (Br), Martinsville(Mr), Westland (We), Renssalaer (Re), Whitaker (Wh) and Ockley (OcA,OcB2) soils. Nine sites were encountered during the survey. The sites ranged in size from prehistoric isolated finds to lithic scatters 1855 m² (0.5 acre) in size and mixed prehistoric and historic scatters 1767 m² to 4862 m² (1.2 acres) in size. Components identified in the sites included Late Archaic, unidentified Prehistoric and Historic.

Artifacts

A total of 251 artifacts, 23 fire-cracked rocks and 24 bricks were encountered in Survey Area 10. Table 21 provides a list of the artifacts recovered by category. Artifacts are listed by individual site in Appendix G. The diagnostic artifacts are discussed below.

Table 21.
Artifacts from Survey Area 10

Category	No.	Category	No.
Unmodified flakes	51	Whiteware	51
Edge modified flakes	11	Pearlware	1
Cores	5	Porcelain	1
Bipolar	2	Annular ware	2
Stage 2 bifaces	2	Stoneware	41
Point fragments	2	Yelloware	1
Late Archaic point fragment	1	Harness ring	1
Other chipped stone	1	Square nut	1
Hammerstone/muller	1	Lock washer, brass	1
Bannerstone	1	Metal strip	1
Container glass	53	Farm machinery	1
Bottle glass	2	Metal, unidentified	1
Flat glass	8	Coal	3
Canning lid liner	2	Plastic	1
Melted glass	2	Rubber	1

The diagnostic prehistoric material dates to the Archaic period (Figure 37). A Late Archaic point fragment was recovered from site 12-Ha-310. The point was manufactured from Jeffersonville chert. The point should date between 3000 and 1000 BC. A banded slate Pick bannerstone was recovered from site 12-Ha-307. The bannerstone is 83.5 mm maximum length, 36.3 mm maximum height, and 41.9 mm maximum thickness. The was 12.25 mm in diameter and started on both sides, but is incomplete. The top hole is 17.9 mm deep and the bottom hole is 16.8 mm deep. The path of holes is not straight and they would not have aligned. Pick bannerstones are only attributed to the Archaic period (Converse 1978:18).

Figure 37. Diagnostic prehistoric artifacts recovered from Survey Area 10: a) Unclassified Late Archaic point fragment (12-Ha- 310) and b) bannerstone (12-Ha-307).

Historic materials accounted for 174 of the artifacts recovered. These were recovered from sites 12-Ha-307, 314 and 315 with the majority (n=111) found at site 12-Ha-314. Several decorated whitewares were recovered and one pearlware fragment was recovered (Figures 38 & 39). The pearlware fragment was recovered from site 12-Ha-314 and should date between 1780 and 1840 (Lofstrom et al. 1982:5). A flow blue whiteware sherd was recovered from site 12-Ha-307 and should date between 1820 and 1870 (ODOT 1991:178). A red transferprint sherd was also found from this site and should date between 1830 and 1850 (Lofstrom et al. 1982:14). A black transferprint, dating between 1830 and 1850, and a blue transferprint, dating between 1830 and 1860 were recovered from site 12-Ha-314 (Lofstrom et al. 1982:14). One green transferprint was recovered from site 12-Ha-307 and one was recovered from site 12-Ha-315. These two sherds should date between 1840 and 1850 (Lofstrom et al. 1982:14). Another green transferprint with red handpainting was also recovered from site 12-Ha-207 and should date between 1840 and 1870 (Lofstrom et al. 1982:14). From sites 12-Ha-307 and 314, one polychrome transferprint whiteware sherd, dating between 1830 and present was found at each site (ODOT 1991:178). A gilt edge rimsherd was found at site 12-Ha-307 and should post date 1880 (Majewski and O'Brien 1987:128).

Figure 38. Diagnostic historic artifacts from Survey Area 10, Site 12-Ha-307: a) whiteware with flow blue, b) whiteware with red transferprint, c) whiteware green transferprint , d) whiteware with green transferprint and red handpainting, e) whiteware with polychrome transferprint and f) whiteware with gilt edge.

Figure 39. Diagnostic historic artifacts from Survey Area 10, Site 12-Ha- 314: a) pearlware, b) whiteware with black transferprint, c) whiteware with blue transferprint and d) whiteware with polychrome transferprint.

Glass colors were also identified from sites 12-Ha-307, 314 and 315. From these same sites, aqua glass was recovered that was likely manufactured between 1800 and 1910 (Fike 1984). From sites 12-Ha-307 and 314, amethyst glass was recovered dating to between ca.1880 and 1925 (Newman 1970:74). Milk glass was recovered from sites 12-Ha-307 and was produced between 1890 and 1960 (Fike 1984). Green glass was recovered from site 12-Ha-314 and should date between 1860 and present (Fike 1984). From site 12-Ha-307, olive green glass was found and likely dates ca. 1870 (Fike 1984). Clear glass was recovered that has open production dates beginning in 1875 and was recovered from sites 12-Ha-307 and 314 (Fike 1984). Cobalt blue glass was manufactured beginning in 1890 and was recovered from site 12-Ha-307 (Fike 1984). From sites 12-Ha-307 and 314, amber glass was recovered that has open production dates beginning ca. 1860 (Fike 1984).

Sites

Nine archaeological sites, 12-Ha-307 to 315, were recorded in Survey Area 10 (Figures 40 & 41). Summaries for the individual sites are contained in Appendix H. Eight of the sites had unidentified Prehistoric components (12-Ha-307 to 309, 311 to 315), one site had a Late Archaic component (12-Ha-310) and three sites (12Ha-307, 314,

315) had Historic components. One site was an isolated find (12-Ha-310), five sites were prehistoric lithic scatters (12-Ha-308, 309, 311 to 313) and three sites were scatters of both prehistoric and historic components (12-Ha-307, 314, 315).

Sites Locations Confidential

Not for Public Disclosure

Figure 40. A portion of the USGS 7.5' Ingalls, Indiana Quadrangle showing the location of sites 12-Ha-307 to 315.

Sites Locations Confidential

Not for Public Disclosure

Figure 41. 2003 aerial of Survey Area 10 showing the location of sites 12-Ha-307 to 315.

The sites were found on all landforms present in the survey area. Five of the sites (12-Ha-311 to 315) were encountered in till plain settings. Four of these sites were found on or partially on Miami soils and only one was found on Crosby/Brookston soils). Two of the sites (12-Ha-307 and 308) were encountered in outwash terrace settings. One of

the sites (12-Ha-310), an isolated find, was found on the outwash plain or sluiceway setting. One site (12-Ha-309) was encountered in both the outwash terrace and outwash plain. Similar to Survey Area 3, the Miami or Ockley soils were the preferred location for prehistoric occupations.

The majority of the prehistoric sites contained fewer than ten artifacts and few or no fire-cracked rocks. Due to the low numbers of artifacts and fire-cracked rocks encountered, sites 12-H-307 to 310 and 312 to 315 were not considered eligible for listing on the State or National Registers. Site 12-Ha-311 consisted of 35 prehistoric artifacts and seven fire-cracked rocks. Several of the flakes had the appearance of originating from the same core but no refits were possible. While this site did contain a larger number of artifacts, the majority of the site is located on eroded Miami soils. Subsoil was apparent on the surface at the time of the survey. Given the eroded nature of the site, it is not considered eligible for listing on the State or National Registers. The historic components of sites 12-Ha-307 and 315 are likely part of the same site and associated with the house lot that separates them. The sites were given separate numbers primarily due to the prehistoric components. Historic artifacts recovered from these sites date as early as 1800 and several ceramics date to the early 19th century. The 1887 Atlas of Green Township does show a structure near site 12-Ha-307 (Griffing 1976:13). The house lot currently contains a ranch style house and pole barn. Due to the modern construction at this location and resultant disturbance, sites 12-Ha-307 and 315 are not considered eligible for listing on the State or National Registers. The historic artifacts recovered from site 12-Ha-314 date as early as 1780. The 1887 Atlas of Green Township does show a structure on [redacted] near site 12-Ha-314 (Griffing 1976:13). The site could provide information on the historic occupation of Hancock County and has the potential to be eligible for listing on the State or National Registers. Site 12-Ha-314 is recommended for testing.

Density

Survey Area 10 consisted of approximately 21.8 acres of till plain, 17.8 acres of outwash plain/sluiceway and 12.8 acres of outwash terrace. Within Survey Area 10, a density of one prehistoric site per 4.4 acres occurred within the till plain, one prehistoric site per 8.9 acres occurred within the outwash plain/sluiceway and one prehistoric site per 4.3 acres occurred within the outwash terrace landform. An overall density of prehistoric sites within Survey Area 3 was one site per 5.8 acres.

Survey Area 11

Survey Area 11 was located in the south central part of the county in [redacted] Figure 42). The area surveyed was on the [redacted] The property was surveyed on March 13 , 2007. Ground surface visibility varied between 40 and 60% in rows without crop debris within the eastern two-thirds of the field. This part of the field was no till and bean and crop debris hindered visibility. The western part of the field had been plowed in the fall and

was weathered. Some bean debris was present in the field and ground surface visibility was approximately 90%. Approximately 72.3 acres were surveyed consisting of 31.2 acres of outwash terrace, 23.5 acres of floodplain and 17.6 acres of till plain. The area contained Ockley (OcA, OcB2), Miami (MmB2, MpC3), Crosby (CrA), Sloan (So) and Genesee (Ge) soils. Fifteen archaeological sites were encountered during the survey. The sites ranged in size from prehistoric isolated finds to lithic scatters1442 m² and small historic scatters 353 m² to scatters of both prehistoric and historic artifacts 7751 m² (1.9 acres) in size. Components identified in the sites included Early Archaic, Early Woodland, Late Woodland, unidentified Prehistoric and Historic.

Sites Locations Confidential

Not for Public Disclosure

Figure 42. A portion of the USGS 7.5' Fountaintown, Indiana Quadrangle showing the location of Survey Area 11.

Artifacts

A total of 106 artifacts, 24 fire-cracked rocks and 12 bricks were encountered in Survey Area 11. Table 22 provides a list of the artifacts recovered by category. Artifacts are listed by individual site in Appendix G. Only a few of the artifacts recovered were diagnostic of a particular time frame and are discussed below.

Table 22.
Artifacts from Survey Area 11.

Category	No.	Category	No.
Unmodified flakes	16	Container glass	9
Edge modified flakes	10	Bottle glass	3
Cores	3	Flat glass	2
Stage 3 biface	1	Whiteware	20
Stage 4 biface	1	Stoneware	29
Point fragments	3	Metal buckle	1
St. Albans point	1	Horseshoe nail	1
Cresap point	1	Coal	4
Triangular point	1		

Three identifiable projectile points were recovered from Survey Area 11 (Figure 43). The St. Albans point was recovered from site 12-Ha-317. It was manufactured from Fall Creek chert. St. Albans points date between 6900 and 6500 BC (Justice 1987:90). The Cresap point was also found at site 12-Ha-317 and manufactured from Wyandotte chert. Cresap points date between 1000 and 500 BC (Justice 1987:187). A Triangular Cluster point fragment was recovered from site 12-Ha-328. The point dates to the Late Woodland period between AD 800 and 1300 (Justice 1987:227-229).

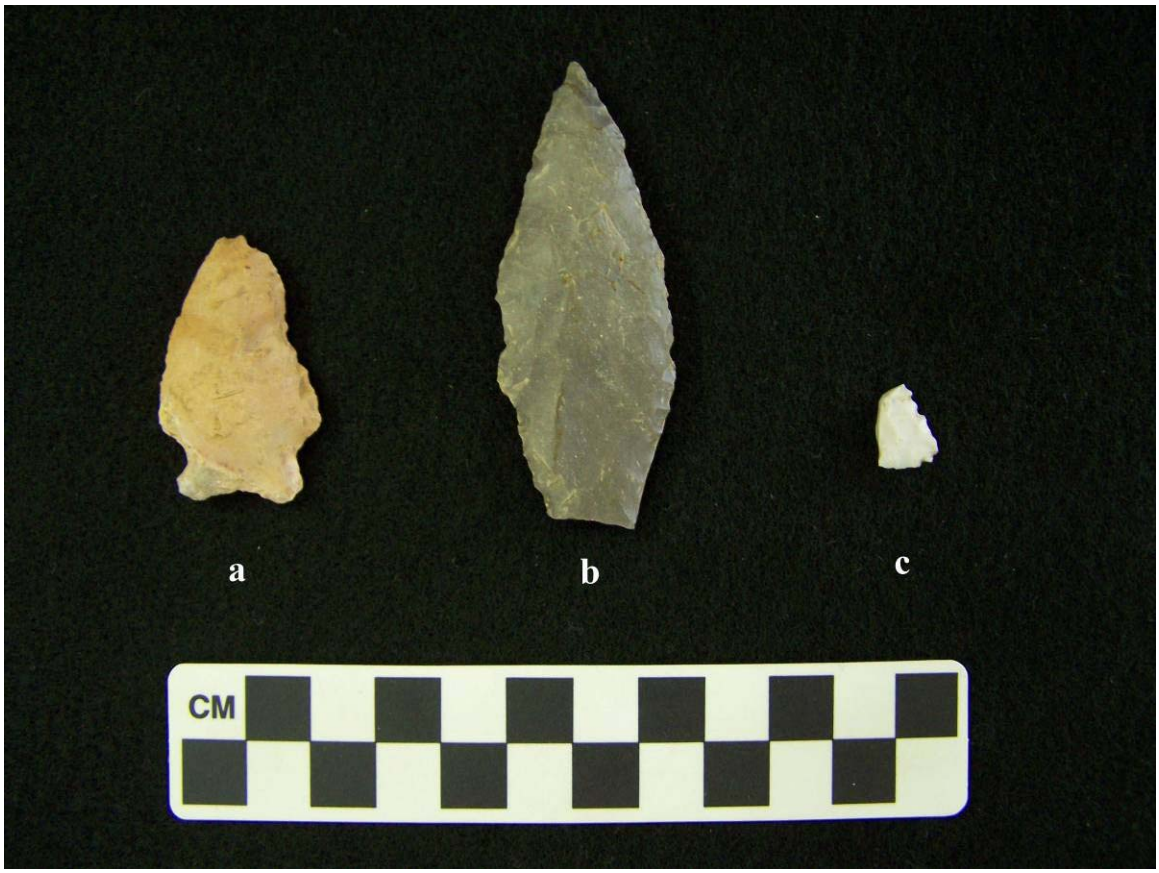

Figure 43. Diagnostic prehistoric artifacts from Survey Area 11: a) St. Albans point (12-Ha-317), b) Cresap point (12-Ha-317) and c) Triangular Cluster point (12-Ha-328).

The majority of the historic artifacts, 61 of 65, were recovered from site 12-Ha-317. A few of the ceramics found at this site were decorated whitewares (Figure 44). Three sherds with green transferprint were recovered. Green transferprints were manufactured between 1830 and 1850 (Lofstrom et al. 1982:14). Two sherds with a blue sponge decoration were likely manufactured between 1840 and 1860 (ODOT 1991:178). Two rim sherd were a flow blue shell edge design. These sherds were likely manufactured between 1820 and 1860 (Majewski and O'Brien 1987:152).

Figure 44. Diagnostic historic arifacts from Survey Area 11, Site 12-Ha-317: a) whiteware with green transferprint, b) whiteware with flow blue transferprint, and c) whiteware with blue sponge decoration.

Glass colors were also examined for production dates. Again most of the glass artifacts were recovered from site 12-Ha-317. However, an aqua glass bottle was also found at site 12-Ha-329 in addition to several pieces from site 12-Ha-317. Aqua glass was commonly manufactured between1800 and 1910 (Fike 1984). Amethyst glass dating to ca. 1880 to 1925 (Newman 1970:74) and clear glass that has open production dates beginning in 1875 (Fike 1984) were recovered from site 12-Ha-317.

Sites

Fifteen archaeological sites, 12-Ha-316 to 330, were recorded in Survey Area 11 (Figures 45 & 46). Summaries for the individual sites are contained in Appendix H. Twelve of the sites had unidentified prehistoric components (12-Ha-316, 318 to 327, 330), one site had an Early Archaic component (12-Ha- 317), the same site had an Early Woodland component (12-Ha-317), one site had a Late Woodland component (12-Ha-328) and two sites had Historic components (12-Ha-317 and 330). Five of the sites were prehistoric isolated finds (12-Ha 318, 321 to 324), eight of the sites were prehistoric lithic scatters (12-Ha-316, 319, 320, 325 to 328, 330), one site was a historic scatter (12-Ha-329), and one site was a scatter of both prehistoric and historic artifacts (12-Ha-317).

Sites Locations Confidential

Not for Public Disclosure

Figure 45. A portion of the USGS 7.5' Fountaintown, Indiana Quadrangle showing the location of sites 12-Ha-316 to 330.

Sites Locations Confidential

Not for Public Disclosure

Figure 46. 2003 aerial showing the location of sites 12-Ha-316 to 330.

The sites were found on all landforms present in the survey area. Seven of the sites (12-Ha-318, 320 to 322, 326 to 328) were encountered in outwash terrace settings on Ockley soils. Six of the sites (12-Ha-316, 317, 323 to 325, 329) were located in till plain settings. Five of these sites were located primarily in Miami soils and one was

located in Crosby soils. Two of the sites (12-Ha-319 and 330) were located on Sloan soils in a floodplain setting.

Due to the low numbers of prehistoric artifacts and fire-cracked rocks, none of the prehistoric sites were considered eligible for listing on the State or National Registers. Most of these sites were located on eroded soils as well. Site 12-Ha-329 only contained four historic artifacts and was located near the extant house lot. This site is not considered eligible for listing on the State or National Registers. Site 12-Ha-317 contained a number of historic artifacts including ceramics, glass, metal and bricks. [redacted] artifacts recovered from the site date as early as 1820. The 1897 Atlas of [redacted] shows a house near the current residence even though the extant house appears to be more of a 1920 to 1940s era style. Site 12-Ha-317 is believed to represent a dumping area at the north end of the farm lot, not a former residence. The site area is also moderately to severely eroded with subsoil apparent at the surface. The site is unlikely to contain intact historic features even if a structure existed at this location. Site 12-Ha-317 is not considered eligible for listing on the State or National Registers.

Density

Survey Area 11 consisted of approximately 31.2 acres of outwash terrace, 23.5 acres of floodplain and 17.6 acres of till plain. Within the survey area, a density of one prehistoric site per 4.5 acres occurred within the outwash terrace, one prehistoric site per 3.5 acres occurred within the till plain and one prehistoric site per 11.8 acres occurred within the floodplain. An overall density of prehistoric sites within Survey Area 10 was one per 5.2 acres.

Survey Area 12

Survey Area 12 was located in the northwest portion of Hancock County in [redacted] This area is approximately one mile east of Survey Area 4. Survey Area 12 was west of [redacted] Residential development is occurring in the area. This area was surveyed on March 14, 2007. Ground surface visibility ranged between 40 and 60% in strips without crop debris in most of the field. The eastern part of the area had more patchy visibility that dropped in some area to 10%. The field was no till and bean and corn debris obscured visibility. Approximately 55.3 acres were surveyed and the entire area was in a till plain setting. The area contained Crosby (CrA), Brookston (Br), Kokomo (Ko) and Miami (MmB2, MpC3) soils. Seven archaeological sites were encountered during the survey. The sites ranged in size from a prehistoric isolated find to prehistoric lithic scatters 16,346 m² (4 acres) and a historic scatter 3131 m² in size. Components identified in the sites included Late Archaic, Middle Woodland, Late Woodland, unidentified Prehistoric and Historic.

Sites Locations Confidential

Not for Public Disclosure

Figure 47. A portion of the USGS 7.5' Ingalls, Indiana Quadrangle showing the location of Survey Area 12.

Artifacts

A total of 287 artifacts, over 100 fire-cracked rocks and 12 bricks were encountered in Survey Area 12. Table 23 provides a list of the artifacts recovered by category. Artifacts are listed by individual site in Appendix G. The diagnostic artifacts are discussed below.

Table 23.
Artifacts from Survey Area 12.

Category	No.	Category	No.
Unmodified flakes	131	Melted glass	1
Edge modified flakes	47	Whiteware	10
Cores	11	Porcelain	2
Bipolar	7	Refined earthernware	2
Stage 2 biface	1	Stoneware	5
Stage 3 biface	1	Yelloware	1
Point fragments	2	Metal nut	1
Triangular point	2	Nail	1
MW Expanding Stem point	1	Metal, unidentified	1
Matanzas point	1	Aluminum	1
Container glass	38	Coal	4
Bottle glass	1	Plastic	1
Flat glass	12	Bone, chicken	1
Canning lid liner	1		

Four identifiable projectile points were recovered from Survey Area 12 (Figure 48). The Matanzas point was recovered from site 12-Ha-331. It was manufactured from heat treated Fall Creek chert. Mantanzas points date between 3700 and 2000 BC (Justice 1987:119). The Middle Woodland Expanding stem point was found at site 12-Ha-333 and manufactured from Burlington chert. This point should date between AD 200 and 600 (Justice 1987:214). Two Triangular Cluster points were recovered from site 12-Ha-331. One point was of Fall Creek chert and the other was of Fall Creek Quartzite. The points date to the Late Woodland period between AD 800 and 1300 (Justice 1987:227-229). Fall Creek Quartzite is known from the Strawtown area in Hamilton County and has not previously been identified in artifacts from Hancock County.

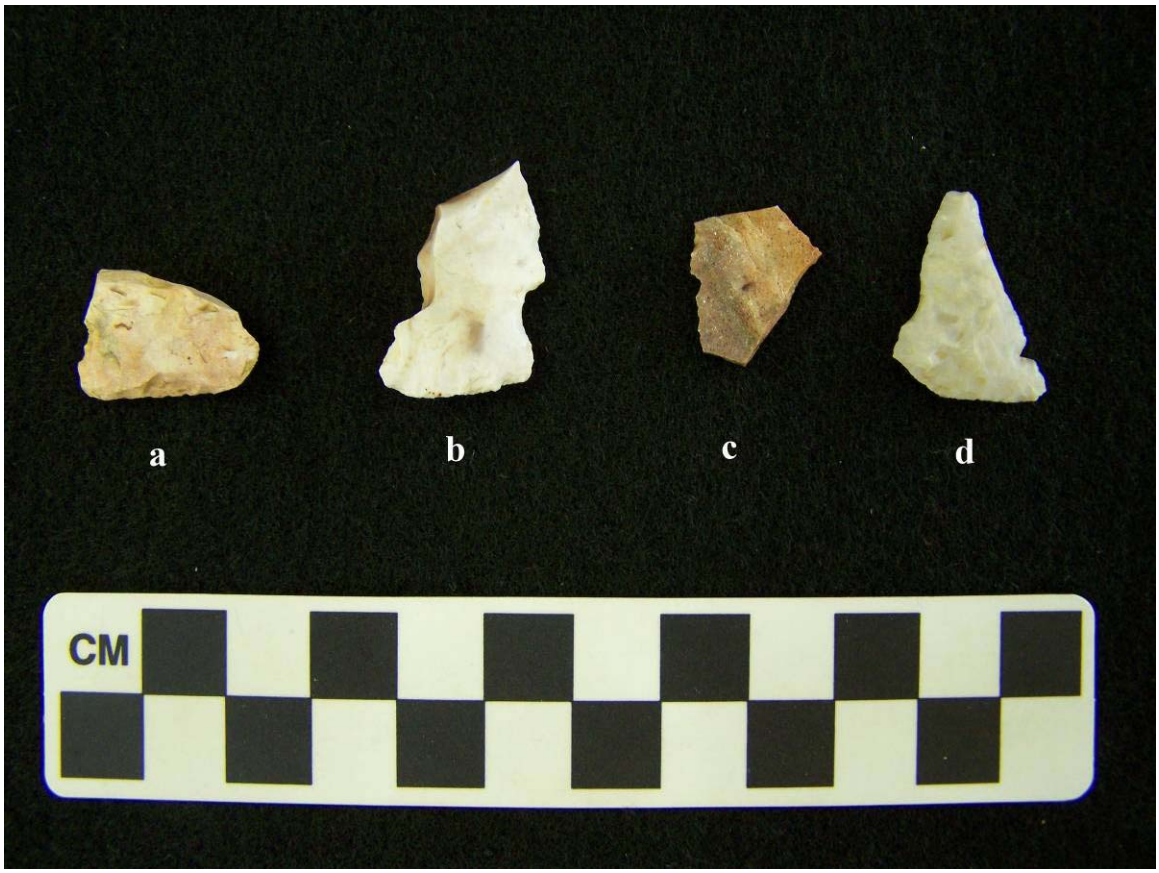

Figure 48. Diagnostic prehistoric artifacts from Survey Area 12: a) Matanzas point (12-Ha-331), b) Middle Woodland Expanding Stem point (12-Ha-333), c) and d) Triangular Cluster points (12-Ha-331).

All of the 83 historic artifacts were recovered from site 12-Ha-336. A few decorated ceramics were recovered from this site (Figure 49). One whiteware fragment was decorated with a green transferprint that was manufactured between ca. 1830 and 1850 (Lofstrom et al. 1982:14). Another whiteware sherd was decorated with a polychrome transferprint that was likely produced between 1830 to the present (ODOT 1991:178). A hand painted porcelain fragment was also found and may have been produced as early as 1820 (ODOT 1991:177). A porcelain fragment with a decalcomania design was likely produced between 1890 and the present (ODOT 1991:178).

Figure 49. Diagnostic historic artifacts from Survey Area 12, Site 12-Ha-336 : a) whiteware with green transfer print. b) whiteware with polychrome transferprint, c) porcelain with hand painting and d) porcelain with decalcomania.

Numerous colors of glass artifacts were recovered from site 12-Ha-336. Aqua glass was commonly manufactured between 1800 and 1910 (Fike 1984). Amethyst glass dates to ca. 1880 to 1925 (Newman 1970:74). Amber glass and green glass began production in 1860 and continue to the present (Fike 1984). Milk glass was produced ca. 1890 to 1960 (Fike 1984). Clear glass has open production dates beginning in 1875 (Fike 1984).

Sites

Seven archaeological sites, 12-Ha-331 to 337, were recorded in Survey Area 12 (Figures 50 & 51). Summaries for the individual sites are contained in Appendix H. Four of the sites had unidentified prehistoric components (12-Ha-332, 334, 335, 337), one site had a Late Archaic component (12-Ha 331), one site had a Middle Woodland component (12-Ha- 333), one site had a Late Woodland component (12-Ha-331) and one site had a Historic component (12-Ha-336). One of the sites was an isolated find (12-Ha-334), five of the sites were lithic scatters (12-Ha-331 to 333, 335, 337), and one site was a historic scatter (12-Ha-336).

Sites Locations Confidential

Not for Public Disclosure

Figure 50. A portion of the USGS 7.5' Ingalls, Indiana Quadrangle showing the location of sites 12-Ha-331 to 337.

Sites Locations Confidential

Not for Public Disclosure

Figure 51. 2003 aerial of Survey Area 12 showing the location of sites 12-Ha-331 to 337.

Survey Area 12 is contained within a till plain setting. All of the sites discovered were in a till plain setting. Nearly half of the soils (25.2 acres) contained within the survey area were the very poorly drained Brookston soils and Kokomo soils consisted of approximately 3.6 acres. Crosby soils, somewhat poorly drained, consisted of

approximately 22.7 acres. The well drained Miami soils consisted of approximately 3.4 acres. All of the sites encountered were located at least partially on Crosby soils. Four of the sites were partially on Brookston soils (12-Ha-331 to 333, 336). While Miami soils were a very small part of the survey area, two sites were located on them (12-Ha-331and 335).

Sites 12-Ha-332, 333, 334, 335 and 337 contained low numbers of artifacts and fire-cracked rocks. Therefore, none of these sites were considered eligible for listing on the State or National Registers. Site 12-Ha-331 contained the largest number of prehistoric artifacts encountered during the pedestrian survey (n=184) and over 100 fire-cracked rocks. One of the local collectors interviewed stated that he had found numerous triangular points from this area. While the site is partially located on severely eroded soils, portions of the site are not. Given the high numbers of artifacts and fire-cracked rocks, the site is considered potentially eligible for listing on the State or National Registers and testing is recommended. Site 12-Ha-336 consists of a historic scatter of 83 artifacts. A few of the artifacts may date as early as 1830, but the majority appear to be associated with the late 19th century. The 1897 Atlas of [redacted] (Griffing 1976) shows a structure at the location of site 12-Ha-336 on [redacted]. The site may contain intact archaeological deposits and is recommended for testing.

Density

Survey Area 12 consisted of approximately 55.3 acres. All of the survey was in the till plain zone. Of the seven sites identified, six had prehistoric components. The site density of prehistoric sites within Survey Area 12 was one site per 9.2 acres

Survey Area 13

Survey Area 13 was located in the southwestern part of the county in [redacted] (Figure 52). The area surveyed was on the uplands [redacted] Residential development is occurring rapidly in this area around New Palestine. The property was surveyed on April 18, 2007. Ground surface visibility was between 30 and 80% but averaged approximately 40%. The field was no till with bean and corn debris and dandelions Approximately 43.4 acres were surveyed all in a till plain setting. The area contained Crosby (CrA), Brookston (Br) and Miami soils (MmB2). Seven sites were encountered during the survey. The sites ranged in size from prehistoric isolated finds to lithic scatters 392 m² in size. Unidentified Prehistoric components were identified in the sites.

Sites Locations Confidential

Not for Public Disclosure

Figure 52. A portion of the USGS 7.5' Acton, Indiana Quadrangle showing the location of Survey Areas 13 and 14.

Artifacts

A total of 11 artifacts and six fire-cracked rocks were encountered in Survey Area 13. Table 24 provides a list of the artifacts recovered by category. Artifacts are listed by individual site in Appendix G. No diagnostic artifacts were recovered.

Table 24.
Artifacts from Survey Area 13

Category	No.
Unmodified flakes	3
Edge modified flakes	3
Core	1
Bipolar	1
Point fragments	2
Other chipped stone	1

Sites

Seven archaeological sites, 12-Ha-338 to 344, were recorded in Survey Area 13 (Figures 53 & 54). Summaries for the individual sites are contained in Appendix H. All of the sites had unidentified prehistoric components. Four of the sites were isolated finds (12-Ha-340, 342 to 344) and three were small lithic scatters (12-Ha-338, 339, 341). All of the sites were located in the till plain setting. Three sites were located on Crosby soils (12-Ha-338, 340, 343), two sites were located on Brookston soils (12-Ha-342 and 344), and one site overlapped both Crosby and Brookston soils (12-Ha-341). Only one site was encountered on Miami soils (12-Ha-339), but Miami soils were less than 3 acres of the survey area.

Sites Locations Confidential

Not for Public Disclosure

Figure 53. A portion of the USGS 7.5' Acton, Indiana Quadrangle showing the location of sites 12-Ha-338 to 344 and 345 to 350.

Sites Locations Confidential

Not for Public Disclosure

Figure 54. 2003 aerial showing the location of sites 12-Ha-338 to 344.

Due to the low numbers of artifacts and fire-cracked rocks recorded from each of the sites in Survey Area 13, none of the sites were considered eligible for listing on the State or National Registers.

Density

Survey Area 13 consisted of approximately 43.4 acres. All of the survey was in the till plain zone. Of the seven sites identified all had prehistoric components. The site density of prehistoric sites with Survey Area 13 was one site per 6.2 acres

Survey Area 14

Survey Area 14 was located just to the south of Survey Area 13 near [redacted] (Figure 52). This survey area was within the western [redacted] The property was surveyed on April 18, 2007. Ground surface visibility was between 30 and 50% and averaged 40%. The field was no till with bean and corn debris and onions that affected visibility. Approximately 10 acres were surveyed consisting of 5.4 acres of till plain and 4.6 acres of floodplain. The area contained Miami soils (MmB2, MmD2), Crosby soils (CrA) and Eel soils (Ee). Six sites were encountered during the survey. The sites ranged in size from isolated finds to lithic scatters 1204 m² in size. The sites had unidentified Prehistoric components.

Artifacts

A total of 16 artifacts and 13 fire-cracked rocks were encountered in Survey Area 14. Table 25 provides a list of the artifacts recovered by category. Artifacts are listed by individual site in Appendix G. No diagnostic artifacts were recovered. One endscraper was found at site 12-Ha-348 (Figure 55). The endscraper was manufactured from Fall Creek chert and had been broken.

Table 25.
Artifacts from Survey Area 14

Category	No.
Unmodified flakes	4
Edge modified flakes	7
Cores	4
Endscraper	1

Figure 55. Endscraper from site 12-Ha-348.

Sites

Six archaeological sites, 12-Ha-345 to 350, were recorded in Survey Area 14 (Figures 53 & 56). Summaries for the individual sites are contained in Appendix H. All of the sites had unidentified Prehistoric components. Three of the sites were isolated finds (12-Ha-347, 348, 350) and three were small lithic scatters (12-Ha-345, 346, 349). All of the sites encountered on the Miami soils, but site 12-Ha-345 also overlapped with Eel soils.

Sites Locations Confidential

Not for Public Disclosure

Figure 56. 2003 aerial showing the location of sites 12-Ha-345 to 350.

Due to the low numbers of artifacts and fire-cracked rocks recorded from each of the sites in Survey Area 14, none of the sites were considered eligible for listing on State or National Registers. The sites were also located on eroded soils.

Density

Survey Area 14 consisted of approximately 5.4 acres of till plain and 4.6 acres of floodplain. A density of one prehistoric site per 0.9 acres occurred within the till plain and one prehistoric site per 4.6 acres occurred within the floodplain. An overall density of one site per 1.7 acres occurred.

Summary and Discussion

A total of approximately 787 acres were surveyed by pedestrian transects during this project. Fourteen agricultural fields from different areas of Hancock County were surveyed. The areas were primarily chosen if they were near urban or residential expansion or gravel mining operations.

Artifacts and Sites

A total of 161 new archaeological sites and 1653 artifacts were recorded from the pedestrian survey. Historic artifacts numbered 950 and 702 prehistoric artifacts were recovered. No Paleoindian components were documented, but Early Archaic through Late Woodland occupations were found (Table 26). Sites with a prehistoric component totaled 147 (Table 27). Historic component sites, totaling 24 in number, were primarily late 19th to early 20th century scatters or farms (Table 27). The components documented by this survey were comparable to information previously documented in Hancock County (see Table 4). The results are also comparable to what is expected in the till plain region. Diagnostic Late Archaic artifacts are the most frequently encountered within the till plain, Early Archaic artifacts are the second most frequently encountered and Late Woodland artifacts are the third most frequently encountered (Cochran 1994:7-8). Both Early Archaic and Late Archaic sites were found on a variety of landforms analogous to other till plain regions (Cochran 1994:7-8). Middle Archaic, Early Woodland, Middle Woodland and Late Woodland were more limited in range occurring in only till plain and/or outwash terrace settings. Historic components were most often associated with till plain settings, but small scatters did occur in other settings.

Table 26.
Site Components from Survey

Component	No.	Comment
Unidentified Prehistoric	127	3 multicomponent (historic)
Paleoindian	0	
Early Archaic	7	3 multicomponent
Middle Archaic	1	
Late Archaic	9	3multicomponent
Early Woodland	1	multicomponent
Middle Woodland	3	
Late Woodland	4	1 multicomponent
Historic	23	9 multicomponent (prehist)

Table 27. Site Types from Survey			
Prehistoric Type	No.	Historic Type	No.
Lithic scatter	81	Scatters	18
Isolates	66	Farm/scatter	2
		House/scatter	2
		Mill race	1

In comparison with previous surveys of Hancock County (see Table 6), the diagnostic prehistoric artifacts recovered during this survey were similar (Table 28). Cresap, Karnak, Late Archaic Barbed, Charleston, Kanawha, Palmer, St. Albans and Wabash Diagonal Notched types were not previously recognized in Hancock County, but were noted for the region (see Table 9). The survey reinforced the presence of Hardin Barbed points in Hancock County that are not recognized regionally. The survey did not recover some of the more common point types known from the till plain region such as Kirk, Brewerton and Lamoka.

Table 28. Projectile Points Recovered.	
Cultural Period	Projectile Points
Late Woodland	Triangular Cluster (4)
Middle Woodland	Middle Woodland Expanding Stem (3)
Early Woodland	Cresap (1)
Late Archaic	Karnak (1), Late Archaic Barbed Cluster (1), Riverton (1), Matanzas (2), unclassified Late Archaic (3)
Middle Archaic	Raddatz (1)
Early Archaic	Charleston Corner Notched (2), Hardin Barbed (1), Kanawha (1), Palmer (1), St. Albans (1), Wabash Diagonal Notched (1)
Paleoindian	

Other than projectile points, the number of chert tools recovered during the survey was very low. Only five endscrapers were recovered. Most of the site assemblages contained products of lithic manufacture and limited variation of artifact types. Small sites with low artifact densities and a small number of artifact types have been classified as “task-specific” sites (Wepler and Cochran 1983:33-37). These sites are thought to represent a single or small number of activities and probably functioned as procurement/processing sites or small temporary camps (Wepler and Cochran 1983: 37).

Cherts identified during the survey included Fall Creek, heat treated Fall Creek, Allens Creek, heat treated Allens Creek, Attica, Burlington, Delaware, Fall Creek Quartzite, Flint Ridge, Jeffersonville, heat treated Laurel, Indian Creek, Kanawha, Wyandotte and Zaleski. All of these cherts have been recovered from the region (see Table 10).

Density

An attempt was made to sample all landforms within the county. Due to a lack of access to some properties, a stratified sample could not be fully attained. Table 29 presents the total percentage of landforms present in Hancock County and the sample of these landforms by this survey. The density of sites encountered during this survey by landform is also presented. Site densities were fairly even in till plain, floodplain and outwash plain settings. The highest site densities were found in outwash terrace settings. The higher site density may be linked to somewhat different environments and biota and/or better drained soil. The soil series identified in outwash terrace settings were all well drained. Each of the other settings contained very poorly and somewhat poorly drained soils.

Table 29.
Landforms Surveyed and Site Density

Landform	County %	Acres Surveyed	Project %	Site per Acres
Till plain	88.7	600.3	76.3	4.5
Floodplain	5.6	44.6	5.7	4.5
Outwash terrace	2.9	89.6	11.4	2.4
Outwash plain	2.2	52.0	6.6	4.3
Muck/Peat	0.2	0	N/A	N/A
Kame (w/in OT)	N/A	0	N/A	N/A

In addition to prehistoric site densities discussed for every survey area, prehistoric artifact densities were complied and presented in Table 30. Survey Areas with low site densities and low artifact densities were in till plain settings with high proportions of very poorly drained Brookston soils. Areas with higher site and artifact densities tended to have better drained soil series. Survey Area 12 was anomalous with a low site density, but high artifact density. Site 12-Ha-331 contained 184 artifacts, a large number considering that was 26% of the total prehistoric artifacts recovered for the project. This unique site skewed the artifact density for the survey area.

Table 30.
Artifact Densities

Survey	Acres	# Sites	Sites per Acre	# Artifact	Artifacts per Acre
Area 1	26.4	13	2.0	53	0.5
Area 2	104.6	21	5.0	52	2.0
Area 3	85.6	22	3.9	73	1.2
Area 4	60.2	5	12.0	27	2.2
Area 5	69.2	4	17.4	7	9.9
Area 6	28.4	11	2.6	52	0.5
Area 7	126.7	18	7.0	48	2.6
Area 8	26.0	7	3.7	39	0.7
Area 9	25.8	5	5.2	7	3.7
Area 10	52.4	9	5.8	77	0.7
Area 11	72.3	15	4.8	37	2.0
Area 12	55.3	6	9.2	204	0.3
Area 13	43.4	7	6.2	11	3.9
Area 14	10.0	6	1.7	16	0.6

Since a pattern of higher prehistoric site densities on well drained soils was recognized and supported by other research in the Till Plain region of Indiana (Cochran 1994:7), site densities were also investigated at the level of soil series. Table 31 presents the results. The best drained soils, Miami, Eel, Ockley and Whitaker, by landform had the highest site densities. Even though Whitaker is somewhat poorly drained, it is better drained than the poorly drained Rensselaer and Westland. The till plain setting exemplifies the correlation of soil drainage and site density. The well drained Miami soils have the highest frequency of sites, the somewhat poorly drained Crosby soils have the second highest frequency and the very poorly drained Brookston and Kokomo have the lowest frequency. Miami and Crosby soils are both Alfisols, but Miami occurs on the highest elevations in the till plain. Both would have supported deciduous forest for most of prehistory, but Crosby would have required more water tolerant hardwoods (Ruesch 1978). The correlation of higher site frequency on well drained soils and lower site frequency on poorly drained soils has been recognized in other Till Plain regions (Wells 1989).

Table 31.
Site Density by Soil Series

Landform	Soil Series	Acres Surveyed	# of Sites	Sites per Acre
Till plain	Crosby	242.2	50	4.8
	Brookston	182.3	18	10.1
	Miami	165.2	65	2.5
	Kokomo	6.0	1	6.0
	Milford	4.6	0	
Floodplain	Eel	10.5	8	1.3
	Genesee	6.1	0	
	Shoals	0.1	0	
	Sloan	27.9	2	14.0
Outwash terrace	Martinsville	1.7	0	
	Ockley	87.9	38	2.3
Outwash plain	Rensselaer	18.7	18.7	3.1
	Westland	30.0	30.0	7.5
	Whitaker	3.3	3.3	1.7

Recommendations

Of the 161sites recorded by the pedestrian survey, 150 were not considered eligible for listing on the State or National Registers of Historic Places (Table 32). Most of these sites were isolated finds or small scatters of artifacts with no or low numbers of fire-cracked rocks and many were also located on eroded soils.

Table 32. Site Recommendations	
Recommendation	Site No.
Not eligible	12-Ha-190 to 202, 240 to 208, 210 to 228, 230 to 260, 262 to 279, 281 to 291, 293 to 299, 301 to 305, 307 to 313, 315 to 330, 332 to 335, and 337 to 350
Further assessment	12-Ha-209, 229, 292, 300 and 306
Testing	12-Ha-203, 261, 280, 314, 331 and 336

Five sites were recommended for further assessment. Four of the sites (12-Ha-209, 229, 300 and 306) were historic scatters or farms that were not surveyed or not completely surveyed by this project. The farm or house was extant and surrounded by a grass lot and not covered by the pedestrian survey. These sites should be further assessed with shovel testing and documents research to determine the nature and extent of the archaeological resource. Site 12-Ha-292 was a mill race that was not completed surveyed during this project. The race should be surveyed to determine the extent and dimensions should be recorded. An effort to locate the mill associated with the race should also be undertaken.

Six sites were believed to be potentially eligible for listing on the State or National Registers. Four of the sites (12-Ha-203, 280, 314 and 336) were historic scatters believed to be associated with a structure or house. Site 12-Ha-203 may represent a pioneer period occupation between 1820 and 1870 and no structure is noted on the 1887 historic atlas of this area (Griffing 1976). Site 12-Ha-260 is a historic site where a house was built in 1873. In 1876 a double murder occurred within the house. The house was moved from this location ca. 1916. The 1887 Atlas of [redacted] shows a structure on [redacted] near site 12-Ha-280 (Griffing 1976:13). Site 12-Ha-314 contains artifacts that may date as early as 1780. The 1887 Atlas of [redacted] does show a structure on [redacted] near site 12-Ha-314 (Griffing 1976:13). Site 12-Ha-336 contained artifacts that may date as early as 1830, but the majority appear to be associated with the late 19th century. The 1897 Atlas of [redacted] shows a structure at the location of site 12-Ha-336 on [redacted].

The other two sites recommended for testing were prehistoric. Site 12-Ha-261 consisted of nearly 20 prehistoric artifacts and over 100 fire-cracked rocks located on a terrace adjacent to the Sugar Creek floodplain. The site may contain sub-plowzone deposits. Site 12-Ha-331 contained the largest number of prehistoric artifacts encountered during the pedestrian survey (n=184) and over 100 fire-cracked rocks. Numerous triangular points are reported from this area by a local collector. While the site is partially located on severely eroded soils, portions of the site may contain sub-plowzone deposits.

HISTORIC RESOURCES SURVEY

Jamie Meece and Beth McCord

Introduction

Due to the lack of landowner permission to adequately sample historic sources, a different methodology was adopted. Instead of conducting a pedestrian survey of 200 acres to sample historic resources, a windshield survey of all identified historic resource locations was conducted. Explorations of the German Settlement in Sugar Creek Township are presented in the following section.

Methods

Research to identify the Euro-American historic resources relied primarily on Binford's (1882) county history, Richman's (1916) county history and the 1887 county atlas (Griffing 1976). In addition to the county histories, the Indiana Historic Sites and Structures Inventory of Hancock County (Anonymous 1983) was examined for potentially extant structures. From these sources, a list of schoolhouses, saw mills, grist mills, planing mills, brickyards, tile factories, tanneries, blacksmith shops, sorghum mills, nail factories, glass factories and chemical factories was compiled (Appendix C). Over 250 historic sites were recorded. Residences and farmsteads were not targeted by this survey. Information on individual residences was obtained during the pedestrian survey. Historic cemeteries were not investigated. The Hancock County GIS department included a cemetery layer within its data (http://beacon.schneidercorp.com/?site=HancockCountyIN) and it was not felt necessary to duplicate this information. The references were variable in the quality and quantity of information provided about each site. The 1887 Atlas (Griffing 1976) typically provided a spatial location on a township map but no other details. The county histories (Binford 1882, Richman 1916) may or may not provide information on when the historic structure was built, when it ceased operation, why it ceased operation, location and owners. The location information was important for this project. Without specific locations, such as quarter section designations, the site could not be assessed by this project. Locations such as "Near Fortville" were not sufficient to investigate.

The county histories were also consulted to determine what type of architectural or archaeological remains may be present. For example, was an identified schoolhouse a frame structure or was it brick? Or, was a saw mill steam or water powered? Was the structure burned or relocated?

To provide a spatial location as precisely as possible given the information, the location for these sites was derived for "georeferenced" GIS layers of the 1887 townships maps (Griffing 1976) and early county histories (Binford 1882, Richman 1916). Since we anticipated the some sites were no longer standing and the spatial information was not precise, Google Earth was used to provide an aerial view of the location. The aerial views were consulted for present land use and remnants of old foundations.

Once the location was determined, each site was visited and photo documented. A directional reading using a compass was taken for each digital photo. All photos are on file at ARMS under accession # 06.61. The locations were examined from the road, but obvious ground depressions, disturbed soils, and remnants of old foundations in or near several sites helped determine the most likely location of most of the historic structures. A few landowners were queried during the survey to obtain additional information about the historic structures.

If above ground structures were evident that were consistent with the type of resource being investigated, the structure was given a State Site Number. A DHPA Sites and Structures Inventory form was completed for each site identified during the project. A site summary for each site is contained in Appendix H. Since the spatial information obtained during the background research was not deemed precise enough, the locations with no above ground structures were not given site numbers. However, the area of these locations may be considered sensitive.

Results

From the over 250 sites identified, 137 sites were investigated by the windshield survey: 93 township schools, 20 saw mills, 9 tile works/factories, 4 brickyards, 4 blacksmith shops, 3 grist/flouring mills, 2 sorghum factories, and 1 wagon shop (Appendix C).

The majority of the sites investigated (n=93) were schoolhouses because they were mapped on the 1887 Atlas (Griffing) providing a location to be investigated. Binford's (1882) account of the township schoolhouses discussed a few of the earliest log school houses of the 1830s to 1850s as pole-cabins and students paid tuition to attend. Most of the schools covered in his account were timber-frame structures but a few brick structures were noted (Appendix C). The schools were spaced evenly across the townships and had become free schools by the late 1840s and early 1850s. The 1887 Atlas locations relate most directly to Binford's account (1882). Richman's (1916) account relates that most of the timber structures built in the late 1860s and early 1870s were replaced by brick buildings. In some cases the schools were consolidated. In a few cases, he notes the destruction of the school buildings from fire or storms (Appendix C). Outbuildings associated with the schools are not discussed in most cases. Richman (1916) did note a barn associated with one of the consolidated schools in Blue River Township for student use.

Of the 93 schools investigated, 14 were found to be extant (Table 33). Several of the old school houses have been converted to residences. Center Township No. 3 is currently a church; Brown No. 9; Buck Creek Township No. 5; Center Township No. 6, No. 9 and No. 14; Jackson Township No. 2; Sugar Creek Township No. 3 and No. 8; and Vernon No. 7 are all currently used as residential housing. Two of the schools, Brown Township No.7 and Center Township No. 9, had been previously documented as archaeological sites 12-Ha-18 and 12-Ha-27, respectively (Wepler 1978). Ten of the schoolhouses were listed in the Indiana Historic Sites and Structures Inventory of

Hancock County (Anonymous 1983)(Appendix C). However, three of these (Buck Creek Township School No. 6, Center Township School No. 1 and Jackson Township School No. 6) were no longer standing and the locations were empty fields/lots. While only the schoolhouse structure was noted to be extant, other structures or archaeological features would be expected at these sites. While not discussed in the county histories, outhouses, a barn/stable and a well/cistern would be expected. In some cases, features associated with the earlier frame houses that were replaced by brick structures may be evident.

Table 33.
Historic Structures

Site No.	Township	Structure	Date	Type	Picture
12-Ha-351	Blue River	School No. 9	1898	Brick	Figure 57
12-Ha-353	Brown	High School , No. 7	1904	Brick	Figure 58
12-Ha-354	Brown	School No. 9	unknown	Brick	Figure 59
12-Ha-18	Buck Creek	School No. 5	unknown	Brick	Figure 60
12-Ha-359	Center	School No. 2	1888	Brick	Figure 61
12-Ha-360	Center	School No. 3	1894	Brick	Figure 62
12-ha-361	Center	School No. 6	1889	Brick	Figure 63
12-Ha-27	Center	School No. 9	1883	Brick	Figure 64
12-Ha-362	Center	School No. 14	1882	Brick	Figure 65
12-Ha-355	Jackson	School No. 2	1893	Brick	Figure 66
12-Ha-356	Sugar Creek	School No. 1	1891	Brick	Figure 67
12-Ha-357	Sugar Creek	School No. 3	1894	Brick	Figure 68
12-Ha-358	Sugar Creek	School No. 8	unknown	Uncertain - Sided	Figure 69
12-Ha-363	Vernon	School No. 4	unknown	Brick	Figure 70
12-Ha-352	Blue River	Mill Race	unknown	Earthern	Figure 71

Figure 57. Site 12-Ha-351, Blue River Township Schoolhouse No. 9.

Figure 58. Site 12-Ha-353, Brown Township High School, No. 7.

Figure 59. Site 12-Ha-354, Brown Township Schoolhouse No. 9.

Figure 60. Site 12-Ha-18, Buck Creek Township Schoolhouse No. 5.

Figure 61. Site 12-Ha-359, Center Township Schoolhouse No. 2.

Figure 62. Site 12-Ha-360, Center Township Schoolhouse No. 3.

Figure 63. Site 12-Ha-361, Center Township Schoolhouse No. 6.

Figure 64. Site 12-Ha-27, Center Township Schoolhouse No. 9.

Figure 65. Site 12-Ha-362, Center Township Schoolhouse No. 14.

Figure 66. Site 12-Ha-263, Jackson Township Schoolhouse No. 2.

Figure 67. Site 12-Ha-356, Sugar Creek Township Schoolhouse No. 1.

Figure 68. Site 12-Ha-357, Sugar Creek Township Schoolhouse No. 3.

Figure 69. Site 12-Ha-358, Sugar Creek Township Schoolhouse No. 8.

Figure 70.. Site 12-Ha-363, Vernon Township Schoolhouse No. 4.

Figure 71. Site 12-Ha-363, mill race.

The 23 mill sites investigated were predominantly saw mills. Most of these mills were steam, since the creeks of the county did not provide enough power (Appendix C)(Binford 1882, Richman 1916). In several cases modern structures of Co-Op buildings, granaries or other buildings were found at the locations of the mills. The area of the planing mill located in Greenfield, Center Township is now a lumber yard. Only one mill site was found during the windshield survey (Table 33). The race of Wolf/Bacon's mill was still evident in Blue River Township. The mill structure was apparently located across the county line in Shelby County (Binford 1882). (A mill race was also encountered during the pedestrian survey in [redacted] (see Survey Area 7)).

Of the remaining 21 sites that included tile factories, brickyards, blacksmith shops, sorghum factories and a wagon shop, no above ground structures were evident. In some cases modern structures were encountered, but nearly half of these locations were agricultural fields.

From the windshield survey, 15 extant historic structures were encountered. The survey found that approximately 6.0% of the historic sites identified from county histories were still extant. Of the 137 sites actually investigated, 10.9% had above ground structures. Only three sites were not found near the locations identified by georeferencing. The other sites averaged 37.5 m distance from the actual structures and georeferenced location. Three sites were off by 351 m, 945 m and 1766 m. All of these were school houses and the inaccuracies of the location may be due to relocation, not

erroneous histories. Based on the favorable results of georeferencing and the extant structures, the other locations with nonextant structures should be considered archaeologically sensitive.

Conclusions

The windshield survey was a productive technique to document Euro-American historic resource locations. Of the 137 locations investigated, 15 archaeological sites were recorded. School houses were primarily documented by this survey. Some of the schools were abandoned and others were converted to residential or public use. Each of the school sites has the potential to contain archaeological information even though the features may be limited. Archaeological information from these schools concerning the lifeways of Hancock County residents from mid to late 19th century through early 20th century is potentially available from these sites. The conversion of some of the schools to residential structures adds another facet to archaeological investigations. All of the extant schools were recommended for further archaeological investigations and testing. Site 12-Ha-352, the mill race, was recommended for further evaluation; primarily documenting the dimensions and path of the race.

Favorable results in the accuracy obtained by georeferncing the historic resource locations expands the potential for identifying nonextant historic structures. If landowner permission were obtainable, more of these areas could be explored using pedestrian transect or shovel testing methods. Urban settings or areas with modern buildings would have a very low potential to contain intact archaeological deposits. Areas that are rural or agricultural fields would contain a higher potential for intact archaeological deposits. A search area of 100 m around the georeferenced location should produce favorable results. Until field investigations are completed, these locations should be considered archaeological sensitive.

GERMAN SETTLEMENT

Jutta Voglebacher and Beth McCord

Introduction

The early histories of the county (Binford 1882, Richman 1916) reported a concentration of German immigrants in Sugar Creek Township. In conjunction with the study of Euroamerican settlement in the county, an examination of the "German Settlement" was undertaken. It was hoped that some of the German immigrant landholdings would be surveyed during this project, but unfortunately permission was not obtained. The New Palestine area of Sugar Creek Township where most of the immigration was centered is under rapid development. The German Settlement and immigration was explore through historic research and visits to several German cemeteries and one German residence still occupied by the immigrant's descendents.

Immigration

According to *Peopling Indiana* (Taylor and McBirney 1996:146) immigrants from German speaking countries made up the largest group of settlers in Indiana. It is important to note that prior to 1871 (before the beginning of the Second Reich), Germans who moved to Indiana identified themselves as citizens of a kingdom, duchy, or city state rather than a nation state (Taylor and McBirney 1996:146). They were somewhat bound together as a cultural construct rather than a political construct. Further divisions, however, were along linguistic as well as religious lines. Depending on what area (kingdom, duchy, city state, etc.) an immigrant would come from, they would also speak a dialect unique to that region/place. The same is true for the religious denomination. The reformation essentially divided the places up into Catholics and Protestants (Taylor and McBirney 1996:147).

The latter group was divided among Lutherans and Evangelical-Reformed (Calvinists). In addition, there were several groups of Anabaptists who had fundamental differences with the Protestant state churches as well as among themselves. To these groups can be added the smaller number of German-Jewish immigrants to indicate the complexity underlying any simple appellation "German" (Taylor and McBirney 1996:147).

As far as the present state of Indiana is concerned, German immigrants were recorded from the early French period. "German names appear among the inhabitants of Fort Vincennes (Sackville), established in 1727" (Taylor and McBirney 1996:148). The first wave of German immigration occurred between 1816 and 1848. This wave was offset by a variety of reasons and a more detailed discussion would go beyond the limit of this report. However, economics played an important role. Central Europe after the defeat of Napoleon in 1815 witnessed widespread unemployment and poverty. This was mostly due to the effect of England's industrial revolution on the German home industries. Poor harvests and perceived overpopulation were additional factors (Taylor and McBirney

1996:152). Avoiding military conscription or becoming disillusioned with the political developments (after 1815 conservative politics and a restoration of old-line monarchies disappointed those who were hoping for a republic) were also good reasons for emigration (Taylor and McBirney 1996:152).

According to *Peopling Indiana* (Taylor and McBirney 1996), Hancock County contained 286 German immigrants by 1880. Almost half of these immigrants came from Prussia. Others emigrated from Baden, Hessen, Bavaria, or specific cities such as Hannover and Darmstadt. Compared to other counties in Indiana, the German population of Hancock County is not that high. For example, by 1880 Dearborn County had 2980 German immigrants on record and Allen County had 3782. Though smaller in overall numbers, the Germans as an ethnic group left their mark on Hancock County and specifically on Sugar Creek Township. German immigrant residences are almost exclusively in Sugar Creek Township, at least up to 1916. In fact, only a couple of German names could be found in other townships, but without reference to their exact ancestry. Therefore, this report deals exclusively with Sugar Creek Township.

Hancock County's earliest German immigrant, at least according to Binford, was Carl Julius Leopold Albert von Bonge (Binford 1882:302). Binford (1882:302) notes the date of entry into Hancock County and specifically into Sugar Creek as early as 1828. Richman (1916) records the date for the start of the German settlement in Sugar Creek Township as 1828. However, he states that this was the year von Bonge was banished from the Fatherland (Prussia) because of participating in a political revolution (Richman 1916:752). A friend, Albert Lange, who was also banished from Prussia, emigrated with von Bonge. The two earliest settlers came first and foremost for political reasons. Both, von Bonge and Lange were well educated. They were schoolmates and had practiced law (Binford 182:302).

In 1833 Anton Wishmeier came from Minden-on-the-Weser. He brought farming equipment with him from Germany and it is assumed that he had farmed in East Prussia as well. It is unclear why he left. Jakob Schramm, who arrived in 1835 in Sugar Creek Township, left because of a family dispute. He was a businessman and well to do, but his father threatened to disinherit him because of his choice for marriage. Schramm married, nevertheless. In 1830 Schramm sent an old friend to the New World to buy a homestead for him and his new wife. Right before they left German, his father grew very ill and decided not to disinherit him (Schramm Letters 1836:227). Schramm still followed through with his original plan.

Also in 1835, a group of 16 young people from the area around Minden left their homes because of the writings of a Dr. Rosenberg who had described the beauty of Illinois prairies for a Sunday school journal (Richman 1916:753). Rosenberg had failed to mention that milk fever was rampant. He told the party, however, when he met them in Cincinnati. Richman writes further. "Several of the company wept. Others, including Ludwig Richman, were acquainted with Anton Wishmeier, who had settled in Sugar Creek Township, and in their extremity they decided to find him" (Richman 1916:753).

William Borman and Ernst H. Faut were also cited specifically by Richman (1916). He failed, however, to note a precise date of their arrival in Sugar Creek Township as well as their reasons for leaving the home country. As a matter of fact, most German immigrants mentioned in either of the two Hancock county histories are only listed by names. A date is attached to some, but for only a handful were reasons for leaving Germany or what they were doing prior to leaving is given. There are no conclusive answers as to why most of them left, nor can this report shed light on their class/status/profession prior to emigration.

However, all the individuals mentioned above belong to the so called First Wave of German immigrants. A generalization as to why a lot of them immigrated has already been given. Interestingly enough, Schramm, in his letters, proposed that young Germans with a working class background would have it much easier in this country for it would be easier to adapt if one had nothing prior to arrival and therefore nothing to miss. Germans, however, who had owned land and were wealthy would have a hard time adapting because life in Hancock County was very hard and at times it was impossible to get any services (Vonnegut 1935:281).

Contributions

According to *Peopling Indiana,* "religion constituted the central point in the life of the majority of early German (and other) immigrants. It provided a spiritual and psychological framework for understanding life and its difficulties" (Taylor and McBirney 1996: 153). This meant that as soon a place of living was secured, a church and often a school house were built. Hundreds of churches all over Indiana were founded by German immigrants or their descendants (Taylor and McBirney 1996: 153).

The second wave of immigrants occurred from 1848 to 1861, called The Forty Eighters. Many individuals in this group of immigrants left the home country because of the failed revolution in 1848. They distinguished themselves from the previous generation insofar as being politically and socially motivated. Many were well educated and quickly took on causes such as equal rights, abolition of slavery, etc., in their new home country. German newspapers and "Vereine" (clubs) were also founded rather quickly in order to preserve German values (Taylor and McBirney 1996: 160). Furthermore, "Throughout the state German Americans were engaged in the accumulation and application of capital. Money brought by German immigrants was generally carefully and conservatively invested, frequently in rock-solid enterprises. German-American names in industry include the South Bend carriage and later-to-be automotive works of the Studebaker brothers (Taylor and McBirney 1996: 166).

Looking specifically at Sugar Creek Township of Hancock County, Jakob Schramm seems to be one of the best examples of how German immigrants used the money they brought with them. Schramm made good use of his skills as a businessman and "he soon became on of the most enterprising farmers and citizens of the county (Richman 1916: 754)." Not only did Schramm build the first frame barn in the county, he also constructed a plank road and charged toll. The road led from his home in the south

side of Section 12 to the National Road. He also founded the first horseshoe tile factory in 1863 (Richman 1916) and overall accumulated a great deal of wealth. Binford (1882:278), however, in an earlier account, sets the beginning of the tile factory to 1855. This confusion of dates is an example of the differences in recording between Richman (1916) and Binford (1882). Another tile factory was built by William Roesner in 1865 (Richman 1916: 744).

Ernst H. Faut serves as another good example of the contributions German immigrants made to their respective communities. Faut, an intellectual, served as assessor and township trustee. Later he was also county treasurer of Hancock County. Besides serving the township/county through offices, he also owned a blacksmith business (Richman 1916: 755).

Binford (1882) lists the following businesses in Palestine in 1882. As merchant, J. A. Schreiber is noted. One of the druggists is H. A. Schreiber. E. H. Faut and brothers are listed as blacksmiths and carriage makers. The hotel keeper is M. Hinchman and Fred. Gesler ran a saw-mill (Binford 1882: 290,291). Richman states that, "a saw-mill was erected in New Palestine in 1878, by Fred Gessler" (1916: 744). A further saw-mill erected by German immigrants was the Gemmer & Vogel saw-mill built around 1850 about 1/2 mile northeast of New Palestine. The Gemmer farm and mill were later taken over by Thomas D. Walpole (Richman 1916: 743). Gemmer and Vogel are otherwise not mentioned and it could be speculated that the families or individuals moved away. Also, a brick yard was built close to New Palestine in 1880 by Anton F. G. Richman (Richman 1916: 744).

Richman (1916: 755), as a general statement of the influence of German immigrants on the county, notes that "they have been a frugal industrious people, and have made their portion of Sugar Creek a garden spot in the county." Binford (1882: 304) also states that the German immigrants transformed the land from marsh into meadow, forests into fields of grain and beds of roses.

As previously mentioned, religious life was very important to the earlier immigrants. German immigrants certainly left their mark with the churches they built shortly after arriving in Sugar Creek Township. The German Lutheran Church serves as a good example. It could be argued that their later Christmas celebration was an event for all the residents of Sugar Creek, not only the Germans. As Richman(1916:759) notes:

> The following little statement concerning these Christmas entertainments appeared in the Hancock Democrat on December 30, 1880:
>
> "At the German Lutheran Church, under the superintendence of Rev. J.G. Kunz, the Christmas tree and the appropriate declamations and the Christmas songs, and the extra large amounts of presents on the occasion, was surely the greatest affairs in Hancock County. This congregation is the most numerous in membership and wealth, and their

> members are very liberal in their donations for church and school purposes and have celebrated Christmas in the greatest manner imaginable , which would have been a credit to a metropolitan city, as it is much credit to the church and its worth minister and will bear imitations."

Richman (1916) also describes the creation of a German Cornet Band. It was not a successful endeavor and they played just a few years together. This was probably due to the fact that most of its members were also laboring hard on their farms.

Acculturation

Inscriptions on grave stones and the layout of the actual grave (or the none-existence of it) can provide valuable clues about the acculturation process using variables like name changes, language of epitaphs, changes in the frames or curbs outlining graves as well as signs of plants within the frame. By the same token, these variables are also used to argue the distinct character of German cemeteries in comparison with others.

For instance, the gravestones featured in the following pictures all display German language in one way or another. Some only use the German word *Mutter* and *Vater* in order to identify their parents and are likely to be one of the pioneers (Figure 72). Other graves feature the words *geboren* and *gestorbe*" plus dates of birth and death (Figure 73), or feature the epitaph: *Hier ruht in Gott* (Here rests in God) and then the name (Figure 74). This clearly identifies their ethnicity, but also leads us to believe that their acculturation only took place to a certain extent.

Figure 72. Tombstone from Schildmeier Cemetery, a recognized pioneer cemetery, showing *VATER UND MUTTER.*

Figure 73. This gravestone at the Schildmeier Cemetery of one of the Schildmeier family members shows the abbreviation for *geboren* (*geb.*) and *gestorben* (*gest.*).

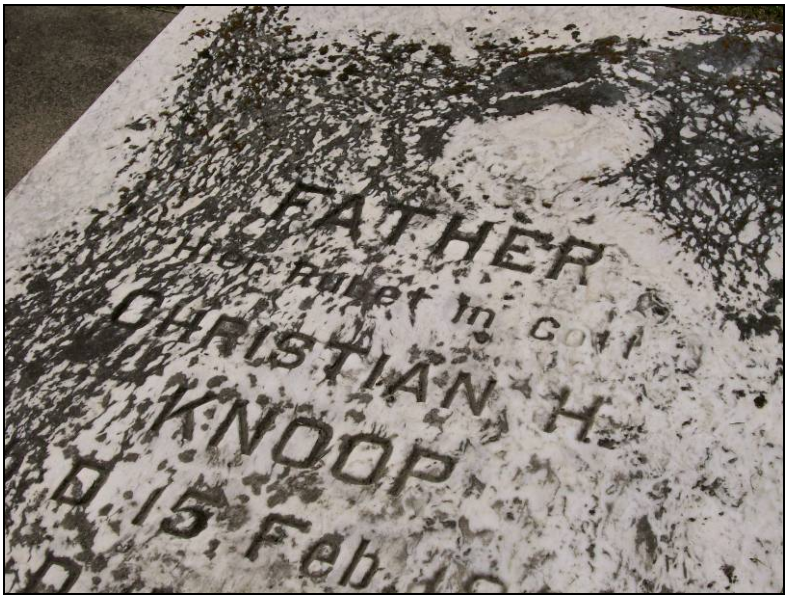

Figure 74. This grave stone is particularly interesting because of its mix of English and German. Father is in English and immediately below is the epitaph in German *Hier ruht in Gott* (Here rest with God) and then the name.

Other grave stones, like the one below embrace the German language even more (Figure 75). It states in a written out format that the person died on the 17th of December 1875 on her 59th year of life.

Figure 75. Photo tombstone at the former German Lutheran Church now called Zion Church.

Two of the above individuals died prior to 1880. Unfortunately a lot of grave stones cannot be read any more because the engravings are weathered. One could assume that those immigrants who died prior to 1880 still wanted to be identified mainly as German; their grave inscriptions should identify them as “Germans”. This makes sense since they were likely among the earlier immigrants who came to Sugar Creek around 1835.

The language of the church service represents another good indicator for how long immigrants hang on to their language. As stated before, the picture of the grave stone above was taken from the cemetery that belongs to the Zion Church (the German Lutheran Church). Richman (1916:758) notes that this congregation held church services in German up until 1902 and after that once a month one service was held in English. Unfortunately, many of the grave stones in this cemetery have been replaced more recently.

The following image displays an astonishing feature (Figure 76). Right behind the newer grave marker one can see two grave size slabs on the ground. They both feature regular grave inscriptions. This practice can also be observed in grave yards in Germany. Some graves there will have a stone slab covering the grave (the frame of the actual grave). This is often the practice in Germany in the absence of immediate family to take care of a grave. It means less work in grave maintenance, since Germans still tend graves regularly; plant live plants and follow the seasonal cycle.

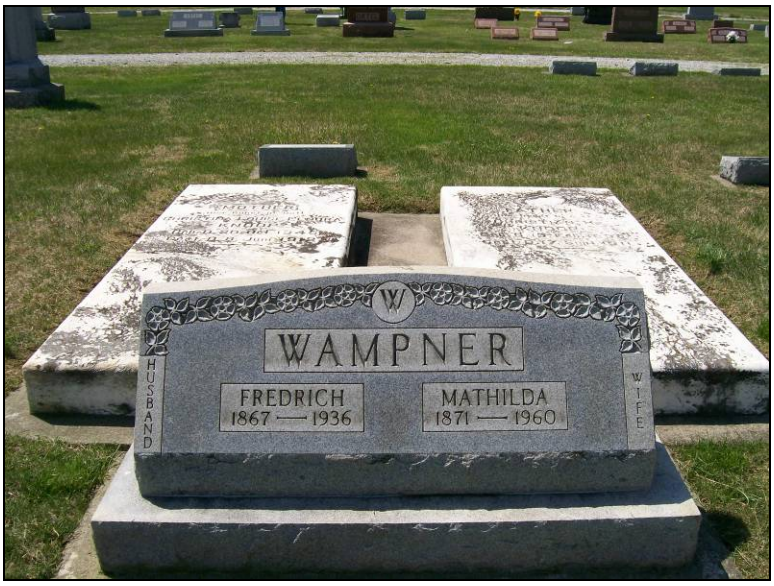

Figure 76. Zion cemetery showing grave slabs.

Another interesting feature is the mix of languages in the inscription. Father and mother are in English. The epitaph, however, is in German, *Hier ruht in Gott*… (Here rest in God/peace…) followed by the names and dates (also using German). These individuals died in the mid 1900s. The family name was Knopp. The new grave appears right before it and it could be a descendent of the Knopps.

The next grave also shows this practice, but this image was taken from the Schildmeier cemetery (Figure 77). In contrast to Figure 76, these slabs are newer granite slabs and were probably replaced by the descendents. It is noteworthy though that this particular practice was still important to the descendents. After all they could have planted grass and just replace the head stone.

Figure 77. Schildmeier cemetery showing new grave slabs.

One more image chosen from the Schildmeier cemetery displays a grave where the frame can still be recognized (Figure 78). The peonies planted at one point still mark the original outline. A new head stone marks this grave as well. At a German grave yard, the head stone would be placed differently. The head stone would be turned so that the inscription faces the peonies. The descendents who have placed the grave stone were probably unfamiliar with the practice, or they wanted to align the head stone with the other head stones.

Figure 78. Plantings within the grave frame.

The next picture comes from the Schramm family cemetery (Figure 79). There one can clearly see the grave frame or curb and the plants within the frame. Again, this is a German practice; live plants on a grave. The image clearly show the raised frame and the plants within. The yucca plants inside the frame could be original. Jacob Schramm and his wife, his sons and their wives are buried there. For a complete account of who is buried there would require further inquiry.

Figure 79. Plantings and grave curb still evident at the Schramm family cemetery.

Schramm, in his letters, indicated several times that he planned to go back to Germany in 7 or 8 years, after he had made some financial gains (Vonnegut 1935). This never materialized. He did, however, stay in touch with his roots, brought all his books, taught his children from these books, and complained in his letters how he would never really master the English language. It seems only natural that Schramm, a pioneer who is mentioned both by Richman and Binford as a first settler of Sugar Creek, would stick to German traditions (in this case the burial practice) more than other settlers. At the same time, other pioneers did not follow those practices (stone slab over the grave, or frame around the grave with plants inside), only some did. Again, the question one might ask is why some did and why others did not? Also, why did some choose German as the language of the inscription and others did not? Several factors could play a role.

Economic reasons could be one factor. It is clearly more expensive to have a grave framed, or have a huge stone slab covering the whole grave. It requires a lot more material and therefore increases the cost of the burial. The length of the inscription also increases the price. Name and date inscriptions are clearly the cheaper option. An additional epitaph adds to the cost. Those German settlers whose graves identify them as German must have had more resources to their disposal. Therefore theses graves do not provide any conclusive evidence in terms of acculturation. They do, however, provide a significant marker of ethnic identity.

Age represents another variable in defining the rate of acculturation of a group of people. Older Germans might have had a more difficult time adjusting (needing more time) then younger people. This is true in terms of language and traditions. It becomes harder to adopt another language with progressing age, at least for most individuals, and memories of the home country are not easily forgotten when one has spent twenty of thirty years there. In addition, almost all the German immigrants settled in one area, Sugar Creek Township. They kept among themselves, founded churches, had church services in German, and relied for many services on each other. Any acculturation process among first settlers under these circumstances would have been rather slow unless a particular individual would choose otherwise (move away, rapidly become fluent in English, interacting on a constant basis with settlers of a different ethnic background).

Archaeological Remains

Based on the historic research of Hancock County and other archaeological study units that have investigated German settlements (Brown and Killen 1982:125), a list of known or excepted cultural resources was compiled. These resources include: schools, churches, cemeteries, farmsteads, residences, communities, industrial buildings, newspaper office and newpapers, stores, civic structures such as bandstands, monuments, sites of historic events without structures, and domestic artifacts. A review of the historic accounts of these resource types is provided below.

Churches

Binford (1882) refers to the Albright Church as the first church. He states the church was organize in 1836 in a block house "three miles west of Palestine" (Binford 1882:296-297). He also states that the immigrants came from Hamburg and the congregation for the most part poor but rich spiritually (Binford 1882:297). This church is likely the same Albright German Church referred to by Richman (1916:760) as a frame structure "on the east side of the county line, just below Julietta". However, he gives a date of 1866 for the structure. The 1887 Atlas of Sugar Creek Township (Griffing 1976) shows an Evangelical Church on Fred Schmoe's property. Fred Schmoe is listed by Richman (1916:760) as one of the faithful members of the Albright Chruch. About 1895, services ceased to be held and the church was sold and moved away (Richman 1916:760).

Richman (1916: 755) attributers another early church to a Prussian immigrant group as this little log building was on the west line of Section 24, Township 15 N, Range 5 E. More specially, it was located on the west half of the southwest quarter of Section 24, Range 5 E, "on the east side of the road, immediately south of the Cincinnati, Hamilton & Drayton railway and just across the highway from the present Schildmeier cemetery" (Richman 1916: 756). Worship in this church continued until 1851 and the Schildmeier cemetery was specifically assigned to Christian Schildmeier and his heirs (Richman 1916: 1856).

New land for a church, parsonage, and a school house was purchased in 1848 by Maria and Anton Frederich Wishmeier for $150.00. A parsonage and a log school house were built that same year, but the new church was not built until 1859 (Richman 1916: 756). The location is noted in Richman as "near the middle of the north line of section 24 range 5" (Richman 1916: 756). Richman further identifies those associated with the church, parsonage and school as follows.

> The grantees named in the deed from Wishmeiers are Anthony Reasoner, Charles Henry Reasoner, Christian Rethmeier, William Lewis Reasoner, Christina Spilker, Charles Rethmeier, William Brier, Anthony F. Wishmeier, Anthony F. Rabe, Charles Miller, Gottleib Ostermeier, Anthony Eikman and Christian Schildmeier. The deed recited that the real estate is conveyed "as a site for a school house and parsonage and it is stipulated between the parties respectively that if any other person of the neighborhood shall join in the association or company, and pay their proportion for the land, and have their names recorded in a book kept for that purpose, then in that case those persons so joining shall be joint sharers in the real estate (Richmond 1916: 756).

There is a possibility that certain names of the above sharers of the real estate changed while living in the "New World." For example, Reasoner formerly have been *Reisser* or *Roessner*. The first name, Charles, could have been "Karl." There is also a chance of spelling mistakes/adjustments. Richman notes: Gottleib instead of "*Gottlieb*"; the vowels *ei* were switched. He further notes the last name Wishmeier beginning as in the English "wish" instead of the German *wisch*. The *c* is dropped. Of course, there is a chance that the immigrants themselves changed their names.

According to Binford (1882:297), in connection with the school house on the new grounds, an organization of this group (congregation) was known as the *German School Society*. The purpose was to supply children with the facilities of a secular education (Binford 1882: 297). In short, the church grounds served the dual purpose of teaching the mind and the spirit. Rev. J.G. Kuntz took charge of the church in 1841, before the new church was built. He first preached once a month, then every 3 weeks (Binford 1882: 297). The first resident pastor was Rev. A. Brandt. He taught and preached, but soon the relationship between him and the congregation faltered. Apparently, Brandt filed suit against one of the members of the congregation, but it was defeated twice by the Justice of the Peace (Richman 1916: 757). A split in the church occurred thereafter and several members of this congregation moved to a German Church west of Cumberland.

No structures were identified at the location of the Albright Church and the area is presently an agricultural field. No extant structures were evident at the church across the road from the Schildmeier Cemetery. The property is currently agricultural but owned by a development company. The old church and schoolhouse at the Zion church have been replaced by modern buildings and still function as a school and church. The Schildmeier and Zion cemeteries are extant and were reviewed above.

Residences

Some of the first German settlers were Carl Julius Leopold Albert von Bonge and Albert Lange. Bonge was a nobleman from Prussia. It is not exactly clear where the Bonge and Lange residencies were located. In fact Richman (1916) only records the location of entry into the township, which seems rather odd. Bonge “entered the southeast quarter of section 12, range 5. A companion, Albert Lange, who was also banished by Prussia came with Bonge and entered the northeast quarter of section 14” (Richman 1916: 752). Further notes on entries/residences include:

> About 1833 Anton Wishmeier came from Minden-on-the-Weser, in East Prussia, and settled in the north central part of section 24, township 15, range 5. His buildings stood about eighty rods southwest of the present German Lutheran church. A tree or two of the old orchard may still be standing (Richmond1916: 753).

Indeed, it was Wishmeier and his wife who purchased the grounds for the Lutheran Church, school house and parsonage in 1848. Remains of Wishmeier’s estate were not researched.

Ludwig Richman and about 15 other young Germans from Minden-on-the-Weser also arrived in Sugar Creek Township in 1835. They originally had set out to settle in Illinois, but milk sickness was rampant in that area at the time, so they decided to settle in Indiana after they were acquainted with Anton Wishmeier:

From this point they found Wishmeier, and the remaining members of the company made other homes in Sugar Creek Township. Among them were Christian Spilker, William (Luke) Rosener, Christian Steinmeier, Sr., and his three children; Christian Steinmeier, Jr., and his two daughters, Louise and Sophia; Lewis Richmann and Louisa Bohne, and probably one or two others. Louise Bohne was married to Lewis Richmann soon after they reached their destination. She is familiarly remembered as "Grandma" Richmann throughout the western and southern part of Sugar Creek Township (Richman 1916:754).

It is worthwhile noting that William (Luke) Rosener might be the same individual as William Lewis Reasoner mentioned later in Richman as a sharer/deed holder of the German Lutheran Church. This would mean that some immigrants changed their names within just a few years of living in their new country.

Jakob Schramm (or Jacob) arrived in Sugar Creek in 1835. He had an agent buy land for him in Section 12, Township 15 North Range 5 E (Richman 1916: 754). The Schramm residence still exists. Some of the original buildings, e.g. grainery, still stand. Images of the residence as well as newer and original buildings are shown in Figure 80. In addition, the family cemetery is still maintained. A descended of Jakob Schramm, Paula Schramm, lives on the original grounds with her 91 year old mother. She cares for the cemetery.

Figure 80. Schramm family farm.

Additional German immigrants of that time period include: France Landwehr, Christian Schildmeier, Christina Miller, Anton Eickman, C. Henry Rosener, Fl. L. Christian Rosener, Anton Fink, Gottlieb Ostermeier, Christina F. Hoff, Anthony Kirkhoff, Charles Klopper, Wilhelm Langenberger, Christian Knoop, William Borman, Carl Oswald, Adam Merlau, Benjamin Rother, Carl Breuer, Wilhelm Ruschhaupt, Anton Meier, John Greim, Conrad Gundrum, George Lantz, Ernest H. and Ernst W. Faut (Richmond1916:754).

Some of the surnames of the German immigrants are displayed on the 1887Atlas of Sugar Creek Township (Griffing 1976). One line of further investigation would be survey these properties.

Conclusions and Recommendations

This project provided a brief review of German immigration, contributions and acculturation in Hancock County. The types of cultural resources that are or are potentially present in the county was also reviewed. However, this investigation only scratched the surface of the potential for developing a German Study unit. To continue the exploration of German Settlement, census records for the county should be examined. The cemeteries should be more thoroughly documented. More family cemeteries should be visited. Church records should be examined. Archaeological surveys of farmsteads and residences should be conducted. Unfortunately, Sugar Creek Township is developing at a rapid rate and many of these potential resources could be lost.

COLLECTIONS ANALYSIS

Introduction

Analysis of three private collections, the Hancock County Historical Society collection and a collection curated at Ball State were conducted during this project. The private collections contain variable information for the county. Over 40 archaeological sites from the county have been recorded from private collections and some of this information was updated. Even without site specific information, all of the collections reviewed provided some indication on the prehistoric settlement in the county.

Methods

[redacted], a member of the Upper White River Archaeological Society, has an extensive collection from Hancock County and his collections have already been designated as site numbers 12-Ha-106 to 138 (McCullough and Wright 1997). [redacted] experience and contacts in the county were instrumental in completing this portion of the project. [redacted] collections were examined once again to document new artifact information and document the raw materials of his collection. His collection was documented and photographed at the ARMS lab. New site forms were completed as necessary.

The Hancock County Historical Society has an extensive collection of artifacts. The artifacts from sites 12-Ha-3 and 4 are housed at the Historical Society and were examined. The specific provenience of other artifacts from the county was not known. The collection was documented and photographed at the Historic Society. Raw materials were not identified. Updated sites forms for 12-Ha-3 and 4 were completed.

The other two artifact collections examined could only be identified to general locations but were known to come from Hancock County. The artifact collections were documented and photographed at the owner's residence. Raw materials were not identified.

In addition to the private collections, a collection from a compliance survey in the Big Blue River Valley was reanalyzed. The survey was conducted in 1976 by Gulf South Research Institute (Saltus 1976). Six archaeological sites were recorded in Hancock County from the survey (12-Ha-5/37, 6a/38, 6b/39, 7/40, 8a/41, 8b/42) and the artifacts were curated at Ball State. The collection was re-classified and raw materials were identified according to the laboratory methods described in the Pedestrian Survey section.

All photographs of collection are on file at ARMS under accession #06.61.

Results

Since each collection was obtained from different sources and contained different levels of information they were discussed separately.

[redacted] Collection

[redacted] has been collecting artifacts since 1986. His collection provides a wealth of archaeological information, because [redacted] records the location of all the artifacts and maintains a catalog. The majority of his collection is from Green Township, but a few sites are from Brown and Jackson Townships. During this project, [redacted] brought most of his collection to the ARMS lab for analysis. Of the 32 archaeological sites previously recorded from his collection, 12-Ha-106 to 138, we correlated the collection to 20 sites and recorded one new site (Appendix I). Table 34 provides a summary of his collection. A complete listing of artifacts and raw materials by site are reported in Appendix I. In addition to the identified points, the collection also contained six unmodified flakes, 44 edge modified flakes, three cores, one bipolar artifact, one bifacial endscraper, three scrapers, 35 endscrapers, 11 perforators, 170 bifaces, 146 point fragments, 21 unclassified points, two slate discs, and two gunflints,. [redacted] does have a collection of ground stone tools, but these were not reviewed.

Table 34.
[redacted] Collection

Cultural Period	Projectile Point Type	No.
Late Woodland	Ft. Ancient	1
	Madison	22
	Jack's Reef	5
	Unclassifed Late Woodland	2
Middle Woodland	Middle Woodland Expanding Stem	24
	Snyders	12
	Afffinis Snyders	1
	Unclassified Middle/Late Woodland	1
Early Woodland	Adena	3
	Cresap	2
	Early Woodland Contracting Stem	1
	Kramer	6
	Meadowood	2
	Robbins	3
Late Archaic	Brewerton Corner Notched	36
	Brewerton Eared	3
	Late Archaic Barbed	3
	Etley	1
	Karnak	4
	Late Archaic Stemmed	18
	Lamoka	13
	Matanzas	44
	McWhinney	3
	Mo-Pac	13
	Motley	3
	Normanskill	3
	Riverton	10
	Saratoga	2
	Susquehanna	1
	Table Rock	1

	Vosburg	1
	Unclassified Late Archaic/Early Woodland	1
	Unclassified Late Archaic point	27
Middle Archaic	Benton Stemmed	1
	Eva	1
	Godar	21
	Raddatz	12
	Unclassified Middle Archaic point	1
Early Archaic	Big Sandy	1
	Calf Creek	1
	Charleston Corner Notched	2
	Decatur	7
	Decatur-like	1
	Graham Cave	1
	Hardin Barbed	4
	Kanawha	7
	Kessell	2
	Kirk Corner Notched	35
	Kirk Stemmed	9
	LeCroy	2
	LeCroy/Kanawha	1
	Lost Lake	6
	Lost Lake/Calf Creek	1
	MacCorkle	6
	Palmer	8
	Rice Lobed	1
	St. Albans	3
	St. Charles	9
	Thebes	28
	Unclassified Bifurcate	6
	Unclassified Early Archaic	64
	Unclassified Early/Middle Archaic	1
Late Paleoindian	Hi-Lo	4
	Planview	1
	Scottsbluff	2
Paleoindian	Fluted Paleoindian	3
	Unclassified Paleoindian	3

[redacted] collection contained large numbers of Early and Late Archaic points. While this distribution was not surprising, the number of Thebes Cluster points was unexpectedly high. That 15 of the Thebes points were recovered from a single site, 12-Ha-137, was even more unexpected (Figure 81). The large numbers of Kirk Corner Notched and Decatur points was also high, but were not as concentrated at one site. Site 12-Ha-137 did contain seven Kirk Corner Notched points and site 12-Ha-138 contained eight. Site 12-Ha-137 also contained seven Godar points. The collection also contains 13 Paleoindian points. [redacted] repeated survey of the site areas has provided more depth and information than is typically gathered in one time compliance surveys.

Figure 81. Thebes points and bifaces from site 12-Ha-137.

Site forms were updated for eight of the sites: 12-Ha-107, 117, 119, 128, 130, 135, 137 and 138. A new site located south of 12-Ha-138 was given site number 12-Ha-364. The other site forms were not updated due to confusion with the original designations (McCullough and Wright 1997). All of the site areas should be surveyed to determine artifact distributions and site boundaries.

Hancock County Historic Society Collection

The Hancock County Historic Society houses a general collection of prehistoric artifacts donated from the county but without specific proveniences. A large collection was donated to the Society from two recorded archaeological sites, 12-Ha-3 and 12-Ha-4. These artifacts were collected between 1976 and 1992 and donated by Esther Knoop Bodkins.

The general collection contained 122 projectile points (Table 35). As expected the majority of the collection contained Late and Early Archaic projectile point types. While the majority of the general collection was believed to be from Hancock Co., at least one artifact was labeled Orange County. In addition to the identified projectile points, the collection also contained one piece of red ocher, 30 bifaces, 7 perforators, 2 point fragments, 3 unclassified points, and several ground stone artifacts. The collection

also contained a copper point (Figure 82). The copper point is similar in style to a chipped stone Orient Fishtail type found in New York (Ritchie 1971:39). The point may therefore date to the Late Archaic/Early Woodland transition.

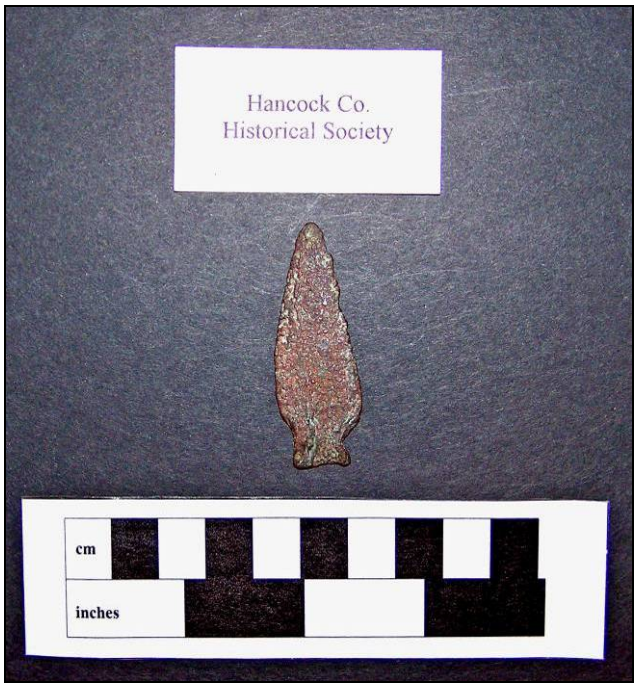

Figure 82. Copper point in the Hancock County Historical Society Collection.

Table 35. General Historical Society Collection		
Cultural Period	Projectile Point Type	No.
Late Woodland		
Middle Woodland	Copena	1
	Middle Woodland Expanding Stem	6
	Snyders	5
Early Woodland	Adena	3
	Cypress	1
	Kramer	1
	Robbins	4
Late Archaic	Brewerton Corner Notched	7
	Brewerton Side Notched	3
	Bottleneck	1
	Late Archaic Stemmed	10
	Lamoka	3
	Ledbetter	1
	Matanzas	5
	McWhinney	11
	McWhinney/Karnak	1
	Motley	2
	Riverton	2
	Susquehanna	1
	Table Rock	1
	Turkey Tail	1
	Unclassified Late Archaic point	3
Middle Archaic	Raddatz	10
	Unclassified Middle Archaic point	1
Late Archaic	Hardin Barbed	2
	Kirk Corner Notched	14
	Kirk/Decatur	1
	Lake Erie Bifurcate	1
	Lost Lake	5
	MacCorkle	2
	St. Charles	3
	Thebes	9
Late Paleoindian	Hi-Lo	1

Site 12-Ha-3 was a cache of bifaces and cores (Figure 83). Approximately 120 pieces were recovered. While not examined microscopically, the majority of the raw materials in the cache were similar to raw material from Western Orange County. Indian Creek and Fall Creek were also identified as well as one core of Attica. The majority of artifacts were more core-like. The bifaces were made from Fall Creek. The site should be resurveyed to determine the site boundaries.

Figure 83. Core and biface cache from site 12-Ha-3.

Site 12-Ha-4 is a multicomponent site dating between late Paleoindian to Late Woodland (Table 36). This collection contained 161 projectile points. In addition to the identified points, the collection contained 46 bifaces, 76 point fragments, one endscraper and a few ground stone artifacts. The site should be resurveyed to determine the site boundaries.

Table 36. Site 12-Ha-4 Collection		
Cultural Period	Projectile Point Type	No.
Late Woodland	Madison	1
	Jack's Reef	1
Middle Woodland	Middle Woodland Expanding Stem	8
	Snyders	8
Early Woodland	Adena	1
	Cresap	1
	Early Woodland Contracting Stem	1
	Kramer	1
	Robbins	6
	Early Woodland Stemmed	1
Late Archaic	Brewerton Corner Notched	26
	Brewerton Side Notched	18
	Genesee	1
	Late Archaic Stemmed	7
	Lamoka	1
	Matanzas	5
	McWhinney	2
	Motley	1
	Riverton	8
	Table Rock	3
	Late Archaic point fragments	1
	Raddatz	14
Early Archaic	Big Sandy	2
	Decatur/Palmer	1
	Kanawha	1
	Kirk Corner Notched	14
	Possible Kirk	1
	Lost Lake	1
	MacCorkle	4
	St. Charles	1
	Thebes	7
	Unclassified Bifurcate	2
	Unclassified Early Archaic points	8
Late Paleoindian	Hi-Lo	3

Collection No. 3

Collection No. 3 contained 22 projectile points (Table 37). All time periods except for Middle Archaic were represented in the collection. The collection was built over several years of farming by the collector and his family. The collection is reported to be from the central region of the county in [redacted]. Survey Areas 5 and 6 covered some of the area where this collection was made.

Table 37. Collection No. 3		
Cultural Period	Projectile Point Type	No.
Late Woodland	Ft. Ancient	1
	Madison	1
Middle Woodland	Middle Woodland Expanding Stem	4
	Snyders	4
Early Woodland	Adena	3
	Kramer	2
	Robbins	5
Late Archaic	Brewerton Corner Notched	4
	Brewerton Side Notched	3
	Etley	1
	Lamoka	2
	Matanzas	3
	McWhinney	1
	Mo-Pac	2
	Susquehanna	1
	Trimble	1
	Unclassified	1
	Point fragment	5
Middle Archaic		
Early Archaic	Big Sandy	1
	Charleston Corner Notched	2
	Kanawha	1
	Kirk Corner Notched	2
	MacCorkle	6
	Rice Lobed	1
	Stilwell	1
	Thebes	2
	Unclassified Bifurcate	1
	Point fragment	3
Late Paleoindian	Hi-Lo	2

In addition to the projectile points, the collection also contained six bifaces, one point fragment, one perforator, one full grooved axe, one ¾ grooved axe, one anvil, and one muller, three pestles, two roller pestles.

Collection No. 4

Collection No. 4 contained 407 projectile points (Table 38). The collection was built over several decades of farming by the collector. The collection is reported to be from the north east region of the county in [redacted] The collection area included Survey Area 12 and site 12-Ha-331.

Table 38. Collection No. 4		
Cultural Period	Projectile Point Type	No.
Late Woodland	Madison	21
	Raccoon Notched	1
	Unclassifed Late Woodland	2
Middle Woodland	Middle Woodland Expanding Stem	12
	Snyders	21
Early Woodland	Adena	3
	Cresap	2
	Gary Contracting Stem	2
	Kramer	6
	Robbins	12
	Early Woodland Point fragment	1
Late Archaic	Brewerton Corner Notched	43
	Brewerton Eared	1
	Brewerton Side Notched	1
	Buck Creek Barbed	3
	Delhi	2
	Karnak	4
	Late Archaic Stemmed	28
	Lamoka	5
	Ledbetter/Pickwick	3
	Matanzas	41
	McWhinney	15
	Mo-Pac	12
	Motley	3
	Pickwick	1
	Riverton	3
	Table Rock	1
	Unclassified Late Archaic/Early Woodland	5
	Unclassfied Late Archaic point	7
	Late Archaic point fragments	50
Middle Archaic	Godar	9
	Raddatz	7
	Stanly Stemmed	2
	Unclassified Middle Archaic point	1
Early Archaic	Big Sandy	2
	Calf Creek	1
	Decatur	2
	Graham Cave	1
	Kanawha	1
	Kessell	1
	Kirk Corner Notched	11
	Kirk Serrated	1
	Lost Lake/Calf Creek	5
	MacCorkle	5
	Rice Lobed	5
	St. Albans	3
	Stilwell	2
	Thebes	4
	Unclassified Bifurcate	1
	Point fragments	31
Late Paleoindian	Hi-Lo	1

In addition to the projectile points, the collection also contained four unclassified points, 41 point fragments, 12 bifaces, 71 biface fragments, one scraper, eight cores, numerous chert flakes, four hammerstones, one muller, two anvils, three pestles, three ¾ grooved axes, six full grooved axes, three adzes, six celts, two expanding center bar gorgets, three gorgets, one winged bannerstone and one other chipped stone fragment.

The collection contained higher numbers of Early and Middle Woodland projectile points than expected, particularly Robbins and Snyders points. The two expanding center bar gorgets add to the Early and Middle Woodland presence. Unfortunately, it is not know if these components were concentrated at particular locations.

Gulf South Collection

The Gulf South collection curated at ARMS is from a compliance survey in the Big Blue River Valley (Saltus 1976). Unfortunately, the report for this project could not be located, so the exact project area and size is not known. Six archaeological sites were recorded from the survey and both IU and Ball State assigned the collection site numbers: 12-Ha-5/37, 6a/38, 6b/39, 7/40, 8a/41, 8b/42. The pedestrian survey component of the HPF project could not obtain permission to survey within the valley. This collection, therefore, provided important information on the archaeological resources in this setting.

Over 300 prehistoric artifacts and six fire-cracked rocks were identified within the collection. Table 39 provides a list of the artifacts recovered by site and category. Artifacts are listed by individual site in Appendix I. The sandstone gorget recovered from site 12-Ha-6a/38 was unique (Figure 84). The gorget was a coffin shaped type associated with a Glacial Kame component (Converse 1978:52). These styles typically have three holes instead of two holes and are normally made from banded slate. A Glacial Kame component has not been recognized for Hancock County, but references from Henry County (Heilman 1969, Redding 1892, Moore 1901 in Swartz 1968) and Shelby County (Converse n.d.:138) suggest the presence of Glacial Kame in the region. Kames are known from the southwestern part of the county, but none have confirmed archaeological deposits. A local resident did report bracelets and arrowheads were found associated with a kame to the southwest of New Palestine.

Figure 84. Sandstone gorget from site 12-Ha-6a/38.

Table 39.
Gulf South Artifacts

Site No.	Category	No.	Site No.	Category	No.
12-Ha-5/37	Unmodified flakes	10	12-Ha-7/40	Unmodified flakes	5
	Edge modified flakes	17		Edge modified flakes	3
	Core	1		Cores	3
	Bipolar	1	12-Ha-8a/41	Unmodified flakes	35
	Bifaces	5		Edge modified flakes	22
	Point fragment	1		Cores	6
	Snyders	1		Bipolar	1
	Lamoka	1		Bifaces	2
	Other chipped stone	1		Point fragments	4
12-Ha-6a/38	Unmodified flakes	8		McWhinney points	3
	Edge modified flakes	18		FCR	1
	Core	7	12-Ha-8b/42	Unmodified flakes	21
	Endscraper	1		Edge modified flakes	28
	Perforator	1		Cores	7
	Biface	1		Endscraper	1
	Point fragments	3		Perforator	2
	Jack's Reef point	1		Bifaces	3
	LeCroy point	1		Point fragments	3
	Anvil	1		McWhinney point	1
	Gorget, sandstone	1		Other chipped stone	1
	FCR	5	Near 12-Ha-6a/38, 6b/39, 7/40	Unmodified flakes	2
12-Ha-6b/39	Unmodified flakes	20		Edge modified flakes	7
	Edge modified flakes	19		Core	1
	Cores	3		Bifaces	3
	Graver	1			
	Point fragment	1			

This collection did differ somewhat from the pedestrian survey results. First, more tools (endscrapers, perforators and a graver) were recovered by the Gulf South project. Second, the sites appear to have a higher artifact density. Raw materials identified from the chert artifacts were similar to those recovered by the pedestrian survey and included: Fall Creek, heat treated Fall Creek, Laurel, heat treated Laurel, Indian Creek, Attica, Upper Mercer, Wyandotte and meta-quartzite.

The sites identified during the Gulf South project should be re-surveyed to assess and update their archaeological potential.

Discussion

The collection analysis provided additional archaeological information for Hancock County. The analysis reviewed 28 previously recorded archaeological sites and recorded one new site. The reanalysis provided a quantification of artifact types and raw materials present for these sites. Sites 12-Ha-4, 137, 138 were multicomponent and provided large numbers of artifacts. Site 12-Ha-138 contained a large Thebes

component. These sites were atypical of the dispersed settlement types in the till plain-valley edge settings encountered in the pedestrian survey. Site 12-Ha-3 is the only artifact cache currently documented for the county.

The collection analysis provided additional evidence of Hardin Barbed points in the county. Two Hardin Barbed points had been previously documented, the pedestrian survey encountered one and the collection analyses documented four more.

The Gulf South collection indicated that sites in the Blue River valley may have a higher artifact density than most of the sites documented elsewhere in the county. The Blue River valley contains the largest river and valley within the county. This different environment likely contained a wider variety of floral and fauna sources than were available in till plain and smaller drainage and that likely influenced prehistoric settlement model.

GIS

Introduction

To assist in the management of archaeological resources in Hancock County, archaeological data were incorporated in ARCGIS 9.0 database. GIS is growing in popularity for management, analysis and research in archaeology. The ability to have a database linked to graphic displays and have query and analysis functions makes GIS an asset to archaeology.

Methods

Existing GIS compatible information consisting of digitized topographic maps, aerial photographs, soil surveys, hydrologic and geologic information was downloaded from several sources: Center for Advanced Applications in GIS at Purdue University (danpatch.ecn.purdue.edu/~caagis/ftp/gisdata/data.html), Indiana Spatial Data Portal at Indiana University (www.indiana.edu/%7Egisdata/isdp-dl/map/m1000.html), Indiana GIS Atlas (129.79.145.7/arcims/statewide%5Fmxd/viewer.htm), SSURGO Soil Data Mart, and Engel et al. (n.d).

The township maps contained in the 1887 atlas of Hancock County (Griffing 1976) were also integrated as GIS layers. The locations of residences, early schools, mills, tanneries, other industries and cemeteries are displayed on the township maps. The maps were scanned and "georeferenced" based on existing topographic maps. A point layer was created for school houses and industrial sites. While these resources may not have precise locations, the areas where historic resources are reported can be identified as sensitive for planning purposes. The locations of schools, mills, brickyards and other industries identified on the township maps were investigated during the windshield survey. Confirmed sites were added as a point layer.

Archaeological site locations and areas surveyed were incorporated into a GIS layer in several ways. The locations of previously recorded sites and survey areas were transferred from topographic maps and converted to polygon shapefiles. A separate layer was maintained for previously recorded sites and previously surveyed areas. Associated attributes recorded for the site layer include: site number, component, site type, soils, landform and recommendations. Associated attributes recorded for the survey areas included a bibliographic reference (Appendix B). Site locations and areas surveyed during this project were mapped according to the GPS site coordinates collected during the field survey. The information was then incorporated into ARCMAP and the locations were converted to polygon shapefiles. Associated attributes recorded for the site layer were consistent to that recorded for previously recorded sites.

Results

All GIS information was copied to separate CDs and submitted to DHPA. The project was also published to an ArcReader file for easy use. The most tangible result is the inclusion of archaeological sites and survey areas in one resource. This database can be utilized by DHPA and other professionals interested in the management of the cultural resources of Hancock County.

DISCUSSION

The main goals of this project were to increase the site database, to construct a cultural chronology, to refine settlement patters of the precontact era and to investigate early Euro-American settlement within the county. To achieve these goals and guide this project, several research questions were proposed. The research questions are restated below and followed by a discussion of the data acquired during this project.

1. What is the cultural chronology for Hancock County?

The survey documented Early Archaic through Late Woodland era sites (8000 BC to contact). The majority of prehistoric sites were of undefined age. Most of the sites were small lithic scatters or isolated finds.

While the survey did not recover any Paleoindian artifacts from the county, several Paleoindian points were identified from local collections. Both the earliest fluted forms and later unfluted lanceolate forms were identified. The known occupation for Hancock County, therefore, encompasses the range of human habitation for pre-contact in the Midwest. This same range is documented in surrounding Till Plain regions (Cochran 1994:7)

No identified Protohistoric or early Historic Native American occupations were encountered during the survey. Local residents and early county histories reported a Delaware presence in the county (Skvarenina n.d).

A potential Pioneer occupation and other early Historic sites were encountered during the survey. However, the majority of the Historic resources encountered were late 19th to early 20th century occupations.

2. What is the settlement pattern for different cultural contexts?

The survey only encountered 20 archaeological sites that contained diagnostic prehistoric material. The Late Archaic sites showed the greatest variability in landuse. Late Archaic sites occurred in till plain, floodplain, outwash terrace and outwash plain settings. Early Archaic sites were encountered in the same settings except from outwash plain. Late Woodland sites and the Early Woodland site were documented in till plain and outwash terrace settings. Middle Archaic and Middle Woodland sites occurred in till plain settings.

From previously recorded sites, 54 sites had identified prehistoric components. A similar trend of landuse was indicated. Early and Late Archaic sites were found in on all landforms. Middle Woodland and Late Woodland were also encountered on every landform, but the till plain had a higher frequency of use. Early Woodland sites occurred on till plains and outwash terraces. Middle Archaic favored till plain use, but overlapped with the outwash plain.

The combined data presently available for Hancock County is consistent with settlement patterns discussed in the Background section of this report. The frequency and distribution of sites fits the known model for the Till Plain region. The only inconsistency occurs in the Middle Archaic period. Data from Hancock County suggest Middle Archaic populations favored the till plain upland settings, not valley edge settings as suggested by the regional culture history.

The majority (n=18) of Historic era resources were encountered in till plain settings. Three historic sites were found in outwash terrace settings, one site was encountered across a till plain and outwash terrace setting, one site was encountered across a till plain/floodplain setting and one small historic scatter occurred in an outwash plain setting.

3. Are Late Archaic sites found with the greatest frequency, followed by Early Archaic and Late Woodland as elsewhere?

Twenty-six diagnostic projectile points were recovered from the survey. Seven Early Archaic points (1 Hardin Barbed, 2 Charleston Corner Notched, 1 Palmer, 1 Wabash Diagonal Notched, 1 Kanawha, and 1 St. Albans) were recovered from seven different sites. One Middle Archaic Raddatz point was found. Ten Late Archaic points (5 Unclassified Late Archaic, 1 Karnak, 1 Riverton, 1 Late Archaic Barbed and 2 Matanzas) were recovered from nine sites. One Early Woodland Cresap point was found. Three Middle Woodland Expanding Stem points were recovered from three sites. And, five Late Woodland Triangular Cluster points were recovered from four sites.

The survey did find that Late Archaic artifacts and sites occur in the highest frequency, followed by Early Archaic artifacts and sites as the second highest frequency and Late Woodland as the third highest frequency of sites and artifacts. This is the same distribution pattern documented for other Till Plain regions (Cochran 1994:7-8).

4. What is the average site density within the county?

From surveys conducted prior to this survey, one site was encountered every 6.5 acres. This project encountered a slightly higher density of one site per 4.9 acres. These figures did not take into account environmental setting, landform or soil characteristics.

When site density figures were examined by landform, this project encountered one site per: 4.5 acres in the till plain, 4.5 acres in the floodplain, 4.3 acres in the outwash plain and 2.4 acres in the outwash terrace. In comparison to regional site densities (see Table 8), Hancock County is within the range of known site densities. In till plain settings, Hancock County is most similar to Henry and Hamilton County densities. Hancock County is closest in site densities to Hamilton County in floodplain settings and closest to Henry County in outwash plain settings. For the outwash terrace, Hancock County is most similar to site densities recorded in Madison County.

While similar to the region, the average site density of one site per 4.9 acres for Hancock County is lower overall to than other regions of the Till Plain (Cochran 1994:6). This lower site density may be influenced by soil drainage within Hancock County. In comparison to surrounding counties, Hancock County has a higher proportionate extent of very poorly drained Brookston soils and the lowest extent of Miami soils (see Table 2).

Within each of the landforms, the best drained soil had the highest density of artifacts. For the till plain on Miami series soils, one site per 2.5 acres was encountered. For the floodplain on Eel soils, one site per 1.3 acres was encountered. One site per 1.7 acres was encountered in the outwash plain on Whitaker soils and one site per 2.3 acres was encountered in the outwash terrace on Ockley soils. Very poorly drained soils such as Brookston in the till plain had one site per 10.1 acres and Sloan in the floodplain had one site per 14.0 acres.

5. Is prehistoric occupation more extensive and/or more intensive at the ecotones between the environmental zones?

An attempt was made to sample all landforms and ecotones between environmental zones; however, a stratified sample could not be fully attained due to a lack of access to some properties. As the survey progressed, the quantification of ecotones surveyed was not conducted per se. The acreage surveyed was not quite evenly divided between areas containing ecotones (42%) and those that were primarily till plain or very small amounts of non-valley outwash plains (58%). Table 40 shows the distribution of areas surveyed and site densities encountered by survey area.

Table 40. Ecotone Density			
Survey Area	Zone	Acreage	Site Density (1site:acres)
1	Till plain	6.1	6.1
	Outwash terrace	14.9	1.9
	Floodplain	5.4	0.9
	Total	26.4	2.0
2	Till plain	104.6	5.0
3	Till plain	39.9	3.1
	Outwash terrace	17.3	2.2
	Outwash plain	28.4	4.1
	Total	85.6	4.1
4	Till plain	56.9	11.4
	Outwash plain	3.3	1.7
	Total	60.2	12.0
5	Till plain	69.6	17.4
6	Till plain	7.2	7.2
	Outwash terrace	11.5	1.3
	Outwash plain	5.0	5.0
	Floodplain	4.7	4.7
	Total	28.4	2.6
7	Till plain	125	6.9
	Outwash plain	1.7	n/a
	Total	126.7	7.0
8	Till plain	21.4	3.1
	Floodplain	4.6	n/a
	Total	26.0	3.7
9	Till plain	24.0	4.8
	Floodplain	1.8	n/a
	Total	25.8	5.2
10	Till plain	21.8	4.4
	Outwash terrace	12.8	4.3
	Outwash plain	17.8	8.9
	Total	52.4	5.8
11	Till plain	17.6	3.5
	Outwash terrace	31.2	4.5
	Floodplain	23.5	11.8
	Total	72.3	5.2
12	Till plain	55.3	9.2
13	Till plain	43.4	6.2
14	Till plain	5.4	0.9
	Floodplain	4.6	4.6
	Total	10.0	1.7

For the Survey Areas 2, 4, 5, 7, 12 and 13 that contained no ecotones (till plain and till plain with small areas of outwash plain), the site densities ranged between one site per 5.0 and 17.4 acres. Survey Areas 1, 3, 6, 8, 9, 10, 11 and 14 that contained ecotones had higher densities of sites ranging between one site per 1.7 and 5.8 acres. Prehistoric occupation did appear to be more frequent at the ecotones between environmental zones.

Of the 147 prehistoric sites encountered during the survey, only 27 sites stretched across different landforms: till plain/outwash plain, till plain/ outwash terrace, outwash terrace/floodplain, outwash terrace/outwash plain, etc. All 27 sites contained scatters of more prehistoric artifacts than those typically encountered on sites encountered on only one landform (till plain, floodplain, outwash plain). This suggests that ecotones attracted more intensive occupation.

In addition, Survey Areas 2, 4, 5, 7, 12 and 13 tended to have lower prehistoric artifacts densities per acre, than Survey Areas 1, 3, 6, 8, 9, 10, 11 and 14. The survey areas with no ecotones had artifacts densities between one artifact per 2.0 and 9.9 acres. [Survey Area 12 had a prehistoric artifact density of 0.3 acres due to the anomalous site 12-Ha-331 and was not included]. The survey areas with ectones had higher densities between one artifact per 0.5 acres and 3.7 acres. The higher densities also suggest ecotones attracted more intensive occupation.

The information recovered during this project suggests that ecotone areas were utilized differently than non-ecotone areas. In general, it appears that ecotones were used more extensively and intensively. This pattern is comparable to other Till Plain regions (Cochran 1994:6).

6. Can German identity be distinguished from other early Euro-American settlement?

The German Settlement in Sugar Creek Township was found to be distinct from other Euro-American settlement in the area. While the German occupation was not intensively examined, a German identity was encountered. The cemeteries are the most ethnically identifiable markers investigated during this project. The epitaphs, grave frames and plantings were distinctive from other Euro-American cemeteries. Further archaeological investigation may reveal specific farmstead or artifact patterning.

7. What is the potential for buried archaeological sites within the county?

The potential for buried sites would be in alluvial contexts within Hancock County. There are approximately 10,900 acres (5.6%) of floodplain within the county (Ruesch 1978:5). Approximately 37% of the floodplain soils are well drained Eel or Genesee soil series and the remainder is the somewhat poorly drained Shoals and very poorly drained Sloan. This project surveyed approximately 45 acres of floodplain or 0.4% of the floodplain within the county. Over 60% of the floodplain soils surveyed were Shoals soils and less than 38% were well drained Eel or Genesee. The floodplain areas surveyed have valleys that were typical shallow and narrow and the potential for the alluvium to contain archaeological deposits was believed to be low. Certain areas of the county do have a better potential for buried sites.

The majority of the well drained alluvial soils occur along the Blue River and its tributaries Nameless Creek, Dilly Creek and Sixmile Creek. Smaller areas occur along

Sugar Creek and the lower reaches of Brandywine Creek. The Blue River valley and the lower reaches of its tributaries have broad valleys and have more topographical relief. Colluvial/alluvial fan development is evident along the southern margin of the Blue River valley. This valley has the best potential in the county to contained buried archaeological sites. The valleys of Sugar Creek and Brandywine Creek were sampled by the survey and confirmed to have shallow and narrow valleys. These valleys have a low potential to contain buried archaeological sites.

8. What chert resources were utilized in the county? Are there outcrops of Fall Creek chert? - by Donald R. Cochran

Defining the bedrock source for Fall Creek chert has been an ongoing frustration for over 20 years. The only documented bedrock chert source near the type locality for the original gravel source (Lumbis and Cochran 1984) is at the abandoned quarry at the Pendleton Reformatory southwest of Pendleton. The limestone exposed at the quarry is identified as Silurian age Liston Creek by both Cumings and Schrock (1928) and Wayne (1975). In describing the outcrop at the quarry, Cumings and Schrock (1928:85) note that "small nodules of white chert occur abundantly at certain horizons." They also documented a 6-7 foot thick deposit of cherty limestone about 2 feet below the surface and another 20 foot thick deposit of cherty limestone deeper in the quarry. They compared the cherty limestone being quarried on the Reformatory property to the Liston Creek Limestone at Huntington (Cumings and Schrock 1928:172-173).

Wayne (1975:3, Plate 1) identifies the Reformatory quarry and an outcrop on nearby Fosters Branch as exposures of the Liston Creek Limestone. Curtis Tomak and Cameron Quimbach visited the quarry and Tomak recorded the outcrop as follows: "The chert occurs as narrow layers in bedrock at the ground surface at the very edge of an old quarry filled with water. It is exposed intermittently in the bedrock at least for a couple of hundred feet along the western edge of the quarry" (Tomak 2000). Tomak collected samples of the chert and donated two samples to ARMS. Tomak and Quimbach recorded an additional chert exposure in Fosters Branch where the creek valley intersects the Fall Creek valley. Recently, samples of chert were collected by ARMS staff from a drainage ditch adjacent to the bridge over Foster's Branch at this locality. Comparison of these samples with Liston Creek chert from the Mississinewa Reservoir confirmed their similarity and comparability.

In addition to the Liston Creek Limestone exposures in Madison County, Wayne (1975:7) identifies exposures of Middle Devonian Jeffersonville Limestone in the county from Pendleton northward. The Jeffersonville Limestone is a prominent chert-bearing deposit with multiple layers of chert interspersed in the limestone matrix (Cantin 2005). The Pendleton Sandstone is the lowest unit of the Jeffersonville and, where present, it disconformably separates the Jeffersonville from the Silurian rocks below (Wayne 1975:6,7; Orr and Pierce 1973:328; Indiana Geological Survey 2006a; 2006b). Jeffersonville Limestone overlies the Pendleton Sandstone outcrop at the falls in Pendleton (Orr and Pierce 1973). Cox (1879) published the first description of a measured section of the Pendleton Sandstone and reported 8 feet of limestone above the

Pendleton Sandstone, including a 4 foot section of cherty limestone. Almost 100 years later, the cherty limestone is missing above the Pendleton Sandstone although the area had been actively quarried for many years (Orr and Pierce 1973). The cherty limestone above the Pendleton Sandstone at the falls in Pendleton is Jeffersonville Limestone (Orr and Pierce 1973).

Another potential source of Fall Creek chert is a cherty conglomerate reported by Kindle (1901:560 in Orr and Pierce 1973) as a "local development in the upper part of the Pendleton sandstone." Orr and Pierce (1973:327) found chunks of concrete containing pebbles of dark-colored chert at the location of the cherty conglomerate described by Kindle. Although Orr and Pierce (1973:327-328) dismiss Kindle's cherty conglomerate as a misidentification, it is difficult to imagine that a geologist of Kindle's stature would mistake concrete for a conglomerate. Conglomerate of cemented gravel is documented elsewhere in Madison County (Wayne 1975:22).

If both the chert bearing Liston Creek and Jeffersonville limestones outcrop in Madison County, were other bedrock exposures of chert-bearing rocks recorded in surrounding counties? A review of Cumings and Schrock (1928:86-87) revealed surface exposures of Liston Creek chert in Hamilton and Delaware Counties. Cree (1991:44) reported an additional Liston Creek chert exposure in Hamilton County. Liston Creek Limestone, Jeffersonville Limestone and Pendleton Sandstone outcrops are recorded in several locations in Hamilton and other counties although chert is not mentioned (Brown 1884). These locations need to be field checked to determine whether chert is present. Interestingly, Pendleton Sandstone outcrops are reported at the mouth of Duck Creek and in the White River at Strawtown (Brown 1884:27). Given the relationship between the Pendleton Sandstone and Jeffersonville Limestone and the potential for defining the bedrock source of Fall Creek chert, these outcrops could explain the concentration of Fall Creek chert in the gravels at Strawtown (McCord and Cochran 2003:45-48). The Pendleton Sandstone/Jeffersonville Limestone interface may well be the source for the Fall Creek quartzite so prominent in Late Prehistoric artifacts at Strawtown as well (McCord and Cochran 2003:46-48).

Since both the Jeffersonville and Liston Creek limestone outcrops in Madison County contain chert, there are then two bedrock cherts that could be the source of the Fall Creek chert in local gravels. The Pendleton Sandstone appears to be one key to sorting between the cherts. One of the defining attributes of Fall Creek chert is a sandy cortex. Under magnification, the cortex is definitely sandy and the chert has the appearance of originating in sandstone. Samples of Fall Creek chert encased in sandstone have been collected by ARMS staff from Madison County. The Pendleton Sandstone separates the Jeffersonville and Liston Creek limestones. Samples of Liston Creek chert collected from the Reformatory quarry and at Foster's Branch do not have a sandy cortex. Since the Liston Creek Limestone beds formed prior to the Jeffersonville beds of sandstone and limestone, the Liston Creek chert should not have a sandy cortex. Thus, the pitted, sandy looking cortex associated with Fall Creek chert appears most likely to be associated with the lower part of the Jeffersonville Limestone where it immediately overlies the Pendleton Sandstone.

To return to the research question: Are there outcrops of Fall Creek chert in Hancock County? The simple answer is, no bedrock outcrops are recorded in Hancock County. Bedrock sources of Liston Creek chert are recorded immediately north of the Hancock County line in Madison County. The Jeffersonville Limestones recorded at the falls in Pendleton (Cox 1879) appear to represent a bedrock source for Fall Creek chert, but again, no bedrock source for this chert is recorded in Hancock County. As documented earlier, high percentages of chert occurs in the gravels in the northern third of Hancock County (Blatchley 1905) and would have served as a focal resource for aboriginal populations in the county. This concentration of chert in the gravels may be reflected in the number and kinds of sites in northern Hancock County and may partially explain the high numbers of Early Archaic points in private collections from that part of the county.

CONCLUSIONS AND RECOMMENDATIONS

This investigation of the archaeological resources in Hancock County, Indiana was primarily constructed around the data deficiencies of the county. Nearly 800 acres or 319 hectares were surveyed by pedestrian transects covering different landforms. Over 100 historic sites were visited during the survey and several local collections were reviewed. The German Settlement of Sugar Creek Township was also explored. The data recovered during this project was compared to surrounding counties and the central Indiana Till Plain region. To help manage the archaeological data previously documented for the county and amassed during this project, a GIS database was also created.

From the pedestrian survey, 161 new archaeological sites were recorded. Prehistoric components were identified from 147 sites and Historic components were identified from 24 sites. The survey recovered 702 prehistoric artifacts and 950 and historic artifacts. Most of the prehistoric sites recorded were unidentified by time period and were small lithic scatters or isolated finds. Only two prehistoric sites, 12-Ha-261 and 331 were believed to be potential eligible for listing on the State or National Registers and recommended for testing. Five of the historic sites, 12-Ha-209, 229, 292, 300 and 306 were incompletely surveyed during this project and were recommended for survey and further assessment. Four historic sites, 12-Ha- 203, 280, 314 and 336, were believed to be associated with a structure or house and thought to be potential eligible for listing on the State or National Registers. These sites were recommended for testing.

From the 250 historically documented sites in the county, 137 were visited during a windshield survey. Thirteen new and two previously recorded sites were documented. These sites included 14 extant schoolhouse structures (12-Ha-18, 27, 351, 353 to 363) that were believed to be potential eligible for listing on the State or National Registers and were recommended for testing. One site, 12-Ha-352, was a mill race that was recommended for survey and further evaluation.

The local collections analysis reviewed several hundred artifacts from Hancock County. The artifacts documented occupation in the county between the Paleoindian and Late Woodland. Artifacts from 28 previously documented sites were reviewed and correlated to 16 sites. One new archaeological site was also recorded. Site forms were completed for 17 sites and recommended for re-survey to update site information and determine site boundaries. The local collections also validated the presence of several Hardin Barbed points within the county.

The data collected during this project demonstrate that the prehistoric archaeology of Hancock County is similar to other central Indiana Till Plain regions. However, the county has a highest incidence of very poorly drained Brookston soils and lowest of well drained Miami soil within the till plain setting of the surrounding counties. Hancock County is also located between the West Fork of the White River and the Big Blue River valleys. While a small portion of the county is within the Big Blue River valley, the majority of the county lacks a wide or deep river/creek valley. These unique

environmental characteristics amplify the settlement pattern models of the Till Plain region Cochran 1994:6):

1) Settlement is dispersed across the till plain due to dispersed resources, but is more intense at focal resources.
2) Sites generally have low artifact densities.
3) Site frequencies and artifact densities are high on well drained soils.

The data collected from Hancock County epitomizes the prehistory of the Till Plain region and the unique environment magnifies the challenges of archaeological investigations in the Till Plain region of Indiana.

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