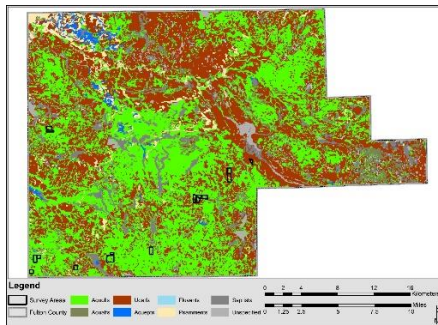


# INDIANA ARCHAEOLOGY

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INDIANA DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF HISTORIC PRESERVATION AND ARCHAEOLOGY (DHPA)



## ACKNOWLEDGMENTS

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Note: The projects discussed, noted below with “HPF,” received federal financial assistance from the Historic Preservation Fund Program for the identification, protection, and/or rehabilitation of historic properties and cultural resources in the State of Indiana.

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This is a refereed, open access journal. All articles and reports/features are reviewed by the editor, the DHPA director, and two professional archaeologists not with the DHPA. The HPF submissions included in this volume were also reviewed by co-editor Rachel Sharkey in her capacity as the HPF archaeology grant liaison.

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## INTRODUCTION

Per state statute (Indiana Code 14-21-1-12), one of the duties of the DHPA is to develop a program of archaeological research and development, including the publication of information regarding archaeological resources in the state. This journal is one of the ways that our office continues to address that mandate. Also, Indiana Code 14-21-1-13 states that the Division may conduct a program of education in archaeology. Indiana's cultural resources management plans have also listed educating the public about Indiana's Native American cultures and identifying, and studying Native American, African American, and other ethnic and cultural heritage resources, as ways to accomplish several preservation goals. The variety of archaeological sites in Indiana, and what has been learned about the sites, is wide-ranging and impressive.

For those who may not be familiar with some archaeological terms, a helpful glossary of some of these general terms is included in the back of this journal. To also aid the lay reader, a general overview of precontact time periods may be found at the end of this volume. Additional archaeological outreach documents, including *Early Peoples of Indiana* and previous volumes of *Indiana Archaeology*, may be accessed at [on.IN.gov/archaeo-pubs](https://on.IN.gov/archaeo-pubs).

- The authors are thanked for their submissions.
- Our colleagues who contributed peer reviews for this volume are also thanked.
- Former DHPA coworker Rachel Sharkey is thanked for her work as co-editor of this volume.
- I would also like to express my appreciation to Dr. William L. Mangold for the opportunity to interview him as part of our "Hoosier Archaeology Insights" initiative. Bill has been a friend and valued colleague for many years.

This volume of *Indiana Archaeology* is in memory of Catharine A. Carson. Cathy was a former DHPA coworker who passed away unexpectedly in September, and she will be truly missed by her archaeology friends and colleagues.

—ALJ

## EDITOR, CO-EDITOR, AND EDITORIAL ASSISTANCE

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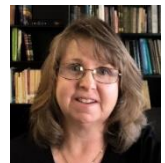
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## AUTHORS

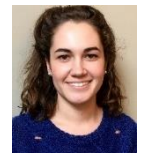
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# ARCHAEOLOGICAL INVESTIGATIONS OF FULTON COUNTY, INDIANA: SUMMARY RESULTS FOR A FY17 HISTORIC PRESERVATION FUND SURVEY

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[NOTE- At the time this article was written, all authors were with Ball State University.]

## **ABSTRACT**

The Applied Anthropology Laboratories (AAL) at Ball State University conducted a data enhancement project for archaeological resources in Fulton County, Indiana, for a FY2017 Historic Preservation Fund (HPF) Grant (#18-17FFY-04). This HPF Grant project included the investigation of the archaeological resources of Fulton County, with a focus on four south-central townships (Henry, Liberty, Union, and Wayne) and General Land Office (GLO) sites in Rochester Township. A total of 924 acres (373.93 hectares) of agricultural land was surveyed, including 4.36 acres (1.76 hectares) of resurveyed area. The survey recovered 94 precontact and 1,806 historic artifacts from 11 survey areas within Fulton County. Artifacts were grouped into 108 new archaeological sites including 43 sites with precontact components (including one Early Archaic, one Late Archaic, and two Late Woodland/Late Precontact), 57 sites with historic components, and eight sites with both precontact and historic components. The average site density recorded for the survey areas for precontact sites was one site per 18.11 acres and for historic sites was one site per 14.22 acres. Sites were found on till plains, moraines, outwash plains, and lake plains. Local Silurian chert types were the most common precontact tool stone found during the survey, with four diagnostic projectile points discovered.

## **INTRODUCTION**

The AAL was awarded a FY2017 HPF Grant to survey portions of Fulton County, Indiana. The project started with a background research of soils, soil associations, landforms, and chert. A pedestrian survey of 11 survey areas comprised 924 acres of agricultural land in 11 survey areas, including 4.36 acres of resurveyed area. This article addresses several of the main goals of the grant including increasing the number of sites known for the county, refining the cultural chronology for the county, examining evidence for early Euro-American settlement, exploring potential Potawatomi settlements, and investigating multiple GLO sites (General Land Office 1795-1840). Fulton County had 58 archaeological sites recorded in the State Historic Architectural and Archaeological Research Database (SHAARD) prior to the start of this survey (Division of Historic Preservation and Archaeology [DHPA] 2007). This investigation focused on four south-central townships (Henry, Liberty, Union and Wayne) and GLO sites in Rochester Township. In documenting new sites in Fulton County, we also hoped to eventually increase our understanding of the Euro-American presence and American Indian utilization in northern Indiana by comparing the results to recently concluded HPF Grant surveys for neighboring counties such as Benton (FY2015, Grant #18-15FFY-03; FY2016, Grant # 18-16-FFY-03) (Balough et al. 2016, 2017), Jasper (FY2014, Grant #18-14-FFY-02) (Macleod et al. 2015), and Newton (FY2014, Grant #18-14-FFY-03; FY2015, Grant #18-15-FFY-05; FY2016, Grant #18-16-FFY-04) (Clark et al. 2017; Leeuwrik et al. 2015, 2016).

## **BACKGROUND**

AAL conducted a review of the natural and cultural settings to provide a framework for interpreting the data collected during this project. The background information presented in this article includes basic environmental and archaeological information concerning Fulton County.



## NATURAL SETTING

Fulton County (outlined in black in Figure 1) consists of 237,709 acres (Furr 1987:1) of glaciated landscape. Gray (2000) and Gray and Sowder (2002) map the northern portion of Fulton County within the Plymouth Morainal Complex Section of the Northern Moraine and Lake Region, whereas the southern portion of the county, including all 11 survey areas, is mapped as the Warsaw Moraines and Drainageways Section of the Northern Moraine and Lake Region.

Topographic relief of Fulton County ranges from generally level to strongly sloping. Both the southern and northeastern portions of the county consist of level to slightly undulating till plains with natural drainageways, while the southeast part of the county is more clay rich in subsoil with abrupt relief, and the north-central part of the county is a gravelly morainal area with rolling topography (Furr 1987:2). Topography has been heavily influenced by scouring and retreat of the Wisconsin glaciation (Gray 2000:1). Attica, Liston Creek, Kenneth are the documented regional bedrock cherts that outcrop to the south of Fulton County (Figure 1).

The county is primarily drained by the Tippecanoe River drainage, which includes many small lakes and swamps situated along its meanders. The tributaries of the Tippecanoe River drain these small lakes and swamps and have a rather consistent discharge throughout the year (Lindsey et al. 1961:107). Poorly drained soils, combined with the low-lying topography, contributed to the formation of the many small kettle lakes and other wetlands that cover much of the county (e.g., Furr 1987). Such conditions are similar across most of northern Indiana.

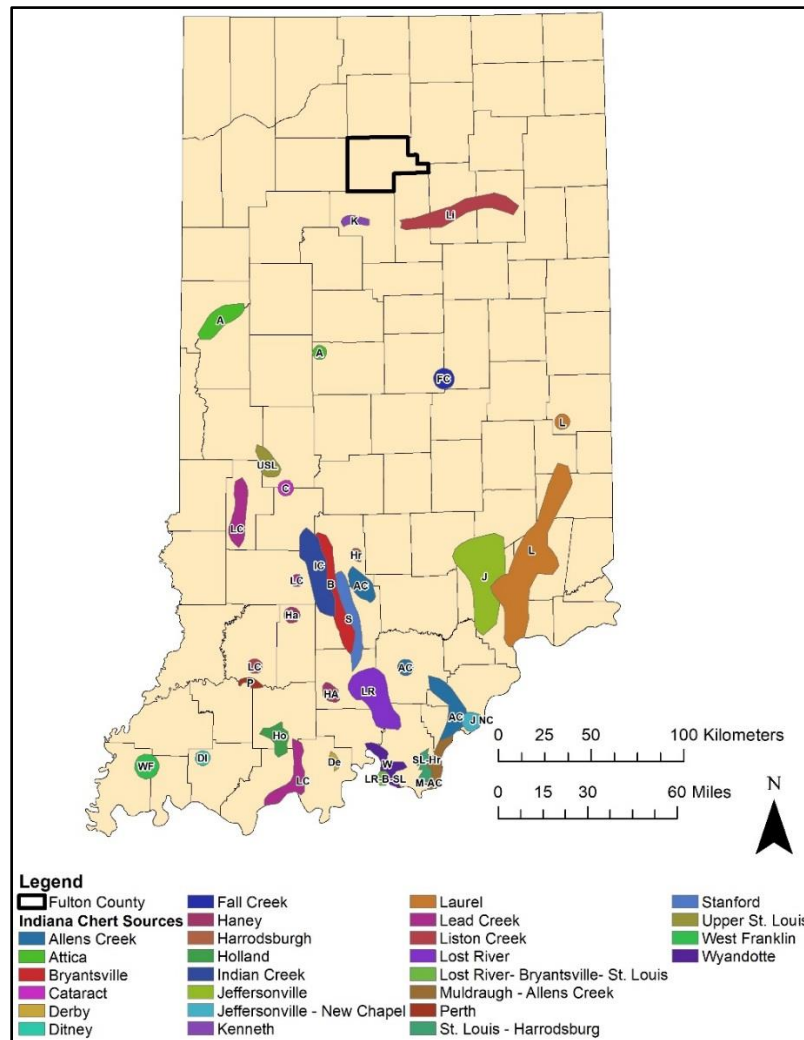


Figure 1. Chert outcrop locations in Indiana (digitized by Brad Painter from Cantin 2008).



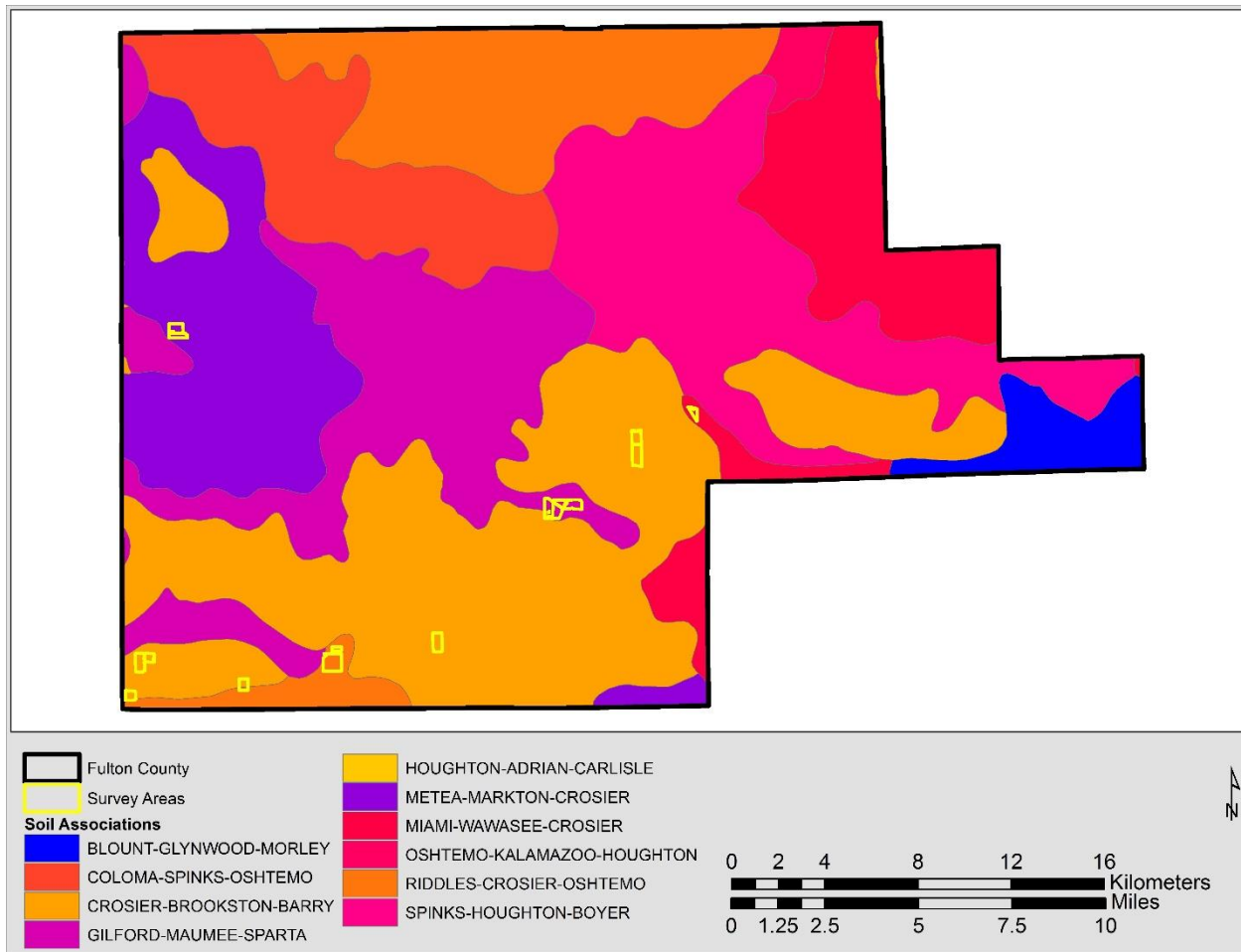
*Soils and Landforms*

The majority of the soils found in Fulton County have formed in either glacial or fluvial parent material. Glacial till sediments typically have clayey to silty textures and contain angular particles of sand and gravel. Textures of glaciofluvial, or outwash, deposits range from silty to gravelly depending on the water source that carried them. The more recent fluvial deposits found on flood plains and river terraces are dominated by loamy textures.

The FY2017 HPF survey areas show variability in their soil associations (Table 1; Figure 2). Soil associations represent groups of geographically related soil types that are similar to one another in various aspects including texture, setting, and parent material. For this research, soil associations were used as a proxy for landforms (e.g., till plains, moraines, stream terraces, etc.) since associations typically occur in a regular geographic pattern upon the landscape (Table 1).

**Table 1. Soil Associations and Landforms Associated with Survey Areas (USDA/NRCS 2015a).**

Soil Association	Landform(s)	Survey Areas
Riddles-Crosier-Oshtemo	Till Plains, Moraines, and Outwash Plains	1, 3, 6
Crosier-Brookston-Barry	Till Plains and Moraines	2, 3, 4, 6, 8, 9, 11
Metea-Markton-Crosier	Till Plains and Moraines	5
Miami-Wawasee-Crosier	Till Plains and Moraines	10
Gilford-Maumee-Sparta	Outwash Plains, Till Plains, and Lake Plains	7, 8



*Figure 2. Soil associations in Fulton County (based on terminology in STATSGO, USDA/NRCS 2002). See Table 1 for associated landforms for each soil association.*

Within Fulton County, soils are mapped as one of six Soil Orders and seven Suborders (USDA/NRCS 2015a) (Figure 3). The most common orders are Alfisols (42.92%) and Mollisols (41.66%). Mollisols are thick, organic-rich soils that are naturally fertile and common throughout in prairie or savannah-like regions (USDA/NRCS 2015b:381). Aquolls are wet (a.k.a. Aquic) Mollisols exhibiting a seasonally high water table (USDA/NRCS 2015b:391). Aquolls often have been artificially drained and converted to agriculture (USDA/NRCS 2015b:420). Alfisols support, or once supported, forest environments and consist of two Suborders (Udalfs and Aqualfs) in the 11 survey areas. Udalfs represent the typical Alfisol. Aqualfs are Alfisols with at least seasonally wet conditions (USDA/NRCS 2015b). The vegetation supported previously would have been tall grass prairies and occasionally a deciduous forest (USDA/NRCS 2015b:420).

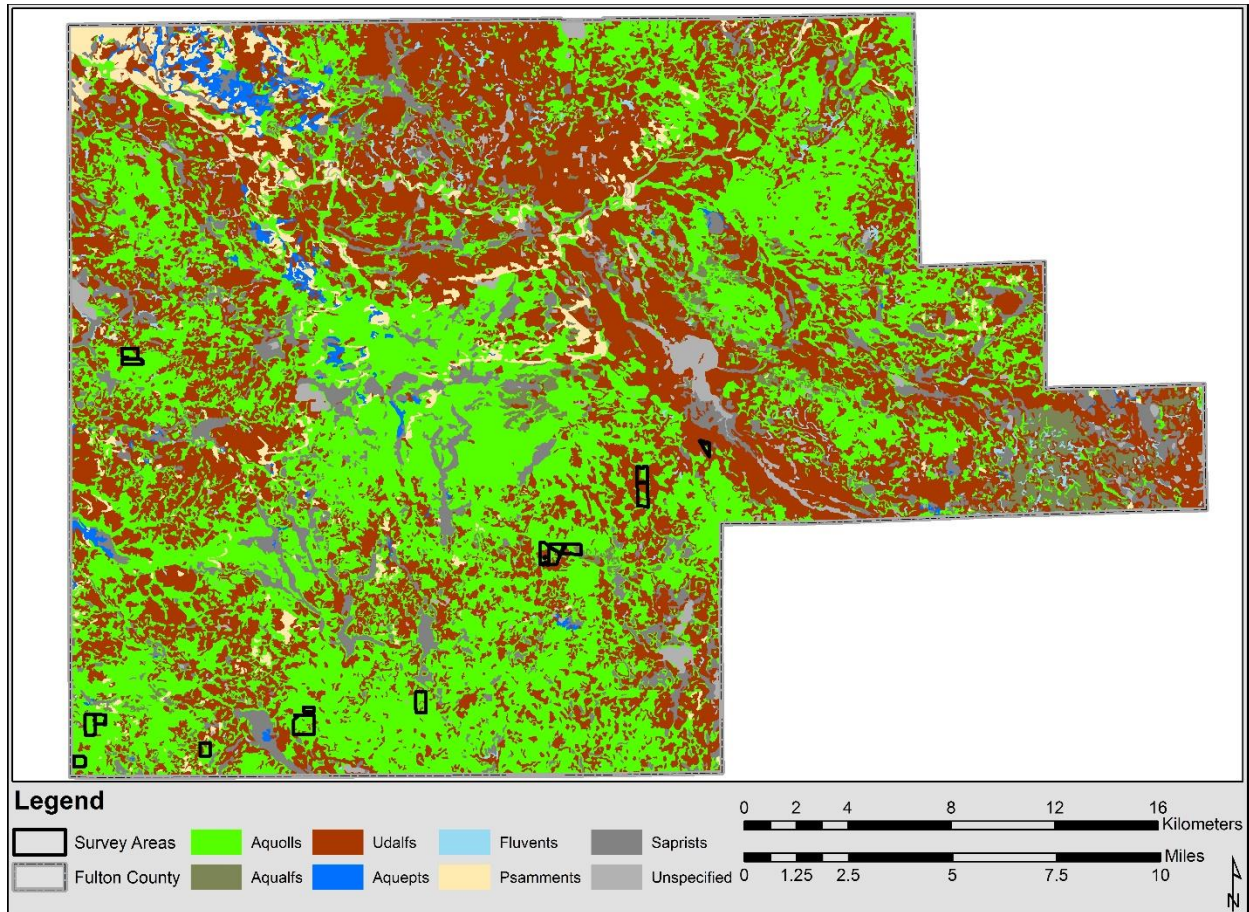


Figure 3. Soil suborders located within Fulton County (USDA/NRCS 2015a).

### CULTURAL SETTING

In Fulton County, archaeological site components indicate that American Indians inhabited the region from the Paleoindian period through the Historic period. Given the previously described environmental background, we expected variable artifact densities over space due to the interrupted distribution of habitable areas interspersed with wetlands (see also Surface-Evans 2015) and a variable distribution through time as precipitation and ground moisture levels fluctuated during the Late Pleistocene and Holocene periods. Of the previously documented sites with documented periods of occupation, Historic period components (n=33) are the most frequent followed by Protohistoric period (n=5), Early Archaic (n=3), Paleoindian (n=1), Early Woodland (n=1), and Late Woodland/Late Precontact (n=1) components (DHPA 2007). The majority of the other Precontact components are listed as unknown or are simply classified to a broader period such as “Unknown Woodland.”

Although SHAARD contains only a single Paleoindian site for the county, Dorwin (1966:Figure 1) and Tankersley et al. (1990) identified additional fluted points (see also Shott 2004:208; White et al. 2007). Previous to our survey, three Early Archaic sites (12FU47, 12FU50, and 12FU51) had been documented in Fulton County (DHPA 2007). Point types recovered from Early Archaic sites include one Kirk Stemmed and a Thebes/St. Charles (DHPA 2007; Stillwell 1997). Site 12FU51 reportedly has multiple components including Paleoindian, Early Archaic, Early Woodland, and Late Woodland/Late Precontact (DHPA 2007; White et al. 2007). There is one site (12FU28) in Fulton County labeled as containing a general Woodland component that includes a report of an earthen burial mound (DHPA 2007). The possible mound was originally recorded by GLO surveyor Austin W. Morris in 1834 (DHPA 2007).

Prior to survey, there were five sites (12FU12, 12FU16, 12FU23, 12FU29, and 12FU37) assigned to a Protohistoric period (as “unknown Native American”) for Fulton County (DHPA 2007). These sites, which included burials, camps, and a cemetery, were recorded in the GLO survey notes (General Land Office 1795-1840). Later, Maust and Cochran (1989) defined and recorded these sites in SHAARD based on the GLO records.

Guernsey’s map (1933) shows multiple Potawatomi villages in what is now Fulton County, including the large Aubbeenaubee Reserve, home of Potawatomi Chief Aubbeenaubee, in northern Fulton County. Also noted are Toisa’s and Masac’s villages along the Tippecanoe River, and Kewanna and Wimego’s villages in southern Fulton County. Two of the previously mentioned GLO sites (burials 12FU16 and 12FU29) were associated with Toisa’s and Masac’s villages (DHPA 2007). Lake Manitou in central Fulton County is noted on Guernsey (1933) as Maneto in Potawatomi. The lake was created by damming in 1827 to provide water for a grist mill (Potawatomi Mills) constructed by the United States government as part of a treaty agreement with the Potawatomi. A blacksmith shop, trading post and a house were also constructed in the area of the lake and the mill (Guernsey 1933; Lake Manitou Association 2022).

In the early 1800s, American Indians inhabiting Indiana began to cede their land rights to the U.S. government, and were moved, often forcefully, to reservations within the state or to the west. The Treaty of Mississinewa (1826) ceded Potawatomi and Miami land in northeast Indiana, including eastern Fulton County. Also in 1826, the Potawatomi ceded a strip of land from Indianapolis to Lake Michigan to create the Michigan Road, which went through central Fulton County. The Treaty of Tippecanoe (1832), ceded Potawatomi land in northwest Indiana, including western Fulton County (Fay 1971; Forest County Potawatomi 2022; Kappler 1972). Forced removal of American Indians from Indiana was largely complete by 1838 as local tribes such as the Potawatomi were moved to Kansas. This federal action, historically known as the Potawatomi Trail of Death, was responsible for the forced movement of 859 Potawatomi people. In total, the Potawatomi Trail of Death spanned 660 miles and extended from Twin Lakes, Indiana, to Osawatomie, Kansas. The removal took approximately two months and resulted in the death of over 40 individuals, mostly children (Citizen Potawatomi Nation Cultural Heritage Center 2022; Hamilton 1996; Thorpe 2003). The removal trail crossed Fulton County from north to south through Rochester, and near several of this project’s survey areas.

The first Euro-American settlers were present in Fulton County as early as 1831 (Henning 1987:xiii). In 1836, Fulton County was officially organized after previously being a part of Cass County to the south, and the city of Rochester was chosen as the county seat. Initially, the county consisted of three large Townships: Liberty, Richland, and Rochester, with five more, Aubbeenaubee (named after the Potawatomi Chief and part of Reserve land), Henry, Newcastle, Union, and Wayne, added forming the current county boundaries (Henning 1987:xiii). Settlement of the county was slow between 1840 and 1876, but the building of the Indianapolis, Rochester, Chicago Railroad in 1868 spurred significant population growth by the end of the nineteenth century (Henning 1987:xiii).

## **ARCHAEOLOGICAL SURVEY METHODS AND RESULTS**

### **METHODS**

#### *Field Survey*

For this grant project, survey areas were selected using topographic maps, aerial maps, soil information, historic sources, and reconnaissance information. The survey was constructed to sample different regions within Fulton County, with an emphasis on previously unsurveyed agricultural land in the southern and central portions of Fulton County, and cultivated fields with optimal visibility. Ultimately, landowner permission and field visibility dictated the areas sampled by this survey which included 924 acres of moraines, outwash, lake plains, and till plains.

AAL archaeologists and student field technicians conducted this project with Christine Thompson and Kevin C. Nolan serving as Principal Investigators. The field survey was conducted between August 26 and November 26, 2017 and consisted of pedestrian transects spaced at 10-meter intervals. The survey interval was reduced to five meters when artifacts were encountered. The areas surveyed by pedestrian transects had between 30 and 90% ground surface visibility. All artifacts within two meters of the first artifact encountered were collected and mapped as a single find location. However, fire-cracked rock and brick were merely field counted. All collected artifacts were bagged and

given temporary transect and find numbers. Artifacts at farther distances within the same transect were assigned the same transect number and the next sequence number. If a site consisted of only a single collection point, a 10 x 10 meter radial survey area was investigated around the find spot, 5 meters in each direction. Each new radial find was assigned a new find number. If multiple artifacts were encountered along multiple transects, short transects were traversed at five-meter intervals to refine the boundaries of the cluster. Find points were mapped with a Trimble GeoXT Series GPS with a minimum of 20 readings logged for each find spot. GPS data is imported from the Trimble to the GPS Pathfinder Office series 5.3 software for post-processing including Differential Correction. The coordinate system was set for UTM NAD83 Zone 16N. Sites were defined with 15-meter buffers created around mapped artifact locations. The 15-meter buffers were used to define artifact clusters that constitute a 'site.' Site boundaries were defined by five meter buffers around each site cluster. These boundaries were used to compile site attributes such as area, soil type, and site density. Site density was calculated by dividing the number of acres (924 acres) within a survey area by the number of sites (108 archaeological sites) located within that survey area.

### *Laboratory*

All collected artifacts were processed at the AAL laboratory according to standard procedures (see Szmuto et al. 2018:Appendix B, Appendix C). Lithic raw materials were identified by comparison with reference samples and published descriptions on file at AAL (Cantin 2008; DeRegnaucourt and Georgiady 1998) and reported by geologic period, noting which "type" is most consistent with the specimen. All chert identifications were made microscopically at 10x magnification or greater. Historic artifacts were classified according to various published and online sources (ACH Food Companies Inc. 2014; Adams 2002; American Chemical Society 2016; Bower 2009; Briscoe Center for American History 2012; Brown 1982; Brown and Lebo 1991; Classic Bells Ltd. 2017; Dovetail Cultural Resource Group 2017; Feldhues 1995; Godden 1964; Horn 2005; Intermountain Antiquities Computer System [IMACS] 1992, 2009; Lindsey 2017; Lockhart et al. 2008, 2013; Lockhart and Hoenig 2015; Maples 1998; Maryland Archaeological Conservation Laboratory 2010, 2015, 2016a, b, c; Mayer 1994; Miller 2000; Miller et al. 2000; Ohio Department of Transportation [ODOT] 1991; Peterson 2007; Schrader-Bridgeport International 2017; Stelle 2001; Tinkham 2002; Tod 1977; Wiggins 2017; William Reed Business Media Ltd 2017). Notes, maps and photographs were reviewed and prepared for illustration and curation. Project materials and artifacts not requested to be returned to the landowners are curated at the AAL under accession number 16.115. State site numbers were obtained and a Division of Historic Preservation and Archaeology (DHPA) Sites and Structures Inventory form was entered in SHAARD for each site identified during the project.

## RESULTS

As part of the FY2017 HPF survey, AAL surveyed 924 acres in Fulton County. This survey identified 108 new archaeological sites representing 119 cultural components within the 11 survey areas. Of the 108 archaeological sites identified, 43 have precontact cultural components, 57 have historic cultural components, and eight have precontact and historic cultural components. Of sites with precontact components, 50 are classified as Unidentified Precontact. Dated precontact cultural components include one Early Archaic site, one Late Archaic site, and two Late Woodland/Late Precontact sites. Sixty-five sites have historic components primarily representing assemblages that date from the nineteenth through early twentieth centuries.

### *Artifacts*

A total of 94 precontact and 1,806 historic artifacts were recovered by the survey (Table 2). The majority of precontact artifacts are lithic debitage, with 10 showing indications of edge modification including retouching and use-wear. Recent use-wear analyses of similar tools in Indiana, indicate that many, if not most, debitage were used in processing meat, hide, bone, and occasionally plant resources (see Swihart 2016). Of the five formal lithic tools, four were diagnostic (Figure 4) and include one corner-notched St. Charles Dovetail projectile point dating to the Early Archaic period (Justice 1987:57), one Brewerton Side Notched projectile point dating to the Late Archaic period (Justice 1987:115), and two Madison projectile points dating to the Late Woodland/Late Precontact period (Justice 1987:224). Other stone tools include a complete non-diagnostic biface, and utilized and retouched flake tools. Historic artifacts included various types of ceramics, glass, metal objects, and brick fragments.

**Table 2. FY2017 HPF Grant Artifacts Identified During Survey.**

<b>Precontact</b>	<b>No.</b>	<b>Historic</b>	<b>No.</b>
Biface, Hafted, Brewerton Side Notched	1	Ceramic, Ironstone	50
Biface, Hafted, St. Charles Dovetail, Beveled, Corner-Notched	1	Ceramic, Kaolin	1
Biface, Unhafted, Madison Triangular	1	Ceramic, Pearlware	5
Biface, Unhafted, Madison Triangular, Incomplete	1	Ceramic, Porcelain	39
Biface, Unhafted	1	Ceramic, Redware	23
Flake, Complete	14	Ceramic, Whiteware	262
Flake, Complete, Heat Treated	1	Ceramic, Stoneware	293
Flake, Complete, Heat Damaged	1	Ceramic, Yellowware	9
Flake, Complete, Biface Thinning	3	Glass, Amber	109
Flake, Complete, Retouched	2	Glass, Amethyst	74
Flake, Complete, Retouched, Heat Treated	1	Glass, Aqua	357
Flake, Complete, Use Wear	1	Glass, Clear	416
Flake, Distal	9	Glass, Cobalt	7
Flake, Distal, Retouched	1	Glass, Depression	2
Flake, Distal, Heat Treated	1	Glass, Green	14
Flake, Distal, Retouched, Heat Damage	1	Glass, Milk	47
Flake, Distal, Use Wear	2	Glass, Olive	1
Flake, Medial	3	Glass, Red	3
Flake, Medial, Heat Damage	1	Metal, Aluminum	4
Flake, Proximal	5	Metal, Brass	2
Flake, Proximal, Heat Treated	3	Metal, Bronze	1
Flake, Proximal, Modified Edges	1	Metal, Copper	2
Flake, Tool	1	Metal, Iron, Cut Nail	12
Flake, Tool, Retouched	1	Metal, Iron, Wire Nail	5
Angular Shatter	19	Metal, Iron, Wire	1
Angular Shatter, Heat Damage	1	Metal, Iron/Tin	1
Angular Shatter, Heat Treated	3	Metal, Iron, Miscellaneous	39
Angular Shatter, Retouched	2	Metal, Tin/Aluminum	1
Core	8	Metal, Steel, Valve Part	1
Ground stone, Tool, Hammerstone	2	Faunal, Cortical, Long Bone	2
Ground stone, Tool, Expedient	1	Faunal, Cortical, Bone	3
Granite, FCR	1	Faunal, Unidentified Bone	2
		Faunal, Shell	2
		Other, Coal	5
		Other, Charcoal	1
		Other, Graphite Battery	2
		Other, Brick (collected)	8
		Other, Brick (not collected)	520
<b>Total</b>	<b>94</b>	<b>Total</b>	<b>2,326</b>





Figure 4. Diagnostic precontact artifacts recovered during survey including a corner-notched St. Charles Dovetail point (site 12FU115), Brewerton Side Notched point (site 12FU68), and two Madison points (sites 12FU112 and 12FU66).

#### Chert

While no natural chert outcrops exist within Fulton County, all nearby outcrops are Silurian in age (Figure 1). Owing in part to their local and semi-local occurrence, the lithic artifacts recovered by this survey were predominantly made of Silurian cherts (63.8%) (Table 3). One non-diagnostic biface recovered from site 12FU76 was made with Liston Creek chert. A Late Woodland/Late Precontact Madison point (from site 12FU112) was consistent with Laurel chert. Mississippian chert had the second greatest representation of identified cherts in this survey (6.4%), with Devonian and Pennsylvanian cherts the next most represented cherts in abundance (5.3% each). A Late Archaic Brewerton Side Notched point (from site 12FU68) was made of chert consistent with Jeffersonville. An Early Archaic corner-notched St. Charles Dovetail point (from site 12FU115) was made of chert consistent with Holland Dark Phase. A Late Woodland/Late Precontact Madison point (from site 12FU66) was made with chert consistent with Holland. The breakdown of the chert types (Table 3) is slightly skewed by the large percentage of unknown chert in the total assemblage (14.9%), and even within geologic periods (1.1% of Mississippian cherts were unidentified).

**Table 3. Chert Types and Relative Frequencies Encountered During Survey.**

Age	Chert	Qty	% of assemblage	County(s) with nearest outcrop
<b>Silurian</b>		<b>60</b>	<b>63.83</b>	
	Kenneth	9	9.57	Cass
	Laurel	6	6.38	Wayne
	Liston Creek	41	43.63	Huntington, Miami, Wabash
	Fall Creek/ Liston	1	1.06	Madison, Hamilton, Huntington, Miami, Wabash
	Liston Creek/ Kenneth	1	1.06	Huntington, Miami, Wabash, Cass
<b>Mississippian</b>	Liston Creek/ Laurel	2	2.13	Huntington, Miami, Wabash, Wayne
		<b>6</b>	<b>6.38</b>	
	Attica/ Sugar Creek	2	2.13	Boone, Warren
	Indian Creek	2	2.13	Owen

	Wyandotte	1	1.06	Crawford, Harrison
	Unidentified	1	1.06	
<b>Devonian</b>		<b>5</b>	<b>5.32</b>	
	Jeffersonville	5	5.32	Bartholomew, Decatur, Jefferson, Jennings
<b>Pennsylvanian</b>		<b>5</b>	<b>5.32</b>	
	Holland	4	4.26	Dubois, Spencer
	Holland Dark Phase	1	1.06	Dubois, Spencer
<b>Unidentified Chert</b>		<b>14</b>	<b>14.89</b>	
<b>Granite</b>		<b>4</b>	<b>4.26</b>	
<b>Total</b>		<b>94</b>	<b>100%</b>	

The identified chert breakdown suggests that precontact people living in Fulton County relied on close Silurian-age chert sources (e.g., Liston Creek and Kenneth) for tool stone. Just over half (55.6%) of the chipped-stone assemblage was made of these nearby sources. Local sources are followed closely by a reliance on more exotic chert types from southern Indiana (Laurel and Jeffersonville to the southeast, and Holland and Holland Dark Phase to the southwest of Fulton County), which make up 17.8% of the total lithic assemblage. All identifiable points (n=4) were manufactured of non-local cherts, including Laurel, Holland, Holland Dark Phase, and Jeffersonville cherts. The exclusive presence of these materials in the diagnostic tool assemblage may indicate that precontact American Indians in Fulton County had some level of connection to southern Indiana, either through trade, direct procurement, or perhaps even migration.

#### *Archaeological Components*

Of the 119 newly identified archaeological components from 108 newly identified sites, 50 are classified as Unidentified Precontact. Identified precontact components consist of two Archaic (Early and Late Archaic) and two Late Woodland/Late Precontact. Sixty-five sites have historic components, all of which represent mid-nineteenth through early twentieth century assemblages. Most historic sites appear to reflect activities associated with the operating of rural residences or farmsteads. As seen in Table 4, the results of the FY2017 HPF survey essentially doubled the number of archaeological components previously known for Fulton County.

**Table 4. Number of Site Components Added to SHAARD.**

<b>Cultural Period</b>	<b>Previous</b>	<b>Added</b>	<b>Total</b>
<b>Unidentified Precontact</b>	<b>7</b>	<b>50</b>	<b>57</b>
<b>Paleoindian</b> (ca. 10,000 – 7500 BC)	<b>1</b>	<b>0</b>	<b>1</b>
<b>Archaic</b>	<b>5</b>	<b>2</b>	<b>7</b>
Early Archaic (ca. 8000 – 6000 BC)	3	1	4
Middle Archaic (ca. 6000 – 3500 BC)	0	0	0
Late Archaic (ca. 4000 – 700 BC)	0	1	1
Unidentified Archaic	2	0	2
<b>Woodland</b>	<b>4</b>	<b>2</b>	<b>6</b>
Early Woodland (ca. 1000 – 200 BC)	1	0	1
Middle Woodland (ca. 200 BC – AD 600)	0	0	0
Late Woodland/Late Precontact (ca. AD 500 – 1650)	2	2	4
Unidentified Woodland	1	0	1
<b>Protohistoric/Contact</b>	<b>5</b>	<b>0</b>	<b>5</b>
<b>Historic</b> (post AD 1650)	<b>33</b>	<b>65</b>	<b>98</b>
<b>Unknown</b>	<b>1</b>	<b>0</b>	<b>1</b>
<b>Total</b>	<b>56</b>	<b>119</b>	<b>175</b>



Early historic settlement in Fulton County is represented by 65 sites that range from isolated finds to extensive artifact scatters and occasionally multicomponent sites with precontact and historic artifacts. Historic assemblages range from small artifact scatters that likely reflect historic dump sites or secondary deposits from relatively recent to modern activity. At least three large assemblages of historic artifacts were recovered from Survey Areas (SA) 1 and SA 6 at sites 12FU65, 12FU67, and 12FU126. Additional large historic scatters were identified in SA 3 (site 12FU98) and SA 7 (site 12FU139). Many of these large assemblages display a diverse array of artifact types that are indicative of primary deposits and locations of structures or activity areas. Based on dateable materials, these historic sites appear to represent nineteenth through early twentieth century occupations, primarily rural residences and farmsteads.

*Density*

The FY2017 HPF Grant investigations of Fulton County documented an average of one precontact or historic site per 8.55 acres and an average artifact density of one artifact per 0.49 acres surveyed. The project documented an average density of one historic artifact per 0.51 acres surveyed and an average density of one precontact artifact per 9.82 acres surveyed. Artifact densities by survey area are presented in Table 5. SA 7 had the highest density of sites per acre (0.19), while SA 3 had the lowest (0.02). SA 6 demonstrated the highest number of artifacts per acre (5.79), while SA 10 had the lowest (0.04). Overall, the highest densities of artifacts were observed in survey areas associated with moraines, outwash plains, and till plains (SA 2, 3, 4, 5, 6, and 9) and the lowest density was observed in survey areas associated with moraines and till plains (SA 10), which were underrepresented in the survey. This is in contrast to the high proportion of artifacts found on moraine landforms in previous HPF investigations in Benton County (Balough et al. 2016:Table 37; 2017:Table 43) and comparable to the percentage of sites found on lake and outwash plains in Newton County (Clark et al. 2017:Table 32).

**Table 5. FY2017 HPF Artifact Densities.**

<b>Survey Area</b>	<b>Acres</b>	<b>Sites</b>	<b>Sites/ Acre</b>	<b>Artifacts</b>	<b>Artifacts/ Acre</b>
SA 1 (Moraines and Till Plains)	160.8	29	0.18	644	4.01
SA 2 (Moraines and Till Plains)	78.31	9	0.11	25	0.37
SA 3 (Till plains, Moraines, and Outwash Plains)	47.47	1	0.02	102	2.15
SA 4 (Moraines and Till Plains)	112.2	7	0.06	507	4.52
SA 5 (Till plains, Moraines, and Outwash Plains)	92.32	13	0.14	17	0.18
SA 6 (Moraines and Till Plains )	43.34	8	0.18	251	5.79
SA 7 (Lake Plains, Outwash Plains, and Till Plains)	145.4	28	0.19	254	1.75
SA 8 (Lake and Outwash Plains)	67.93	4	0.06	7	0.1
SA 9 (Moraines and Till Plains)	59.53	4	0.07	83	1.39
SA 10 (Moraines and Till Plains)	26.83	1	0.04	1	0.04
SA 11 (Moraines and Till Plains)	89.95	4	0.04	9	0.1
<b>Total</b>	<b>924</b>	<b>108</b>	<b>0.12</b>	<b>1900</b>	<b>2.06</b>

**DISCUSSION**

**CULTURAL CHRONOLOGY**

Prior to this 2017 survey, Fulton County had seven Unidentified Precontact sites, one Paleoindian site, five Archaic sites, three Woodland sites, five Protohistoric sites, and 33 Historic sites documented in SHAARD (see Table 4). This survey added an additional 108 sites (119 cultural components) including 50 Unidentified Precontact site components, one Early Archaic site component, one Late Archaic site component, two Late Woodland/Late Precontact site components, and 65 Historic site components. In addition, three projectile point types (two previously unrecorded) were added to the knowledge of Fulton County’s prehistory. The previously unrecorded point types were one Early Archaic corner-notched St. Charles Dovetail point, and one Late Archaic Brewerton Side Notched point. Additionally, two Late Woodland/Late Precontact Madison triangular points were added to the county’s inventory.

The lack of diagnostic artifacts for Fulton County makes assessment of cultural chronology difficult. Archaic and Woodland cultural periods are minimally represented in SHAARD. Diagnostic projectile points recovered from the FY2017 HPF survey have improved the deficiency of knowledge regarding the Late Archaic and Late

Woodland/Late Precontact periods to a degree. Limited information continues to impede our understanding of the Paleoindian, Middle Archaic, Middle Woodland, and Protohistoric periods in Fulton County. It is important to note that the current distribution of dateable components for Fulton County still may not accurately represent occupation patterns as professional archaeological surveys have been rare in the county. Professional archaeological surveys, especially those associated with Federal permitting, have helped build the cultural chronologies in other counties by requiring investigations in areas that would not have otherwise been targeted by researchers. Another potential reason that the cultural phase representations may be skewed for Fulton County is due to sampling bias. Many of the surveys conducted have been on similar upland landforms rather than a more representative sample of distinct landform types within the county. Finally, the activity of collectors likely further skews this distribution since few private collections are added to the SHAARD or professionally documented. Efforts to systematically document these collections could pay major dividends in understanding regional cultural history (Nolan et al. 2018; Shott 2008; Shott and Nolan 2016; Shott et al. 2018). These factors illustrate the importance of HPF surveys especially in data deficient areas such as Fulton County.

#### LANDFORM DISTRIBUTION AND ECOTONES

Although limited, the results from the 924 acres of the FY2017 HPF survey show Early Archaic, Late Archaic, and Late Woodland/Late Precontact presence in the county across several landform types (Table 6). The distribution among landforms may suggest differential use through time. No evidence of the Paleoindian presence was recovered in this survey. Diagnostic precontact artifacts suggest Early Archaic and Late Woodland/Late Precontact use of lake, outwash, and till plains. Late Archaic use of till plains also is suggested by this survey.

**Table 6. Precontact Dated Sites by Landform and Soil Association.**

Landform	Soil Association	Sites and Cultural Periods
Lake, Outwash, and Till Plains	Metea-Markton-Crosier	12FU112 (Late Woodland/Mississippian), 12FU115 (Early Archaic)
Till Plains	Riddles-Crosier-Oshemo	12FU66 (Late Woodland/Mississippian), 12FU68 (Late Archaic)

Of the 11 surveyed areas, seven had a precontact component with more than three artifacts. SAs 1, 5, and 7 yielded 79.8% (n=75) of all precontact artifacts recovered from the survey areas. The proximity of precontact sites to different ecotones (micro-ecologies) is important to consider when evaluating the access to certain natural resources in the past. More than 60% of Fulton County sites were located on soils typical of prairies, and soils typical of forested regions. Both prairie (Mollisols) and forested (Alfisols) soils are represented in all 11 survey areas (Figure 3). There are a few locations where a combination of three or more soil suborders create an ecotone, on the landscape. These specific environmental settings offered a diversity of resources that were available for exploitation for subsistence and other aspects of daily life.

#### EARLY HISTORIC SITES AND SETTLEMENT

One of the seminal events that occurred in Fulton County was the forced removal of resident Potawatomi populations in 1838 (Citizen Potawatomi Nation Cultural Heritage Center 2022; Hamilton 1996; Thorpe 2003). The removal of Potawatomi people along the Trail of Death to eastern Kansas allowed previously populated land in northern Indiana to become open to Euro-American settlement by the mid-nineteenth century. Archaeological evidence for the Trail of Death, however, was not identified during the FY2017 HPF survey. Although the presence of the Potawatomi had declined, the vast majority of western expansion into Fulton County did not take place until the late nineteenth century with the arrival of the railroad to Rochester, Indiana, which connected the towns of Logansport, Kewanna, and Grass Creek by 1883 (Henning 1987:xiii). By 1902, the Cincinnati, Richmond, Muncie Railroad was constructed, further increasing availability of land for Euro-American settlement in Fulton County.

In line with the history of the railroads in northern Indiana, archaeological evidence from the FY2017 HPF grant project demonstrates that Euro-American settlement of Fulton County accelerated by the late nineteenth century. Most archaeological evidence suggests that these early settlers were focused on farming and likely went about clearing lands and draining wetlands to improve the agricultural potential of Fulton County. Substantial historic artifact assemblages were identified at sites 12FU65 (SA 1), 12FU67 (SA 1), 12FU98 (SA 3), 12FU126 (SA 6), and 12FU139 (SA 7) (Table 7). All of these sites represent mid-nineteenth through early twentieth century rural residences or

farmsteads. Artifact densities are moderate to high, and assemblages include a range of functional groups from domestic food storage and serving to architectural debris. Several identified sites did yield artifacts with mid-nineteenth century manufacturing ranges, such as pearlware and some transfer-print whitewares, possibly suggesting occupation as early as the mid-nineteenth century. All of these sites, excluding 12FU126, were located in close proximity to a structure as illustrated on the 1883 historic atlas (Kingman 1975).

**Table 7. Survey Areas with Precontact and Historic Artifacts in Fulton County.**

<b>Survey Area</b>	<b>Historic Artifact Qty</b>	<b>Precontact Artifact Qty</b>
SA 1	595*	49
SA 2	21	4
SA 3	102*	0
SA 4	506	1
SA 5	7	10
SA 6	250	1
SA 7	238	16
SA 8	3	4
SA 9	79	4
SA 10	1	0
SA 11	4	5
<b>All Survey Areas</b>	<b>1,806</b>	<b>94</b>

\* This count does not include uncollected brick fragments

By 1907, the structures on the 1883 atlas (Kingman 1975) at sites 12FU67 and 12FU98 are no longer illustrated in atlas maps (Geo. A. Ogle & Co. 1907), suggesting that these farmsteads were abandoned by around the turn of the twentieth century. The presence of artifacts with twentieth century manufacturing dates may indicate that related activities or dumping continued in some areas after the site ceased to operate as a residence. Site 12FU139 is interesting because it has a different structure illustrated in 1907 (Geo. A. Ogle & Co. 1907), compared to 1883 (Kingman 1975), which may indicate construction of a new residence but continuation of the farmstead. Site 12FU126 is anomalous as no cartographic evidence exists to suggest a structure ever stood close to the site boundary, despite ample artifactual evidence of typical domestic activities. This site may reflect the location of an outbuilding associated with a nearby farmstead or could simply reflect a nineteenth through early twentieth century dump site.

One of the goals of this survey was to investigate some of the GLO sites first reported in the late eighteenth and early nineteenth centuries (General Land Office Surveys 1795-1840). Five survey areas (6, 7, 8, 10, and 11) overlapped or encompassed the approximate boundaries of three GLO sites. GLO site 12FU22 was first reported by surveyor Sylvester Sibley in 1834 as “Mr. William Martin’s crop” (General Land Office Surveys 1795-1840). The site was then classified by Maust and Cochran (1989) as a historic agricultural field. Sites 12FU36 and 12FU37 were first reported by surveyor Austin W. Morris in 1834 as “Old Sugar Camp[s]” (General Land Office Surveys 1795-1840). Later, Maust and Cochran (1989) classified 12FU36 as a historic sugar camp and site 12FU37 as an unknown Native American sugar camp.

Although there were a few sites discovered during this survey in the general vicinity of the three GLO sites, they do not appear to represent the remains of these sites as they were originally reported (General Land Office Surveys 1795-1840). Therefore, this survey provided little archaeological evidence to confirm the location, or integrity, of these GLO sites. This lack of evidence is likely due to the ephemeral nature of these site types. If evidence of the agricultural field or sugar camps was present it was likely too subtle to be detected.

**CONCLUSIONS AND RECOMMENDATIONS**

This project included the investigation of the archaeological resources of Fulton County, Indiana, with a focus on four south-central townships (Henry, Liberty, Union, and Wayne), and GLO sites in Rochester Township. The overall project area was selected due to the lack of known archaeological sites in SHAARD and the identification of Fulton County as a data deficient county. The project goals addressed in this article were increasing the site database, refining the cultural chronology for the county, examining evidence for early Euro-American settlement, exploring potential Potawatomi settlements, and investigating multiple GLO sites (General Land Office 1795-1840).

Sites discovered by the FY2017 HPF grant investigation vary from isolated finds to dense artifact scatters. Since few large surveys have been conducted within the county prior to this current survey, it is difficult to compare these results with past surveys within the county. However, surveys in the surrounding counties of northern Indiana have demonstrated that variability in land-use patterns, both precontact and historic, occurred and are detectable in the archaeological record (e.g., Balough et al. 2016, 2017; Clark et al. 2017; Leeuwrik et al. 2015, 2016; Macleod et al. 2015; Purtill et al. 2021). Based on past results, it is likely that variation in soil associations, and by proxy landforms, and ecological resources influenced the habitability of the county.

The presence of the Tippecanoe River, its tributaries, and the variety of lakes were likely also a factor of precontact and historic settlement in the area over time. At Euro-American contact, the county consisted of Oak-Hickory forest and wetlands with minor amounts of Beech-Maple forest. During precontact periods, wetlands were economically important and appear to have attracted people for seasonal resources (Surface-Evans 2015). Although wetland resources were attractive to both precontact and historic groups, variable boundaries of natural wetlands would have restricted land resources until large-scale efforts to drain wetlands were conducted after Euro-American settlement. The constraint of wetlands appears to have concentrated population groups on elevated, dry landforms such as sand dunes, or “sand hills” as they are colloquially called, during precontact and historic periods (e.g., Purtill et al. 2021; Surface-Evans 2015).

The majority of the precontact components identified during this survey were non-diagnostic, so temporal interpretations of potential patterns are limited. However, four diagnostic artifacts (Figure 4) were recovered including an Early Archaic corner-notched St. Charles Dovetail point (Site 12FU115), a Late Archaic Brewerton Side Notched point (site 12FU68), and two Late Woodland/Late Precontact Madison points (sites 12FU66 and 12FU112) (Justice 1987), adding to the cultural chronology for Fulton County.

Unfortunately, resurvey of areas reported to contain GLO sites (General Land Office Surveys 1795-1840; Maust and Cochran 1989) in Rochester Township (12FU22, 12FU36, 12FU37) provided little archaeological evidence to confirm the location, or integrity, of these sites. Several newly discovered sites were identified in the general vicinity of the reported GLO sites, but they do not appear to represent the remains of these sites as reported in the late eighteenth through nineteenth centuries. Site 12FU22 was identified as an agricultural field, thus archaeological evidence may be lacking. Both sites 12FU36 and 12FU37 were reported to be ‘old sugar camps’ that, again, may have left sparse archaeological evidence. The lack of confirmation during this survey should not be interpreted to mean that evidence for these GLO sites does not exist, but rather that additional investigation may be needed to detect their presence. For example, future geophysical or geochemical studies may reveal evidence of intact features or signatures that would not be represented in the current archaeological record (e.g., Nolan 2014; Roos and Nolan 2012).

By the middle to end of the nineteenth century, following removal of American Indian groups from northern Indiana, Euro-American settlement in Fulton County increased in magnitude. Much of this increase is in response to the establishment of railroad networks that would have opened northern Indiana to potential settlement. Archaeological evidence and historical documentation suggest numerous mid-nineteenth through early-twentieth century rural residences or farmsteads across the landscape in Fulton County, especially after 1876. The fact that several structures illustrated on the 1883 atlas were no longer extant on the 1907 atlas also suggests that many of these early historic sites were short lived and likely subject to family relocation or land consolidation efforts.

As a result of the FY2017 HPF grant survey, six sites (12FU65, 12FU67, 12FU68, 12FU98, 12FU126, and 12FU139) were recommended as potentially eligible for listing on the Indiana Register of Historic Sites and Structures (IRHSS) and the National Register of Historic Places (NRHP) (Table 8). Four sites contained diagnostic projectile points including two sites from SA 1 (12FU66 and 12FU68) and two sites from SA 5 (12FU112 and 12FU115). The presence of diagnostics, and reports from local landowners of previously discovered precontact artifacts, indicates that further research could yield important information about precontact settlement patterns in Fulton County.

**Table 8. Sites Recommended for Inclusion on the NRHP and IRHSS.**

Site	Cultural Period(s)	Site Type(s)
12FU65	Unidentified Precontact, Historic	Precontact Isolate, Historic Scatter
12FU67	Unidentified Precontact, Historic	Lithic Scatter, Historic Scatter
12FU68	Late Archaic, Unidentified Precontact, Historic	Lithic Scatter, Historic Scatter
12FU98	Historic	Historic Scatter
12FU126	Historic	Historic Scatter
12FU139	Historic	Historic Scatter

Five of the sites recommended for the IRHSS and NRHP have historical components dating to the mid-nineteenth through early twentieth century and are related to rural residences or farmsteads. Therefore, they have potential for yielding information regarding the early historic lifeways and settlement of Fulton County and northern Indiana. The sixth site (12FU68) consisted of primarily precontact artifacts including one diagnostic, a Brewerton Side Notched point dating to the Late Archaic period. Although prior to the current investigations, there were five sites with Archaic components documented in Fulton County, three of those sites were either Unidentified Archaic period or Early Archaic period. Site 12FU68 shows the presence of the Late Archaic period occupation in Fulton County and has the potential to yield additional information on Late Archaic land-use patterns in the county.

Although documentation of the past use of Fulton County has been significantly improved through the FY2017 HPF survey, additional survey is needed to better reveal the complete history of the county. Future archaeological investigations should focus on identifying sites with diagnostic artifacts or sites that have a high potential for containing intact archaeological remains. Systematic documentation of private collections in the region would also substantially improve our understanding of the county's history in a very efficient fashion (see Shott 2008, and contributions in Shott et al. 2018 and Pitblado et al. 2022). Future surveys should also attempt to capture representative samples of the topographic, geomorphic, hydric, and texture properties of soils and landforms to determine if patterns of land use can be recognized in the archaeological record. Surveys designed in this way could add not only to our understanding of Fulton County, but could also help inform on patterns at the regional level such as northern Indiana or the upper Midwest.

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# AN ARCHAEOLOGICAL INVESTIGATION OF THE CALVERT AND PORTER WOODS NATURE PRESERVE, MONTGOMERY COUNTY, INDIANA

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[NOTE- At the time this article was written, all authors were with Ball State University.]

## **ABSTRACT**

The Applied Anthropology Laboratories (AAL) at Ball State University was awarded a FY2018 Historic Preservation Fund (HPF) grant to survey the Calvert and Porter Woods Nature Preserve (CPWNP), Montgomery County, Indiana. This HPF grant project investigated the archaeological resources of the nature preserve with a focus on documenting the archaeological and historic resources and developing a baseline of archaeological data for future use at CPWNP. A total of 117.8 acres (47.7 hectares) of forested land was surveyed, and 14 new archeological sites were identified. One previously recorded site was not relocated. New sites contained 50 artifacts, 21 of which were identified as precontact, 28 were identified as historic, and one faunal bone was identified. Site densities after survey have been calculated to one precontact site per 11.8 acres and one historic site per 39.3 acres. These 14 new sites displayed precontact and historic period characteristics that were represented in the artifact assemblage; however, no temporally diagnostic artifacts were recovered that conveyed specific cultural components.

## **INTRODUCTION**

The AAL conducted a data enrichment project for archaeological resources in the CPWNP in Montgomery County, Indiana, funded by a FY2018 HPF Grant (Grant 18FFY-03). As 42 acres of CPWNP is regarded as an old growth forest, this project provided a unique opportunity to archaeologically investigate a protected environment that has remained undisturbed by agriculture or modern development. The results were submitted to the Indiana Division of Nature Preserves (DNP) for use in future resource management planning. The project goals were to increase the number of sites in the State Historic Architectural and Archaeological Research Database (SHAARD), refine the cultural chronology for the county, examine evidence for early Euro-American settlement, and resolve inconsistencies and incomplete information found in SHAARD. This project will also help us to increase the understanding of precontact and historic occupations in Walnut and Franklin Townships.

## **BACKGROUND**

This section develops a framework to interpret the data collected during this project by reviewing the natural and cultural settings of the area. The background includes environmental and archaeological information for both Walnut Township, the location of CPWNP, and for Franklin Township, located less than one mile north of CPWNP. For this research, we surveyed the entire 117.8 acres of the CPWNP.

## **NATURAL SETTING**

The CPWNP is located in Walnut Township, Montgomery County, Indiana (Figure 1). This area is located within the Tipton Till Plain, which covers most of central Indiana (Wayne 1966). The current till plain and moraine landforms of central Indiana were created during the Wisconsin glaciation, which covered the area in a thick sheet of ice. Glaciation left the area nearly flat with poorly defined drainages that carried outwash to the south (Schneider 1966). Trafalgar Formation deposits were brought to the area by glaciers, including the Cartersburg till member, which covered the existing surface with sand and gravel.



Figure 1. Montgomery County within the state of Indiana (based on Yellowmap World Atlas 2015).

There are 26 documented chert outcrops in Indiana (Figure 2; Cantin 2008), in addition to the nearly ubiquitous gravel chert along streams in glaciated portions of the state (Moore 2008). Most chert outcrops are found in southern Indiana, due to glacial activity in northern and central Indiana, which has covered chert-bearing bedrock (Cantin 2008). Three types of chert found during this survey have outcrops within 10 to 93.5 kilometers (km) (6 to 58 miles [mi]) from CPWNP. The closest chert outcrops are Attica, which are located approximately 10 km (6 mi) northeast and 50 km (31 mi) northwest of CPWNP. Kenneth and Liston Creek cherts are located 83 and 93.5 km (51.2 and 58 mi) northeast of CPWNP (Cantin 2008). Jeffersonville chert outcrops approximately 122 km (76 mi) southeast from CPWNP. These four chert outcrops consist of exposed bedrock from three different bedrock systems. Attica chert is from Mississippian bedrock, Liston Creek and Kenneth cherts are from Silurian bedrock, and Jeffersonville chert is from Devonian bedrock (Cantin 2008). CPWNP consists of Mississippian bedrock that is made up of mostly siltstone, with some cherty and silty limestone and dolomite (Gutshick 1966:3).

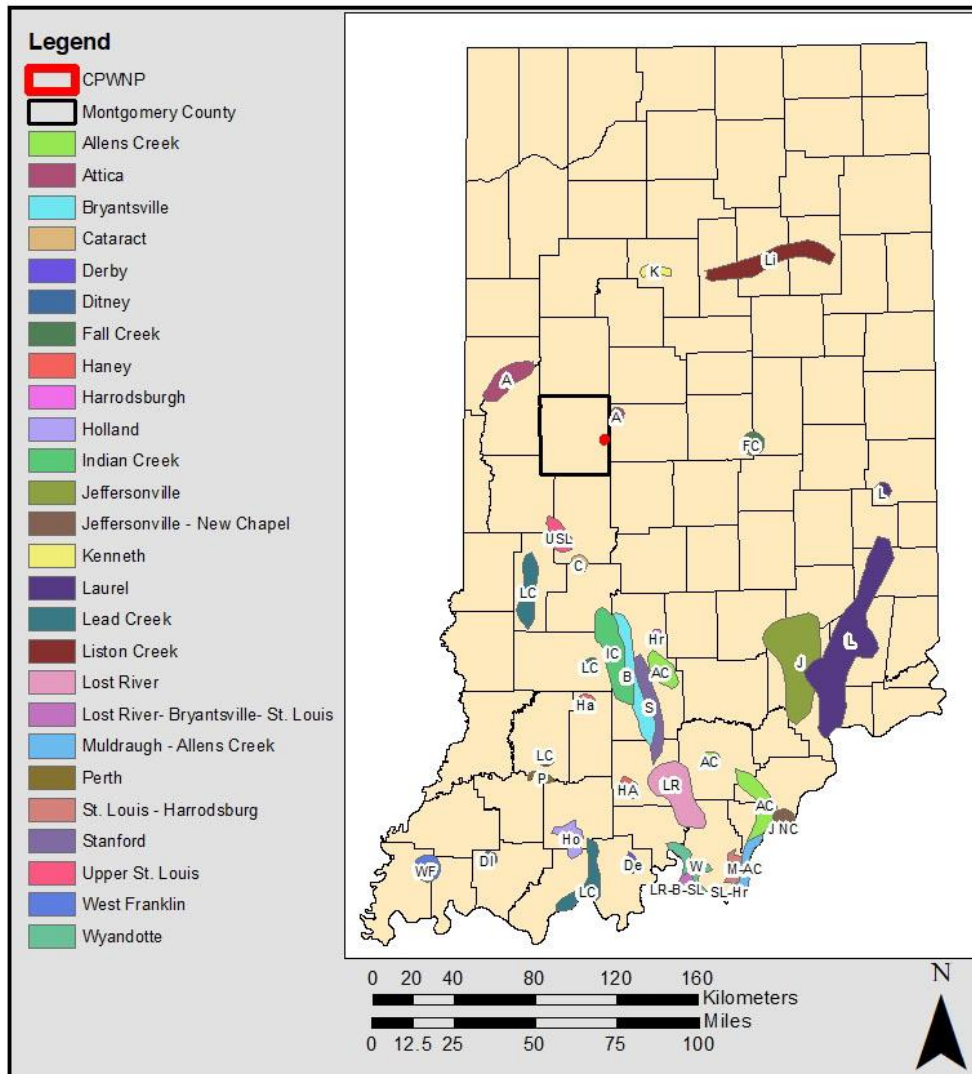


Figure 2. Chert outcrop locations in Indiana (digitized by Brad Painter from Cantin 2008).

The majority of soils found in Montgomery County are a product of either glacial or fluvial parent materials. Glacially deposited sediments of the ridge and ground moraines typically have a clay or silty texture, while kames and eskers consist of sands and gravels. Glacial-fluvial deposits in outwash plains and terraces range from silty to gravelly textures. The more recent fluvial deposits found on flood plains and river terraces are dominated by loamy textures (Hosteter 1989).

The CPWNP is made up of three soil types, Mahalasville silty clay loam, Starks silt loam, and Camden silt loam, all in the Mahalasville-Starks-Camden soil association (Figure 3). Soil compositions in Franklin and Walnut townships are organically rich and thick, which is ideal for agriculture, and are typically associated with glacial till plains, moraines, terraces, and outwash plains (Hosteter 1989). Additionally, several waterways, including the largest Sugar Creek, were carved out by glacial outwash, and act as drainages throughout the township. Ground water also is sustained in the thick soils and can be contained in depressions on the landscape (Bechert and Heckard 1966).



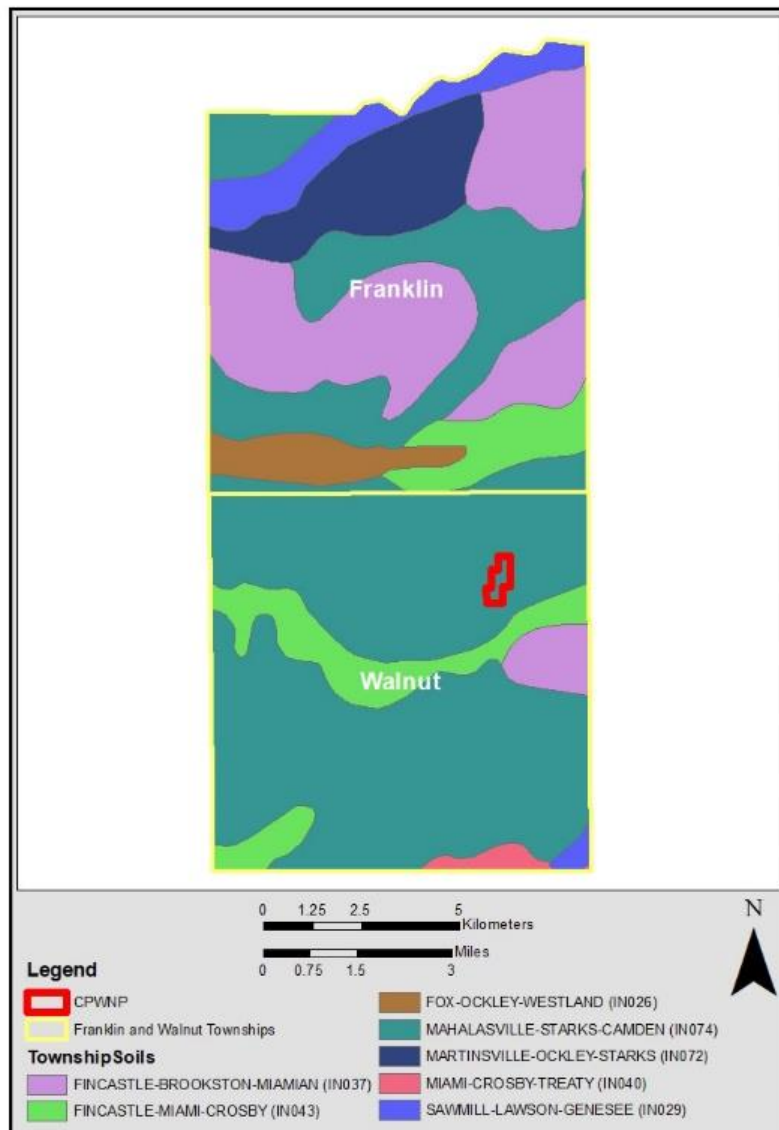


Figure 3. Soil Associations in Franklin and Walnut Townships (based on STATSGO, USDA/NRCS 2002).

Within Franklin and Walnut Townships, soils are classified into one of nine soil suborders (Figure 4). Specifically, Aquolls and Aqualfs soil suborders, within the Mollisol and Alfisol soil orders, respectively, predominate within the CPWNP (USDA/NRCS 2015a). Mollisols are thick, organic-rich soils that are naturally fertile and generally formed under prairie vegetation (USDA/NRCS 2015b:4-290). Aquolls are wet (aquic) prairie soils; frequently these soils have been artificially drained and converted to agriculture (USDA/NRCS 2015b:4-301). Alfisols are fertile soils developed in forested areas (USDA/NRCS 2015b:4-7). Aqualfs are wet (aquic) soils, typically found in flood plains and support forest vegetation, but many have been drained and cleared and are now used for agriculture.

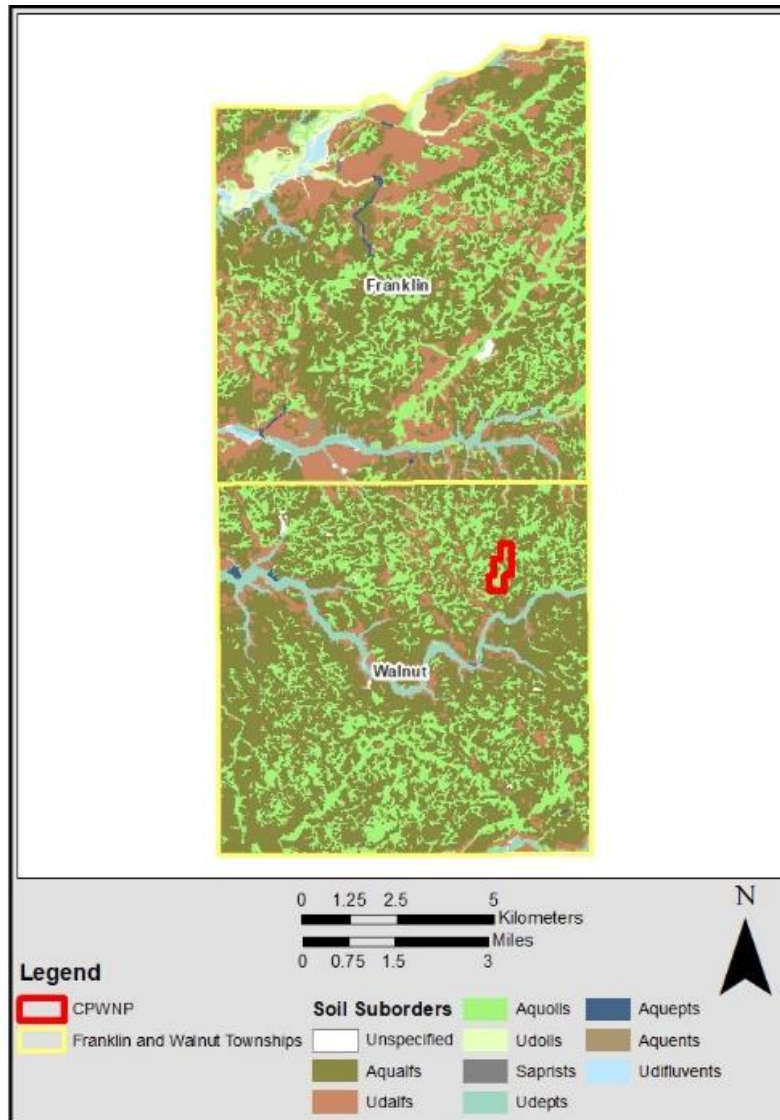


Figure 4. Soil suborders located within Franklin and Walnut Townships (based on USDA/NRCS 2015a).

#### ARCHAEOLOGICAL SETTING

There have been few large-scale surveys of Montgomery County. Two of the largest surveys in the county were surface surveys of 915 and 900 acres conducted by Ball State University's AAL in 2010 and 2013 respectively, funded by HPF grants. Together, these surveys identified 266 new archaeological sites, mostly on outwash and till plain landforms (Macleod and Donovan 2014; Murray et al. 2011). Only one survey area from these investigations was located in Walnut Township and resulted in the identification of two precontact and one historic isolated find sites (Macleod and Donovan 2014).

Evidence from previously recorded archaeological sites indicate that Franklin and Walnut Townships have been occupied as early as the Early Archaic period (ca. 8000 - 6000 BC) through the Late Woodland period (ca. 600-1200 AD), with some occupation in the Historic period. Both townships have been surveyed at a similar frequency, with eight previous archaeological investigations in Franklin Township and seven in Walnut Township. Only one of the investigations in Walnut Township reported archaeological sites, while five of the investigations in Franklin

Township encountered archaeological sites. A total of 24 archaeological sites have been recorded in Franklin Township, and 16 have been recorded in Walnut Township. Precontact sites (n=37) are documented at a higher rate than Historic sites (n=5). Seven sites were identified as unknown cultural or temporal components because the sites were collector-reported with few artifacts documented (Division of Historic Preservation and Archaeology [DHPA] 2007).

In Franklin and Walnut Townships, 20 precontact sites are categorized as unidentified precontact, meaning there were no diagnostic artifacts recovered belonging to a specific precontact temporal period. Late Archaic (n = 5) sites represent the most common component of identified precontact sites, followed by Late Woodland/Late Prehistoric (n=3), Early Woodland (n=2), Middle Woodland (n=2), Early Archaic (n=2), and Middle Archaic (n=1) (DHPA 2007).

Two Early Archaic sites (12MY32 and 12MY39) have been recorded in Franklin Township, with a Charleston Corner Notched point identified from site 12MY39 (DHPA 2007). One Middle Archaic site (12MY58) in Franklin Township shows a transition from Middle Archaic to Late Archaic with a Matanzas point (DHPA 2007; Smith et al. 2009). Five Late Archaic sites (12MY24, 12MY25, 12MY32, 12MY34, and 12MY58) have been recorded in Franklin Township, including one with a Matanzas-like point present (12MY58) (DHPA 2007; Holsten and Cochran 1984). Two Early Woodland sites (12MY24 and 12MY25) have been recorded in Franklin Township, both of which were recognized as mounds (DHPA 2007). Two Middle Woodland sites have been identified in Franklin and Walnut Townships, one with an identified Snyders point (12MY599) and the other with a point and point base consistent with Middle Woodland period characteristics (12MY32) (DHPA 2007; Macleod and Donovan 2014). Three Late Woodland sites (12MY32, 12MY35, and 12MY36) have been identified in Franklin and Walnut Townships, with a triangular point fragment from site 12MY32 and a side-notched point from site 12MY35 (DHPA 2007).

Three previously reported archaeological sites have been identified adjacent to or within CPWNP. These sites were identified and documented by a collector in 1978. Two sites, 12MY6 and 12MY7, are located 100 meters south of CPWNP and were identified as habitation sites without temporal characteristics. One historic house site (12MY5) was identified in the area of new growth forest of CPWNP. The archaeological site form lists historic house remains and brick scatters (DHPA 2007); however, no evidence of the site was seen during this investigation.

#### CALVERT AND PORTER WOODS NATURE PRESERVE (CPWNP) HISTORY

The original 42 acres of CPWNP is considered an Indiana “old growth” forest, which is a forest with trees 150 to 200 years old. It is considered “one of the highest quality old growth woods in the state” and one of 11 old growth forests in Indiana on non-private land (Indiana Division of Forestry 2017). According to historic plat maps, the land which is now known as CPWNP once belonged to H.F. Beck (Cowles and Titus 1864). Beckville Woods, the original 42 acres of old growth forest (Grunden 2005), was designated as a National Natural Landmark in 1974 by the National Park Service (National Park Service 2018). In 2004, an additional adjacent 75.2 acres of new growth forest was transferred to the state, which nearly tripled the size of CPWNP (Figures 5, 6). The 75.2 acres added in 2004 included pasture land with a windmill and water storage tank foundation (Tom Swinford, personal communication 2019). In 2014, CPWNP was dedicated as a state nature preserve (Indiana Division of Nature Preserves 2014).

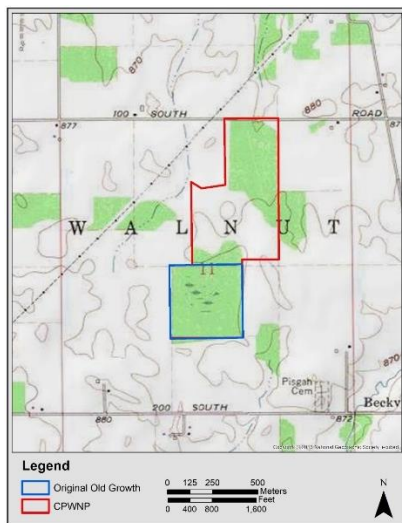


Figure 5. Blue square represents the original 42 acres of Beckville Woods in CPWNP, with additional 75.2 acres of CPWNP outlined in red (Based on image provided by Tom Swinford, Indiana DNP).

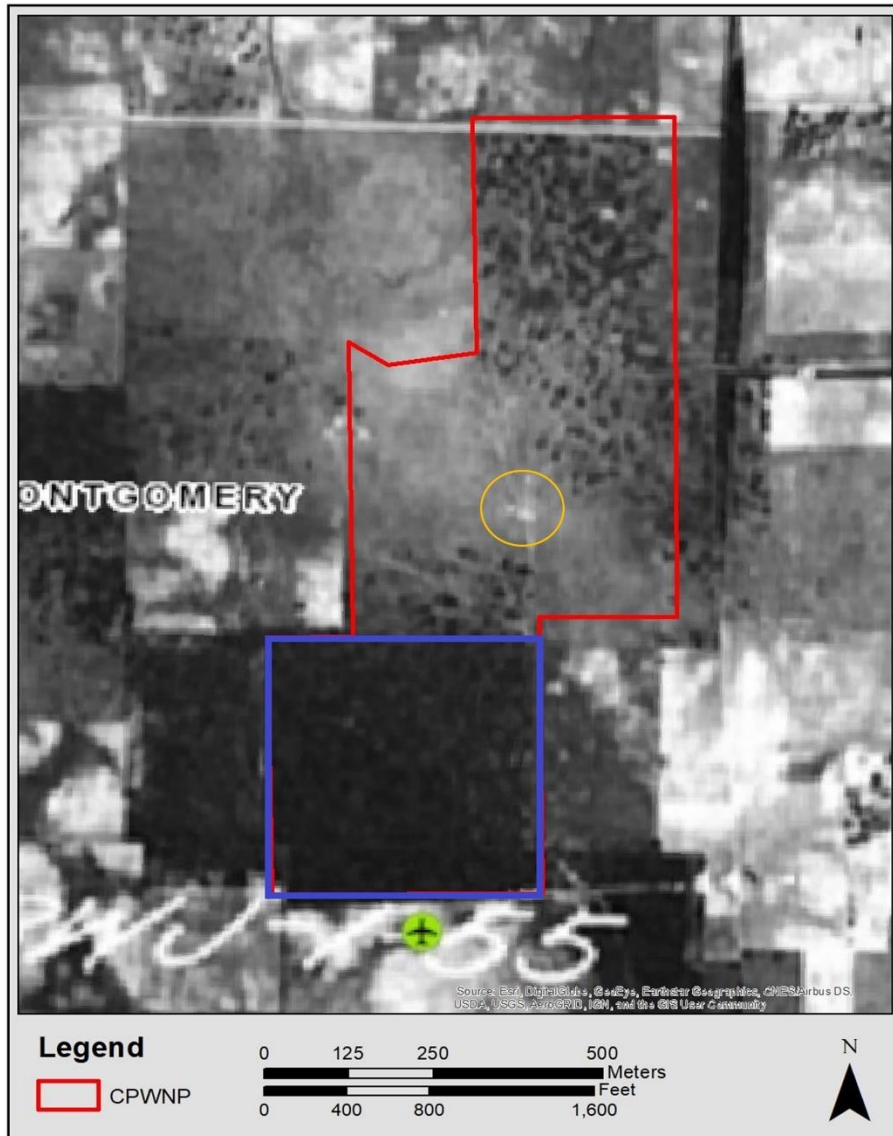


Figure 6. 1939 Aerial Photograph of CPWNP. Yellow circle shows the location of the windmill feature. Blue square shows original 42 acres of Beckville Woods, with additional 75.2 acres of CPWNP outlined in red (Indiana Geological and Water Survey, accessed February 2019).

## **METHODS**

This project was conducted between July 2 and September 16, 2018 by AAL archaeologists and student field technicians, with Christine Thompson and Kevin C. Nolan as Principal Investigators. The entirety of CPWNP is forested with less than 30% ground surface visibility and thus, per Indiana DHPA guidelines, was surveyed using shovel test pits (STPs) spaced systematically at 15-meter intervals. STPs measured approximately 30 cm in diameter and were excavated to sterile subsoil, or to 50 cm deep. All excavated soil was screened through ¼-inch wire mesh. If artifacts were recovered in a STP, radial STPs were excavated at 5-meter intervals in each cardinal direction until two consecutive negative STPs were identified. All artifacts encountered were collected, bagged, and taken back to the lab for analysis.

All positive STPs were recorded with a Trimble GeoXT with a minimum of 20 readings logged. GPS data was post-processed to sub-meter accuracy using GPS Pathfinder Office series 5.3 software, exported to ESRI shapefile format (UTM NAD83 Zone 16N), and imported into ArcGIS version 10.6. In addition, extensive field notes written by Christine Thompson and photographs taken by student field technicians documented the progression of the survey.

## **RESULTS**

A total of 117.8 acres, the entirety of CPWNP, was surveyed. A total of 2,205 STPs were excavated, and 14 new sites (12MY708 through 12MY721) were identified. Previously recorded site 12MY5 was not relocated. Ten of these sites were identified as precontact sites with an unidentified temporal component. Three sites were identified as historic sites with two of these having datable artifacts. One site was identified as an unknown temporal site due to a single faunal bone found. The site types were identified as either isolated finds (n=8), lithic scatters (n=5), or historic scatters (n=1). A total of 50 artifacts were recovered consisting of lithic, brick, metal, glass, and faunal materials.

### **ARTIFACTS**

A total of 50 artifacts, including 21 precontact, 28 historic, and one faunal bone, were recovered from CPWNP (Table 1). Of the 21 precontact artifacts, 18 were flakes and angular shatter made of Silurian and Mississippian chert. Out of the 15 flakes, three are complete, five are medial, six are distal, and one is proximal. A complete flake is an entire flake from the striking platform to the distal terminating edge. A medial flake is the center of a flake between, but not including, the striking platform and the terminating edge. A distal flake is the sharp, terminating edge of a flake (Andrefsky 2005:255-261). The presence or absence of striking platforms and dorsal scars on the complete flakes can explain what stage of reduction the flake was involved in (Andrefsky 2005). One artifact is a complete, finished, biface made of Mississippian chert (Figure 7), however, it is not diagnostic due to a lack of culturally identifiable features such as notches or a stem. Two artifacts were identified as heat-damaged cores consistent with Attica chert (Figure 7). One piece of heat treated angular shatter was identified at CPWNP. Heat treating chert is done prior to reduction in order to strengthen the chert for chipping or knapping (Andrefsky 2005:256). Two cores and a distal flake were identified as heat damaged.

**Table 1. Artifacts from CPWNP.**

<b>Precontact</b>	<b>No.</b>	<b>Historic</b>	<b>No.</b>	<b>Faunal</b>	<b>No.</b>
Biface	1	Brick, fragment	3	White-tailed deer phalange	1
Core, heat damaged	2	Brick, fragment, machine-made	1		
Angular shatter	2	Brick, complete, handmade	1		
Angular shatter, heat treated	1	Brick, complete, machine-made	1		
Flake, complete	3	Glass, aqua	20		
Flake, medial	4	Glass, clear (bottle)	1		
Flake, medial, heat damaged	1	Metal	1		
Flake, distal	5				
Flake, distal, heat Damaged	1				
Flake, proximal	1				
<b>Total</b>	<b>21</b>		<b>28</b>		<b>1</b>





*Figure 7. A biface from site 12MY716 and two heat damaged cores from site 12MY714, all three consistent with Attica chert (photo by Kelli Wathen, Ball State University).*

A total of 28 historic artifacts were recovered from the survey area, and 21 are temporally diagnostic. Curved aqua glass, possibly from one container, was collected from site 12MY721 (Figure 8). Aqua glass was mass-produced from ca. 1800 - ca. 1910, and was a predominate glass color throughout and into the late nineteenth century, when manganese began to be added to create clear glass in ca. 1875 (Intermountain Antiquities Computer System [IMACS] 1984:472.18,19). The other diagnostic artifact is a complete, clear glass, octagonal bottle collected from site 12MY719 (Figure 8). The bottle was determined to be machine-made due to the presence of a suction scar and cup bottom, with a lug cap closure, and octagonal beveled base. Embossing on the base reads “1 ½ FL OZ. 2” with the Owens-Illinois Glass Co. makers-mark of an “I” encircled by an “O.” Using the makers-mark, design, and production method, the bottle can be dated to 1954 or later (IMACS 1984:472.9; Lindsey 2018).



Figure 8. Owens-Illinois bottle found at site 12MY719 and aqua glass found at site 12MY721 (photo by Kelli Wathen, Ball State University).

Other historic artifacts that are not diagnostic include a threaded iron bolt with two washers and a square nut from site 12MY711. Also found at the site were one handmade brick, one machine-made brick, and brick fragments. The machine-made brick was determined to be a stiff-mud brick and was manufactured by an extruding process where a machine would form the clay into a long bar or column, which would be passed through a die onto a cutting table to be cut by a series of wires. Striations are seen crosswise on the cut sides of the bricks, showing the direction the wires moved while cutting the bar into bricks. The brick also exhibits rounded corners and a smooth surface on four sides of the brick. This occurs when lubricants, such as water and steam, are used in conjunction with the metal die and pressure (Gurcke 1987).

One brick fragment found at site 12MY711 is stamped with the letters “WFORDSV” “IAN” which most likely spelled out Crawfordsville, Indiana (Figure 9). There were four brick companies in Crawfordsville during the late nineteenth and early twentieth centuries. The Pressed Brick Company of Crawfordsville had multiple kilns that held over 150,000 bricks each. The Standard Brick Company, incorporated in 1901, made roughly 20,000 pressed bricks per day that were used in Indianapolis and as far away as Chicago. The Standard Brick Company acquired new owners in 1919 and was renamed the Standard Shale Brick Company. The Poston Paving Brick Company was established in 1901 and made nearly 600,000 paving bricks per month, which paved the streets of many cities in the United States. A fourth brick manufacturer, Crawfordsville Shale and Brick Company, was also in business during this time (Bowen 1913).



Figure 9. Brick fragment stamped with "WFORDSV" "IAN" which most likely spelled out Crawfordsville, Indiana (Photo by Kelli Wathen, Ball State University).

#### CHERT

Silurian (n=11), Mississippian (n=4), and Devonian (n=1) cherts were all identified as raw materials for precontact artifacts. Nine artifacts were identified as Liston Creek chert (Silurian). Liston Creek is generally a medium quality chert, which fractures depending on the grain size, and was heavily used throughout all precontact periods (Cantin 2008:55). Two artifacts were identified as Kenneth chert (Silurian). Kenneth chert is considered a medium to low quality chert, due to mineral and fossil inclusions often causing fractures when worked (Cantin 2008:47). Four artifacts were identified as Attica chert (Mississippian). Attica chert was used regularly throughout the Archaic but saw a drop off in use during the Woodland period, picking up again in the Late Woodland (Cantin 2008; Moore 2008). Attica chert can fracture irregularly due to internal stress fractures and edges can be brittle, but nearly flawless sources can be found and worked (Cantin 2008:17). One artifact was identified as Jeffersonville chert (Devonian). Jeffersonville chert fractures often while being worked and does not make high quality artifacts due to brittle edges (Cantin 2008:43).

This chert analysis shows that, with the exception of one piece, the chert identified in the CPWNP artifacts came from northern Indiana outcrops. No high quality cherts were recovered from CPWNP. This seems to indicate that during the precontact use of CPWNP there was an apparent preference for local rather than exotic cherts, which may indicate either a lack of mobility or small home ranges and social exchange (Moore 2008:85).

#### SITES

Fourteen new archaeological sites (12MY708 to 12MY721) were recorded in CPWNP. All but two of these sites, a precontact isolate and lithic scatter, are located in the additional 75.2 acres of forest added to CPWNP in 2004 (Grunden 2005). Two newly identified sites contained historic diagnostic artifacts, and one site was interpreted to contain a historic scatter. Six sites were identified as lithic scatters, and five sites yielded isolated finds. One site was not culturally identifiable as it contained a single faunal bone. All 14 sites were found within the till plain. Ten sites were located on Starks silt loam (SIA) soil, which is a poorly drained Aqualf (Hosteter 1989). Four sites were located on Mahalassville silty clay loam (Mb) soil, which is a very poorly drained Aquoll. Both soil types are rated by the USDA as good for crops and tree growth, but not for dwellings due to frequent ponding (Hosteter 1989). Both of these



soil types are in the Mahalasville-Starks-Camden soil association (Figure 3). This indicates persistent use of areas of wet prairie and, especially, wet forestland.

#### Beckville Woods

Two sites (12MY708 and 12MY709) were found in the original 42 acres of Beckville Woods that are considered to be an old growth forest (Indiana Division of Forestry 2017). These two sites are described in detail below.

##### *12MY708*

Site 12MY708 was identified as a precontact lithic scatter located near the southwest corner of CPWNP. There were six artifacts recovered from the site, consisting of four precontact flakes and two pieces of angular shatter. One medial flake was identified as an unknown chert type. One medial flake was identified as Mississippian chert consistent with Jeffersonville chert. One medial and one distal flake, and one piece of angular shatter were identified as Silurian chert consistent with Liston Creek chert. One piece of angular shatter was identified as Silurian chert consistent with Kenneth chert (Cantin 2008).

##### *12MY709*

Site 12MY709 was recorded as a precontact isolated find located in the southwest corner of the CPWNP. The single artifact recovered was identified as a distal flake of unknown chert.

#### 2004 Addition to CPWNP

The remaining 12 sites were found in the additional 75.2 acres added to CPWNP in 2004 (Grunden 2005). These 12 sites are described in detail below.

##### *12MY710*

Site 12MY710 was recorded as a precontact isolated find located in the west central area of CPWNP. The single artifact recovered was identified as a medial, heat-damaged flake consistent with Kenneth chert (Cantin 2008).

##### *12MY711*

Site 12MY711 was identified as a historic scatter located in the central area of the CPWNP. The seven artifacts recovered include one complete handmade brick, one complete machine-made brick, three brick fragments, and an iron threaded bolt attached to two washers and a square nut. Two features were identified as associated with this site, a nonfunctioning, historic, metal, standing windmill (Figure 10) and a water storage tank foundation (Figure 11).

Metal windmills were first produced in the 1870s; however, they were not commercially popular until the 1890s. Windmills in the Midwest during the nineteenth and twentieth centuries were used to provide water to much of the rural populations of America (Baker 1985:51). They were useful in rural agricultural settings because they required very little oversight. The blades of the windmill could change their direction and speed according to the wind so that they would not be destroyed by high winds (Baker 1985:7). The water pumped up from underground likely would have been used for domestic purposes or pumped into a trough for livestock (Baker 1989:217). As there is little evidence of a residence nearby, except for the collector-reported house site of 12MY5 on the northern border of 12MY711, this water storage tank foundation may have been used to provide water for livestock.



*Figure 10. Windmill feature at site 12MY711 (Photo by Sean Coughlin, Ball State University).*



Figure 11. Water storage tank foundation feature at site 12MY711 (Photo by Sean Coughlin, Ball State University).

#### 12MY712

Site 12MY712 was recorded as an isolated find of an unknown temporal period located in the west central area of CPWNP. The single artifact recovered was identified as the proximal end of the left first phalanx of a white-tailed deer (*Odocoileus virginianus*).

#### 12MY713

Site 12MY713 was recorded as a precontact isolated find located in the central area of CPWNP. The artifact recovered was categorized as a single complete flake consistent with Liston Creek chert (Cantin 2008). This site is at the southern border of site 12MY5, a historical house site reported by a collector. During survey, no house remains or brick scatters were seen in this area.

#### 12MY714

Site 12MY714 was identified as a precontact lithic scatter located in the central western portion of the survey area. The artifacts recovered from 12MY714 were identified as two heat damaged cores of Mississippian chert consistent with Attica chert, a distal flake consistent with Attica chert, and a medial flake of unknown chert (Cantin 2008).

#### 12MY715

Site 12MY715 was recorded as a precontact isolated find located on the central western area of the CPWNP. The single artifact recovered was categorized as a distal flake of Silurian chert consistent with Liston Creek chert (Cantin 2008).



#### *12MY716*

Site 12MY716 was identified as a precontact lithic scatter located in northern center area of the CPWNP. The artifacts recovered include a non-diagnostic biface (Figure 7) of Mississippian chert consistent with Attica chert and a heat treated piece of angular shatter of Silurian chert consistent with Liston Creek chert (Cantin 2008).

#### *12MY717*

Site 12MY717 was recorded as a precontact isolated find located in the center of the northern area of CPWNP. The artifact was identified as a Silurian complete flake consistent with Liston Creek chert (Cantin 2008).

#### *12MY718*

Site 12MY718 was identified as a precontact lithic scatter located in the northeastern area of the CPWNP. Recovered artifacts include a heat damaged distal flake and a proximal flake of unknown chert (Cantin 2008).

#### *12MY719*

Site 12MY719 was recorded as a historic isolated find located near the northern border of the CPWNP. The artifact recovered was identified as a machine-made, Owens-Illinois, rectangular, clear glass bottle with an octagonal base that dates to 1954 or later based on the makers-mark (Figure 8) (IMACS 1984:472.9; Lindsey 2018).

#### *12MY720*

Site 12MY720 was identified as a precontact lithic scatter located near the northwestern corner of the CPWNP. The artifacts recovered from 12MY720 are a distal flake and a complete flake, both of Silurian chert consistent with Liston Creek chert (Cantin 2008).

#### *12MY721*

Site 12MY721 was recorded as a historic scatter located near the northeastern border of the CPWNP. The artifacts recovered from 12MY721 were 20 pieces of curved aqua glass. Aqua was most popular from ca. 1800 - ca. 1910 (IMACS 1984:472.18). The pieces of aqua glass were likely from the same vessel before fracture based on the hue and curved shapes; however, the artifacts could not be pieced back together.

#### *Density*

The total CPWNP survey area consisted of 117.8 acres of forested land. The 14 identified sites covered a total of 2075 m<sup>2</sup> (0.5 acres), and the average site area was 148.2 m<sup>2</sup> (0.04 acres). The eight isolated finds had a site area of 79 m<sup>2</sup> or 0.02 acres each. The historic and lithic scatters ranged from 173 to 442 m<sup>2</sup> or 0.04 to 0.1 acres. On average, CPWNP has a density of 1 site per 8.4 acres, and sites covered 0.4 % of the surface area of CPWNP.

### **CONCLUSION AND RECOMMENDATIONS**

This project investigated archaeological resources of CPWNP in Montgomery County, Indiana. As stated previously, the project goals were to increase the number of Montgomery County sites in SHAARD, refine the cultural chronology for the county, examine evidence for early Euro-American settlement, increase understanding of precontact and historic occupations in Walnut and Franklin Townships, and to resolve inconsistencies and incomplete information found in SHAARD. The results of these goals are addressed below.

A total of 117.8 acres were surveyed during this project, and 14 new sites were discovered and added to SHAARD. Based upon the assemblages recovered, the 14 new sites identified were either isolates or scatters and had no temporal or cultural identity beyond precontact and historic designations. Therefore, it was recommended that none of these sites are considered potentially eligible for inclusion in the National Register of Historic Places based upon the criteria for evaluation (36 CFR 60.4[a-d]). Also, none of these sites were considered eligible for the Indiana Register of Historic Sites and Structures. We recommended that no further work is needed for the sites identified in CPWNP as part of this project.

This investigation adds little to the cultural chronology of Montgomery County due to the lack of artifacts with identifiable cultural affiliation; however, it does add precontact presence and additional historic presence to the CPWNP, and Walnut Township, based on the 14 archaeological sites and 50 identified artifacts recovered. These results are consistent with the previous archaeological data from Walnut and Franklin Townships, with unidentified precontact sites the most common recorded. In addition, the presence of a windmill and water storage tank foundation show that sometime during the late nineteenth and twentieth century the land that would become CPWNP was used for agricultural or habitation purposes.

The cultural resources identified in CPWNP yielded 21 precontact artifacts, 28 historic artifacts and one faunal bone. The precontact artifacts are lithic artifacts, including cores, angular shatter, and flakes, along with a single non-diagnostic biface. The chert came primarily from local sources, including Attica, Kenneth, and Liston Creek, that outcrop in neighboring counties. There were no precontact features identified in these sites indicating there may not have been permanent settlement in CPWNP during precontact times. This is not totally surprising as CPWNP lies over half a mile north of the nearest water source, the Walnut Fork of Sugar Creek.

The historic artifacts include bricks and brick fragments, metal, glass pieces, and a whole bottle. One of the bricks was machine-made, one was handmade, and one fragment was possibly made at a factory in Crawfordsville, Indiana based on the stamped “WFORDSV” “IAN” on the surface. The glass pieces are aqua glass, which were mass produced from ca. 1800 - ca. 1910 (IMACS 1984:472.18). The whole, clear glass bottle was determined to be machine-made due to the presence of a suction scar and cup bottom, it had a lug cap closure, and octagonal beveled base. Embossing on the base reads “1 ½ FL OZ. 2” with the Owens-Illinois Glass Co. makers-mark of an “I” encircled by an “O.” Using the makers-mark, design, and production as evidence for dating, the bottle dates to around 1954 or later (IMACS 1984:472.9; Lindsey 2018).

Due to the small size of the sites identified in CPWNP, indicating little human impact, the project does not refine our understanding of landscape change. The original 42 acres of Beckville Woods, largely untouched for 150 to 200 years, is a unique and protected environment in Indiana, undisturbed by agriculture or modern development. Both new sites identified in Beckville Woods were identified as precontact, with one small lithic scatter and an isolated find. The 75.2 acres added in 2004 contain 12 sites, including a windmill and adjoining water storage tank foundation. The 12 sites included eight precontact isolates and small lithic scatters, three historic isolates and scatters, and a faunal bone of unknown time period. It remains unknown what impact the people who used these sites and features had on the landscape because there is only a small amount of lasting evidence. The lack of human interference has allowed both sections of the woods to grow naturally and abundantly.

Prior to this investigation, there were three collector-reported sites (12MY5, 12MY6, and 12MY7) within or adjacent to CPWNP. Site 12MY5 was recorded as “brick predominates” from a supposed historic house that was mapped within the boundaries of CPWNP, but the location may be inaccurate (DHPA 2007). During this survey, a precontact isolated find (12MY713) was identified on the southern border of 12MY5, but no house remains or brick scatters were observed in this area. Bricks, in addition to a windmill and possible water storage tank feature, were found at newly discovered site 12MY711, located 140 meters southeast of site 12MY5. However, the original site card for 12MY5 does not indicate a windmill or storage tank (DHPA 2007), so it is doubtful that newly discovered site 12MY711 represents collector-reported site 12MY5. Collector-reported sites 12MY6 and 12MY7 are both listed as habitation sites, with no identified temporal or cultural affiliation, and are located just south of the CPWNP boundaries. Sites 12MY6 and 12MY7 are listed as “location reported only” with no artifacts reported (DHPA 2007). During this survey, site 12MY708, a precontact lithic scatter, was discovered 45 meters north of 12MY7 and 90 meters northwest of 12MY6. Based upon the lack of temporal periods identified during this survey and the incomplete information from the original site forms, no additional understanding was gathered for collector-reported sites 12MY5, 12MY6, and 12MY7.

Project results show that the CPWNP has been occupied during both precontact and historic eras, and with the exception of site 12MY711 with the historic windmill and water storage tank, with minimal disturbance to the landscape and with little evidence of long-term permanent settlement. The results of this survey were submitted to the Indiana Division of Nature Preserves for future resource management planning, and future work within the CPWNP should take into consideration the results of this survey.

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## **HOOSIER ARCHAEOLOGY INSIGHTS**

### **Interview with Dr. William L. Mangold**

In 2022, the Division of Historic Preservation and Archaeology began a new archaeology outreach initiative with *Hoosier Archaeology Insights*, a project which involves interviewing individuals who have contributed much to the field of archaeology in Indiana. State Archaeologist Amy Johnson has been impressed by the work which the Society for American Archaeology (SAA) has accomplished thus far with their *Archiving the Archaeologists* oral history project, and *Hoosier Archaeology Insights* is a similar state-specific project inspired by the SAA initiative.

DHPA Archaeology Team members will be conducting oral history interviews with archaeologists whose careers have spanned many years in the discipline in our state. These professionals may be fully retired, or may have retired from their primary archaeology job, but still be involved in archaeology in other ways. Topics the DHPA plans to focus on during the interviews include the career highlights and challenges of those being interviewed, changes recognized in the field of archaeology during their career, and more. These exchanges and the resulting documentation will assist in contextualizing archaeology in Indiana, including highlighting important milestones and development of the discipline through the years. Recorded interviews will be conducted virtually using video meeting platforms such as Zoom or Microsoft Teams or conducted in person. Transcripts will be produced of the interviews and curated with the DHPA.

The first oral history interview was conducted by State Archaeologist Amy Johnson with Dr. William L. Mangold. He was interviewed at his home in northern Indiana on October 1, 2022. Dr. Mangold received his doctorate in anthropology from Indiana University-Bloomington in 2009. For over 40 years, his research has centered in southwestern Michigan, northwestern Indiana and northeastern Illinois, with primary interests in collections research and Middle Woodland ceramics. He worked in CRM, was an archaeologist for the Indiana Department of Natural Resources for 18 years (with the Division of Reclamation and then the Division of Historic Preservation and Archaeology), and has taught anthropology and archaeology classes. His research has been published in several journals, and he co-authored a chapter in a volume covering the Middle Woodland period. Dr. Mangold is also a practicing artist and has been an art instructor.

**Note:** Hyperlinks to documents have been added in several places within the interview text below so that the reader can access additional information. Also, some terms have been adjusted to reflect terminology which is more commonly utilized in the field of archaeology.

**Amy Johnson (AJ):** This is October 1, and my name is Amy Johnson, and I am here visiting with Dr. William Mangold, and he is an archaeology colleague who has been important in the development and continued research in Indiana archaeology. I am speaking with Dr. Mangold today for our Hoosier Archaeology Insights project, and I just want to introduce Dr. Mangold and have him say a few words of hello for our recording here today.

**William L. Mangold (WM):** This is William Mangold, and I'm honored to be included in this project.

**AJ:** Thank you Dr. Mangold. The first question I want to ask you today is did you have an interest in archaeology from an early age?

**WM:** Yes, probably from the time I was in my not quite teens, maybe...

**AJ:** Early teens?

**WM:** Yes.

**AJ:** That's great.

**WM:** Probably even younger that.

**AJ:** Oh, great.

**AJ:** And when did you become actively become involved in archaeology?

**WM:** Well, I was given the artifacts that my Dad had found as a child.

**AJ:** OK.

**WM:** In the area around Three Oaks, Michigan.

**AJ:** OK, and where did you grow up?

**WM:** Three Oaks, Michigan.

**AJ:** Yes, and so your father gave his collection to you and talked about his collection with you?

**WM:** Yes.

**AJ:** Awesome.

**WM:** That kicked me off.

**AJ:** That started it. All the archaeologists, I think, in this world probably have a story to tell us about how they became involved in the science. And I think that's probably what a lot of archaeologists' experience is, through a family connection, or someone they know collected, and it sounds like that was your experience.

**WM:** Yeah, that's basically it.

**AJ:** That's awesome. Now was your career primarily in cultural resource management, academia, government, or a combination? And, I think I know the answer to this one, but you tell me.

**WM:** It's a conglomeration.

**AJ:** Yes. Yes.

**WM:** I worked for the State [Indiana].

**AJ:** Yep.

**WM:** I did my own research. I worked for projects for Western Michigan, during highway construction and things like that.

**AJ:** Excellent. And you were also a teacher.

**WM:** That's right. I taught for Lake Michigan College, and Penn State.

**AJ:** Oh, that's wonderful. I knew you taught, and you're also a very accomplished artist as well. I think that's been an important skill in your field of archaeology, hasn't it been?

**WM:** Yes, to illustrate stone artifacts, things like pottery.

**AJ:** Yes. And pottery is one of your research interests and passions, isn't it?

**WM:** Right, that covers the artistic endeavors of precontact people.

**AJ:** Yes, and this is a side note. Dr. Mangold was a coworker of mine for many years at the Division of Historic Preservation and Archaeology, and he illustrated a number of our educational handouts and [materials](#); and so he continued to put his artistic skills to use in that way for our state government projects, and we so appreciate that. And, I think that's a skill that not all archaeologists today have. It seems like some don't always get the training in that maybe as you did.

**WM:** Well, not only the training, but also knowing what to do and how to do it.

**AJ:** Yes. Yes. And that's maybe not always taught in colleges these days for this science in particular, so I'm so glad that you've been able to help and do that and use your skills in that way through archaeology.

**AJ:** What would you say is your main research interest, or interests, as they relate to Indiana and Midwest archaeology?

**WM:** Primarily ceramics- how they were made, how they were decorated.

**AJ:** And that was what your dissertation topic was, correct?

**WM:** Yes.

**AJ:** Yes. And tell us about what your dissertation topic was.

**WM:** Middle Woodland ceramics from southern Michigan, northern Indiana.

**AJ:** Yes, and Dr. Mangold's dissertation is included in our SHAARD database [AR-46-00030] so that our archaeology colleagues and researchers can read his important work on precontact pottery and see how he's used all of his research which culminated in [his] dissertation. Because you had been researching precontact pottery and all kinds of precontact Native American topics for many years, and then you got your Ph.D., and that was kind of a culmination of all that research, wasn't it?

**WM:** Yes.

**AJ:** And, where did you get your graduate degree in archaeology?

**WM:** Which one?

**AJ:** That's why I asked that question that way! So, Dr. Mangold has numerous degrees, and I'll let you tell the folks about that.

**WM:** I have a Master's Degree in anthropology/archaeology [Western Michigan University, Kalamazoo, MI]. I have a Master's Degree in ceramic archaeology [American Studies (Material Culture emphasis), The Pennsylvania State University, Middletown, PA], and...

**AJ:** Your Ph.D.

**WM:** Ph.D., yes, in anthropology/archaeology.

**AJ:** And that was from Indiana University at Bloomington.

**WM:** Correct.

**AJ:** Who would you consider to be mentors in your career in the field of archaeology?

**WM:** The very first person to influence me would be Betsy Garland, Betsy Baldwin Garland [Dr. [Elizabeth Baldwin Garland](#)], from Western Michigan University.

**AJ:** She had an impact on your interest in archaeology and how you progressed in your field of study, is that right?

**WM:** That's right. She started at Western Michigan University about the same time I was becoming interested in archaeology at a higher level.

**AJ:** OK. Do you feel you have mentored students or other individuals in their pursuit of careers in archaeology, and do you recommend this field as a career choice?

**WM:** I would say as a career choice, you have limited potential, because there are very few openings strictly in archaeology. And, if you want to get specific, like I did with ceramics, that limits you even more.

**AJ:** Do you feel the career was a good one for you?

**WM:** If you can enjoy it the way I did, it's definitely a way to go.

**AJ:** Yes, I would agree. And I would like to add that I consider Dr. Mangold one of my mentors in the field of archaeology. He and I started at the Department of Natural Resources at about the same time, and we had a lot of common experiences through our work with the coal mining archaeology. And so, I would agree with him that this has been a great field of choice for a career, and especially for Indiana archaeology; but I know you've worked in archaeology in several states actually, is that right?



*Images of Dr. Mangold during his work as an archaeologist with the Indiana Department of Natural Resources.*



**WM:** Yes, primarily Michigan, but then a little bit in Illinois, a little bit in Ohio, and of course, Indiana.

**AJ:** Yes, and did you do work in Pennsylvania?

**WM:** Yes, that as well.

**AJ:** Yep, Yep. So, Bill's had quite a far-reaching work in the Midwest in archaeology, so that's really important.

**WM:** And not only the variety of states, but also the various time periods.

**AJ:** Yes. And you've done work, that's a good point to make, you've done work on not just precontact sites, but historic sites of varying types, and a wide range of cultural periods, and different cultures.

**WM:** Yes. Primarily, southern/southeastern Pennsylvania, in Indiana, Illinois, Michigan, Ohio.

**AJ:** Yes.

**WM:** So I'm pretty well scattered.

**AJ:** Yes. He's had experience in a number of states.

**AJ:** Could you highlight a particular archaeological site in Indiana which was especially enriching for you to research, conduct fieldwork at, etc., and explain why you choose that site?

**WM:** Well, I'd probably have to say two sites. One, in Pennsylvania, which was an early European settlement site. Also, some of the islands in the Susquehanna River that were both precontact and historic, and several other sites. I grew up in Michigan and was the first to do recording of sites in that part of the state.

**AJ:** OK.

**AJ:** Bill, are there particular milestones or achievements in your career that you would like to highlight for us?

**WM:** One would be the U.S. 31 project [Garland and Mangold 1980] that I did for the state of Michigan and Indiana. When they developed U.S. 31 in southern Michigan and Indiana they had to do archaeological survey prior to the building of the road, and, they found a lot of precontact and historic sites.

**AJ:** Who were you working with or for at that time?

**WM:** I was working for Western Michigan University.

**AJ:** OK.

**WM:** and Department of Transportation in Michigan.

**AJ:** OK, and approximately when was that? Was that back in the 80s, 1980s?

**WM:** Yes.

**AJ:** That's what I thought. Well, that sounds like a really important project. I'm sure the road is continuing to obviously be used, and you had an important part in getting that surveyed and investigated it sounds like.

**WM:** Yes, it was a very important project.

**WM:** Probably the most unique site I worked on was a very early settlement in Pennsylvania. Log cabin, probably 1820.

**AJ:** Wow.

**AJ:** Explain some of the major changes you have witnessed in the field of archaeology, especially here in Indiana.

**WM:** Well, first of all, there wasn't a whole lot of professional archaeology being done in Indiana when I first got interested in it. I was a student at Western Michigan University at the time that Betsy Garland Baldwin [Baldwin Garland] was coming into her teaching career at Western Michigan, and Betsy and I probably grew together.

**AJ:** OK.

**AJ:** So, you've seen a change in maybe the focus of archaeology? I know in particular our field in the coal mining regions of Indiana, I know you and I witnessed some changes in that part of the state in terms of how much archaeology was being done. So, would you say that the field changed sort of in the amount of archaeology that has happened, or is not happening now, and it sounds like you see a trend of moving towards maybe more of historic archaeology than precontact archaeology?

**WM:** Yes, the emphasis on historic is becoming stronger all the time. Precontact [archaeology] has kind of faded because of the fact that relationships with the Native American people that are living in the area now has to be taken into considered in a greater degree than it has ever been in the past.

**AJ:** Yes, so as a result there are some changes in how much archaeology is being done and maybe the focus, or more close consideration of indigenous peoples and the descendants of those peoples in terms of how we handle what we do. Would you say that's accurate?

**WM:** Very definitely.

**AJ:** Yes, yes, I would agree with that.

**AJ:** Now this next question is regarding your personal collection of books, and artifacts, or reports that you may have had through your career. Have you already implemented a plan or an idea of how to preserve the records from your work in archaeology, such as papers you may have written, books you may have in your collection? That seems to be something that more and more archaeologists are thinking about as they retire is how to preserve their research. Have you thought about that, or have you already begun to think about that process?

**WM:** Very definitely thinking about it. I'm passing as much knowledge as I can to people who younger than I am and that can use the books and study, rather than having to go out and purchase. Because it seems like there's less precontact [archaeology] work being done now, and more historic work, so you have to be flexible.

**AJ:** Yes, yes. And I think you would probably agree with me that it's important to think about those who are going to be newly brought into the field who may not have access to the resources that we have in our personal collections of books and reports and things like that. So, I think you would agree, and you're already thinking about how to share knowledge with those that are younger than you that are getting into the field; whereas, as people retire, we may have accumulated a lot of things, but we recognize that maybe younger folks don't have access to those things.

**WM:** Very definitely. I have reduced my library by more than half and am continuing to do so.

**AJ:** And, I'll add as a side note that Dr. Mangold has generously donated some of his personal books and papers to the Division of Historic Preservation and Archaeology for our research library, so that helps our staff as well as future researchers. And, he has graciously shared some books with me personally as an archaeologist and colleague, and I'm so appreciative of that, as is our office. So, thank you for sharing that knowledge in that way.

**AJ:** The next question is: What do you consider to be ongoing challenges or unfulfilled goals in the field of archaeology generally, and did you experience challenges during your own work in archaeology? If so, you can feel free to elaborate.

**WM:** Well, let me think about this for a second. Archaeology now is a lot different than when I first started. The research aspect of it was minimal in my early days, because they didn't see the necessity of looking at precontact and historic archaeology. Historic archaeology seemed to be rapidly growing, while the precontact seemed to be going downhill, because it just seems like there is so much historic being done in comparison with precontact now.

**AJ:** So, did you experience any challenges beyond that? Did you ever feel that you were challenged by anything in the field in terms of challenging financial aspects of archaeology? I know some people think of an archaeology career as not having a salary that might match other types of careers. Did you ever see that as a challenge, or was your work in archaeology, it was something you loved so much and wanted to contribute to that that wasn't a factor? Did you maybe see that as a challenge, or a misperception of archaeology?

**WM:** Well first of all, archaeology is not cheap to do, and the amount of archaeology that can be done is restrictive because of the cost.

**AJ:** Yes.

**WM:** Then, also, not only the cost but the access to sites and the time involved, both in the fieldwork and in the analyses. And then what's most important is getting the information back out.

**AJ:** Right. Right. That can be a challenge both time-wise and then limiting in some ways as well.

**WM:** Very definitely.

**AJ:** Where do you see the field of archaeology headed in the future, and particularly in Indiana?

**WM:** Archaeology today is more inclusive, both in culture, by race, by gender, so that people from different situations are represented in our work.

**AJ:** And do you feel that's good?

**WM:** It has to be.

**AJ:** I do too. I think that's very important that our field is becoming, it's becoming more apparent that more folks are involved, such as African American students, Native American students, so it's a more inclusive field, and that's a great thing.

**WM:** Very definitely, because the different cultures, races can share more of their own feelings than what has ever been expressed before.

**AJ:** Yes. Yes.

**AJ:** This next question is an interesting one that I wanted to ask. What one artifact has the most significance, or was the most significant find for you, personally or professionally?

**WM:** Boy. The fact that any artifact that's recovered speaks to you. Probably the one that's most in my mind is a birdstone that I found on a site in southwestern Michigan. The little effigy of a bird with popeyes that was a ceremonial piece, probably.

**AJ:** Were you doing a field survey, or were you on an excavation when that was found?

**WM:** No, it was a surface collection.

**AJ:** Yes. And do you remember the name of the site or the site number?

**WM:** Not right off hand. I'd have to go back to my books and check it out.

**AJ:** But southwest Michigan.

**WM:** Southwestern Michigan.

**AJ:** And was that found when you were at the university?

**WM:** That was found when I was before I got my degree.

**AJ:** Oh, wow.

**WM:** But it was a prod to get things done.

**AJ:** Yes. So that kind of spurred you on to do more and find out more about archaeology by finding something that was so unique as that?

**WM:** Right. Very definitely.

**AJ:** That's wonderful.

**AJ:** What is your favorite moment from the field? Do you have one? Something that really stands out?

**WM:** Well, there's so many.

**AJ:** Yes.

**WM:** The fact that when you pick up an artifact from the surface of the ground, or when you excavate it, you're the first person to be in contact with the original artist, or that particular person, or that particular culture.

**AJ:** Yes. I think that is an answer that most archaeologists share. That when we find something, and we hold it in our hand, we're touching something that maybe someone hasn't touched in thousands of years, and that really, that really connects the present with the past, in a very special way as an archaeologist. You would agree with that?

**WM:** Very definitely.

**AJ:** Do you have a least favorite moment in archaeology that maybe happened in the field, something didn't go right, or just a miserable day in the field because the weather was so bad? Do you have anything that stands out?

**WM:** Yes. I was living in Pennsylvania, and we were on Three Mile Island, and we encountered a very, very strong thunderstorm. We were huddled in the roots of a tree, to avoid the heaviest water, or heaviest rain. That's one I don't want to repeat!

**AJ:** That just illustrates the challenges of fieldwork in archaeology, and I did not know that about you had to take shelter in tree roots! That was quite a storm, wasn't it?

**WM:** Very definitely.

**AJ:** How did you incorporate family life with archaeology?

**WM:** Wow. Just the fact that archaeology is inclusive and demanding. That you can't get into it part time, or try and do too much with it. You have to focus.

**AJ:** And, did your wife, Kathleen, she always supported you in your career in archaeology, didn't she?

**WM:** She still does. I'm not doing as much fieldwork now as what I had done in the past, but she has been with me for most of it.

**AJ:** That's, that's really important.

**AJ:** Do you think our field of work has particular work or life balance challenges? Do you feel like your work and your family life was balanced well, or did you feel there were times where your work just called you away from your home a lot, and you were gone for long periods of time? Or, any experience like that?

**WM:** Well, most of my work has been either in Pennsylvania, Indiana, Illinois, or Michigan, so at the time I was living in those areas. Most of it was just day long excavations.

**AJ:** Yes.

**WM:** But returned to the same site for a day...

**AJ:** Yes.

**WM:** A week, a month.

**AJ:** Yes.

**WM:** You just don't know until you get things going.



**AJ:** Right, right.

**AJ:** And our last question, Bill, is: in your career, has there been anything that was left on the table? What do you wish you could have accomplished that maybe you didn't?

**WM:** I've always been interested in ceramics and how they were decorated, how they were produced [e.g., [Greenan and Mangold 2016](#); Mangold 1981]. Wish I could've done more with that.

**AJ:** Well, I have always found that it seems as though people in our field, they seem to gravitate towards one artifact type or one manufacturing technique, and one of your focuses has been ceramics. And, so I think that's something that all archaeologists share. You seem to gravitate towards, you know, a single topic, for whatever reason, and one person can't do everything. So, I think we all probably leave something undone that we wish we had more time to work on, etc. It sounds like you agree.

**WM:** Totally.

**AJ:** Are there any other thoughts you'd like to share today about your career and your work in Indiana in particular?

**WM:** Most of my work has been done in southwestern Michigan and northern Indiana, with a smattering in Pennsylvania. So, I have experienced different cultures that may not have known each other, but they have similar things going on, and it's good to find those ties.

**AJ:** Yes. That's one of the main focuses of anthropology, isn't it?

**WM:** Definitely.

**AJ:** Yes. Well, I want to thank Dr. Mangold. He is our first interviewee for our project Hoosier Archaeology Insights, and it has been wonderful to talk with you today and to reminisce. And, Bill and I have been friends for decades now it seems...

**WM:** Yeah, it is.

**AJ:** We could talk for days and days, but we are so thankful that he could share this time with me today and conduct this interview. And, I just want to say thank you again for all of your hard work and research in Indiana archaeology and beyond, in many other midwestern states. Thank you so much, Bill.

**WM:** Well, thank you for thinking of me.

**AJ:** Absolutely, and we will end this recording here today. Thank you very much.



*Dr. Mangold and State Archaeologist Amy Johnson on the day of the interview.*

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## **GLOSSARY OF TERMS**

### **A-HORIZON SOIL**

The upper layer of soil, nearest the surface.

### **ANTHROPOLOGY**

The study of humankind, with particular emphasis on its cultural and biological adaptations.

### **ARCHAEOLOGY**

The anthropological study of past lifeways, cultures, and cultural processes through the investigation of material remains left behind by humans.

### **ARTIFACT**

Any portable object made, used, and/or modified by humans. Or, more generally, any evidence of human behavior. Common precontact artifacts found archaeologically include spear points, arrowheads, knives, chipped or broken stone debris, ground stone axes, grinding stones, mortars and pestles, awls, adzes, gouges, pottery, clothing and ornamental pins, decorative items and ornaments, scraping tools, hammerstones, bone fishhooks, stone perforators, and beads.

### **ASSOCIATIONS**

The relationships of artifacts and features at a site, based on provenience and context.

### **ATLATL**

A spearthrower.

### **AVOCATIONAL ARCHAEOLOGIST**

A person who participates in archaeology but does not practice it as a profession. Avocational archaeologists may volunteer to work with qualified professional archaeologists, and many take courses and gain substantial experience in archaeological methods and techniques. Others may be involved in archaeology as a hobby. Generally, avocational archaeologists subscribe to a preservation ethic to protect archaeological resources and to responsibly and legally preserve and study information from sites.

### **BP**

Before present. By professional agreement present was established to be AD 1950 based on radiocarbon dating. For example, 1000 BP means 1,000 years before AD 1950, or AD 950.

### **CELT**

An ungrooved axe. Celts may be made of pecked and ground stone, or hammered copper. It is thought that celts appeared in Late Archaic times, and they continue to occur through later prehistory.

### **CERAMICS**

Pottery vessels or potsherds.

**CHERT**

Stone of microscopic or small quartz particles used for the making of stone tools. Some types of chert include flint, agate, and jasper.

**CHIEFDOM**

A non-egalitarian hierarchial social organization with a fixed and permanent role for a chief/leader.

**COLLARED**

A thickened area present below the rim and above the neck on a clay pottery vessel.

**COMPLICATED STAMPED**

Decorations of curvilinear or rectilinear design paddle stamped into a clay vessel.

**CONTEXT**

The position of an artifact or feature in its soil matrix, horizontal, and vertical location, and its relationship with other artifacts and features, related to the behavioral activities which placed it there.

**CORD-IMPRESSED**

Impression into a clay vessel surface before firing by a stick wrapped with cord, or cord on the edge of a paddle.

**CORDMARKED**

Cordage impressions on a pottery vessel as a result of stamping with a cord-wrapped paddle.

**CORE**

A stone which exhibits one or more flake scars, showing that it has been used as a raw material for flintknapping.

**CRM**

Cultural resource management. The protection, preservation, and recovery of information from archaeological sites, under federal and state laws. Universities and private archaeological companies often are hired to conduct CRM archaeology mandated under federal or state statutes.

**CULTURE**

A system of shared, learned, symbolic human behavior for adaptation to our natural and social environment. Culture may be thought of as a system composed of interrelated parts or subsystems, where a change in one part affects or influences the other parts. Subsystems interrelated with culture include technology, communication (and language), biological and physical characteristics, psychology, economics, social and political organization, beliefs and values, subsistence, settlement, environment, etc.

**EXCAVATION**

The systematic recovery of archaeological deposits through the removal and screening of soil. These can be either test excavations (termed Phase II in CRM investigations) or large-scale excavations (termed Phase III in CRM investigations).

**FABRIC-IMPRESSED**

Impressions of woven fabric in the surface of a pottery vessel.

**FEATURE**

Non-portable evidence of past human behavior, activity, and technology found on or in the ground. Precontact features commonly include fire pits and hearths, burned earth and clay, trash and garbage pits, post molds, evidence of house floors or basins, storage pits, clusters of artifacts (e.g., chipped and broken stones, caches of projectile points, ceramics or pottery sherds), human and animal burials, clusters of animal bone, earthworks (such as mounds and circular enclosures), petroglyphs and pictographs, and middens.

**FLAKE**

A by-product of flintknapping, toolmaking, use, or other human activities, resulting in a fragment of stone detached from a parent stone. Often, a flake has evidence of purposeful removal, including a bulb of percussion, ripple marks, a striking platform, etc.

**GORGET**

Decorative object worn on the chest.

**GROG-TEMPERED**

Ceramics tempered with fragments of crushed pottery.

**LITHICS**

Stones used or modified for human activities such as the manufacture of precontact tools, cooking, hunting, etc.

**MICROTOOLS**

Small tools, predominately of stone, manufactured and used to perform certain tasks.

**MIDDEN**

Cultural refuse or deposits built up at a site.

**MULTICOMPONENT**

An archaeological site with occupations from more than one culture or time period.

**PETROGLYPHS**

Naturalistic or symbolic representations or depictions carved into stone.

**PICTOGRAPHS**

Pictures or drawings painted on rocks, cave walls, stone outcrops, or rockshelters.

**PRECONTACT**

Human activities, events, and occupations before written records. In North America, this primarily includes Native American precontact cultures, but does not imply that these cultures did not have long, rich, and varied cultural and oral histories and traditions.

**PROTOHISTORY**

Protohistoric cultures can be defined as those precontact groups developing or continuing directly into early recorded history, some associated with early historic artifacts.

**PROVENIENCE**

The horizontal and vertical location of an artifact at a site.

**RED OCHRE**

Late Archaic-Early Woodland culture with burial practices, usually in mounds, involving the use or placement of red ochre (a red hematite pigment).

**SHAARD**

The Indiana State Historic Architectural and Archaeological Research Database ([SHAARD](#)) of the Division of Historic Preservation and Archaeology.

**SHELL-TEMPERED**

Ceramics (pottery) tempered with fragments of crushed shell.

**SITE**

The presence or occurrence of one or more artifacts or features indicates an archaeological site. An archaeological site is an instance of past human behavior or activity, where humans conducted some activity and left evidence of it behind, on or in the ground. Some common precontact site types include artifact caches, villages and camps, cemeteries, burials, workshops (e.g., stone debris from flintknapping activities), quarries, and earthworks (mounds, embankments, enclosures, fortifications, etc.).

**STRATIGRAPHY**

Horizons, strata, or layers of soil deposited at a location, where the deepest strata were deposited the earliest, and the more recent layers deposited higher in the stratigraphic sequence.

**SURVEY**

The systematic discovery, recovery, and recording of archaeological information such as site locations, artifacts, and features by visually inspecting the surface of the ground if the soil is visible. Or, the use of shovel probes, cores, and/or augers near the surface, if surface visibility is restricted or poor. Termed Phase I in CRM investigations.

**TEST EXCAVATION**

Systematic excavation of a representative portion or percentage of a site to evaluate and determine its nature and extent, what information is present, whether there are intact or in situ deposits present, and the degree of disturbance to the site, often to determine whether it is eligible for the National Register of Historic Places. Termed Phase II in CRM.

**WYANDOTTE**

A type of dark blue-gray chert found in southern Indiana.

For those with access to the internet, the following sites also provide opportunities to access definitions and additional information regarding archaeological terms and concepts:

[archaeological.org/education/glossary](http://archaeological.org/education/glossary)

[archaeology.about.com/od/rterms/g/radiocarbon.htm](http://archaeology.about.com/od/rterms/g/radiocarbon.htm)

# PRECONTACT INDIANS OF INDIANA

## PALEOINDIANS

Paleoindians are the first known people who lived in the Americas, including Indiana. They lived here during the last stages of the last glacial advance, or ice age, and the early part of a changing environment and climate as the glaciers retreated. These people occupied the area now known as Indiana some 12,000 years ago and lasted until about 10,000 years ago.

These early peoples probably lived in small groups of related individuals who moved around a lot, hunting large game animals, including some now extinct, such as the mastodon, a large elephant-like creature. They also relied upon the gathering of wild plants to eat for their survival. Their population was very low.

The Paleoindians had very well-made stone tools, composed of a type of stone archaeologists call chert, which is a fine-grained rock that breaks a little like glass when hit by hard materials like another rock or a piece of deer antler. The tools they made by chipping, flintknapping, and flaking included long spearpoints, cutting and scraping implements, and engraving items. Some of their spear and piercing tools are called Clovis, Gainey, Barnes, Cumberland, Holcombe, Quad, Plainview, Hi-Lo, and Agate Basin points.

Evidence of these peoples is often found in Indiana on land near water sources like major rivers and springs, and where chert is found. Little is known about the Paleoindians since they moved around a lot and did not occupy any one place for a very long time. Therefore, they did not leave behind much evidence of their lives in any one place.

## ARCHAIC PEOPLES

American Indians known as the Archaic peoples lived here for a long time: around 6-7,000 years. Although these people did change over time, increasing in population and using new tool types and food preparation techniques, they did share certain general characteristics. These included new types of spear points and knives, with various types of notches and stems for hafting to wooden handles and shafts. Some of the projectile point types of the Archaic Period are called Kirk, Thebes, MacCorkle, LeCroy, Faulkner, Godar, Karnak, Matanzas, Brewerton, Riverton, and Terminal Archaic Barbed points.

They also used ground stone tools such as stone axes, woodworking tools, and grinding stones. The grinding stones were used to pound, crush, and grind wild nuts, berries, seeds, and other plant foods. They were hunters and gatherers of wild plants and animals, and moved around in their natural environments by season, often scheduling their movements to coincide with the appearance of foods like nuts, fish, deer, and wild seeds. Over time, they became very selective in what kind of resource they were pursuing.

During the Archaic Period, the spearthrower was used. This consisted of a shaft with a handle, weighted for balance with a ground and smoothed stone, and a hook on the end. A spear was fitted onto the hook and was thrown with the spearthrower shaft.

Toward the end of the Archaic, more evidence of mortuary activities is found, including human burials with a red pigment coloring remains or grave goods. Burial mounds appear. During the Archaic, the cultures became more different from one another, and more types of artifacts were used. Their settlements became more permanent. One type of settlement was along large rivers, where they discarded large amounts of mussel shells. These sites are called shell middens or "mounds," although they are not really constructed, burial mounds. The general Archaic Period ended at about 1500 BC, although some Terminal Archaic peoples lived until 700 BC.

## WOODLAND PEOPLES

During the Woodland Period, a number of new cultural characteristics appeared. A notable event was the appearance and use of ceramics and pottery vessels. Another significant occurrence was the use and increase of horticulture. A remarkable feature of some Woodland sites is earthen mounds and earthworks, such as embankments. The Woodland peoples persisted for over 1,500 years in Indiana.

During the early portion of the Woodland Period, the pottery was thick and heavy. One early Woodland culture called the Adena people had elaborate mortuary rituals, including log tombs beneath earthen mounds. Projectile points during this time included Adena, Kramer, Dickson, and Gary Contracting Stemmed types.

A little later, in the Middle Woodland, there were elaborate burial rituals, but also long-range trade of exotic goods like mica, marine shells, copper, obsidian, copper axes, drilled wolf and bear teeth, and other goods from region to region throughout the Eastern Woodlands area of North America. Some of these groups were called Hopewell

peoples. Their ceramics had all kinds of incised and stamped decorations. During this time, the Woodland Indians were likely organized into groups we might recognize as what we today call tribes. Projectile points from the Middle Woodland include Snyders, Lowe Flared Base, Steuben, Chesser, and Baker's Creek.

The latter part of the Woodland Period is called Late Woodland. In Late Woodland, two important events occur. One is the first appearance of agriculture; that is, intensive cultivation and modification of crops such as corn and squash. Another important occurrence is the appearance of the bow and arrow. Before this time, most of the chipped stone tools were either spearheads, knives, engraving tools, or scrapers. In Late Woodland, however, small, triangular points occurred that are true arrowheads. One type of these arrowheads is called Madison. Other point types are termed Jack's Reef Pentagonal and Raccoon Notched. Settlement during the Late Woodland time changed from the earlier more permanent and nucleated villages to a pattern of smaller sites dispersed more over the landscape. In some regions of the state, Woodland groups may have persisted almost until historic times, although in general, the Woodland Period ended at AD 1000.

### **MISSISSIPPIAN PERIOD**

The Mississippian peoples in Indiana lived in some cases almost until contact with early European explorers, missionaries, soldiers, and traders. They lived from about AD 1000 until possibly as late as AD 1650. A noticeable change during this period was the nucleation of some peoples into large settlements akin to "towns," such as at the Angel Mounds site near Evansville, Indiana. These towns had large public areas such as plazas and platform mounds—like truncated or flat-topped pyramids—where influential or important public individuals lived or conducted rituals. Thus, there was social stratification and ranking of individuals in Mississippian societies. There were probably chiefs and religious leaders. The towns were supported by the harvesting of large agricultural fields growing corn, beans, and squash. People living in sites such as these are termed Middle Mississippian.

Notable artifacts indicating Mississippian settlements include large, chipped stone hoes, and pottery bowls and jars tempered with crushed shell. Straps, loops, and handles for these containers characterize this time period as well. Stone tools include point types known as Madison, Nodena, and Cahokia, and other implements such as mortars, pestles, pendants, beads, anvils, abraders, and other items.

Another less elaborate type of Mississippian society called Upper Mississippian was present in the state, with people living in hamlets and villages. Many of these people lived in northern and southeastern Indiana. They also grew and harvested maize, beans, and squash. One group to the southeast was called Fort Ancient, and lots of shell-tempered vessels with straps are found at these sites. In northern Indiana, incised shell-tempered pottery fragments are found on Upper Mississippian sites that are often located near the beds or former beds of lakes.



