INTRODUCING THE SERPENT MOUND'S FORT ANCIENT VILLAGE: A PRELIMINARY ANALYSIS OF THE FORT ANCIENT COMPONENT AT SERPENT MOUND STATE MEMORIAL, ADAMS COUNTY, OHIO

Robert A. Cook[1] *and Amanda D. Roberts Thompson*[2]

Abstract

Between 1988 and 1994, a series of mitigation excavations conducted by the Ohio Historical Connection (OHC) occurred at the Serpent Mound site, in the same area as the Fort Ancient village site partially excavated by Frederic Ward Putnam of Harvard University's Peabody Museum in the late 1800s (Putnam 1890). In the following paper we present a brief summary of these excavations as well as an overview of the artifacts recovered, specifically focusing on lithics and indigenous ceramics. Available diagnostic evidence from the excavations is consistent with Early to Middle Fort Ancient (ca., AD 1000-1400). We combine this information with the results of a magnetic gradiometry and susceptibility survey of the site (Burks 2017) which has allowed us to more fully situate the OHC investigations within a possible village plan for the Fort Ancient component. In so doing, not only can we more fully interpret the OHC collection, but we also are better informed to suggest specific locations at the site that would be good priorities for future testing, which we do in the concluding section of this paper.

Introduction

Serpent Mound – located atop a steep ridge along the east bank of Brush Creek in Adams County, Ohio – is one of the most iconic earthworks in North America, often gracing the covers of important popular books on Ohio archaeology (Lepper 2005) and more generally the archaeology of the Eastern U.S. (Milner 2004). First recorded by Ephraim Squier and Edwin Davis (1848), the Serpent Mound draws visitors from all over the world and has been famous to non-indigenous Americans since the birth of American archaeology. In 1883, Frederic Ward Putnam of Harvard University's Peabody Museum visited and photographed the mound. Upon returning to the site three years later and finding looter's holes in the mound, Putnam raised funds from the Peabody Museum to purchase the land in 1887 (Lepper 2001, 2020).

From 1887 to 1889, Putnam systematically investigated various areas of the earthwork and the adjacent village and burial mounds recovering artifacts that dated to Adena and Fort Ancient contexts. In particular, he noted the presence of seven habitation areas and six burial locales; however, it is not clear to what time period these features belong (i.e., Adena or Fort Ancient), although at least some of the ancestor burials are likely to be Adena (Putnam 1890).

[1] **Robert A. Cook**, The Ohio State University, robertcook526@gmail.com
[2] **Amanda Roberts Thompson,** University of Georgia, arobthom@uga.edu

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Putnam's Area 4 is of particular interest for our summary (Figure 1) as this same area is commingled with the excavations that are the focus of our investigation (Figure 2). While the effigy mound is world famous, most people are not aware of the presence of Adena or Fort Ancient occupations near the tail of the effigy and indeed, archaeologists have primarily focused research questions on the effigy itself mostly focusing on its chronology (e.g., Herrmann et al. 2014; Romain et al. 2017; Lepper 2018; Lepper et al. 2018) leaving the wider landscape of the Serpent Mound site, in general, understudied. Although more recent work has been conducted in other areas around the site (Burks 2017; Krupp 2020; Schwartz 2020).

Between 1988 and 1994, a series of mitigation excavations conducted by the Ohio Historical Connection (OHC) occurred at the Serpent Mound site, in the same area as the Fort Ancient village site partially excavated by Frederic Ward Putnam of Harvard University's Peabody Museum in the late 1800s (Putnam 1890). Available diagnostic evidence from the excavations is consistent with Early to Middle Fort Ancient (ca., AD 1000-1400) and allows for us to present a preliminary village site plan for the area. Even with such a brief synthesis, it is apparent that the numerous features and accompanying artifact assemblage provide insight into the uses of the Serpent Mound and additional context for the Adena and Fort Ancient use of the locale.

In what follows, we first present a general overview of Adena and Fort Ancient prior to detailing the methodology of the OHC waterline excavations. This is followed by a description of the excavation methodology and excavation units. Next, we detail the excavation and artifact summaries which is followed by a reconstructed map of the excavations that has allowed us to more fully situate the OHC investigations within a possible village plan. Lastly, we suggest a few specific locations at the site that would be good priorities for future testing as well as the potential for future research on the OHC waterline excavations. Although the focus in this paper is primarily to summarize the OHC excavations, rather than present a comprehensive interpretation of the village area within entire Serpent Mound site, it is our hope that future research will consider the entire archaeological investigation history, particularly to elucidate the poorly understood Adena and Fort Ancient components outside of the effigy.

A Brief Summary of Adena and Fort Ancient Cultures

Before we delve into the OHC waterline excavation as it relates to the archaeology of Serpent Mound, it is first necessary to introduce a general summary of the wider history of what archaeologists know about the Adena and Fort Ancient cultural periods in the Ohio Valley. The Adena culture was named after the large conical burial mound located on the grounds of the Adena Mansion in Chillicothe, the former home of Thomas Worthington who was a key force behind obtaining statehood for Ohio. Worthington also served as one of Ohio's first senators and early governors. William Mills, one of Ohio's early professional archaeologists an archaeology curator at the Ohio Historical Society, excavated the Adena Mound in 1901. This research located a diverse array of burials and artifacts, the most famous of which is the Adena human effigy pipe but also Flint Ridge flint projectile points, copper bracelets and rings, and beads made from shell and bone.

The extent of Adena sites is now known to cover the majority of the Middle Ohio Valley (Milner 2004; Webb and Baby 1957) (Figure 3), similar to that of the subsequent Ohio Hopewell

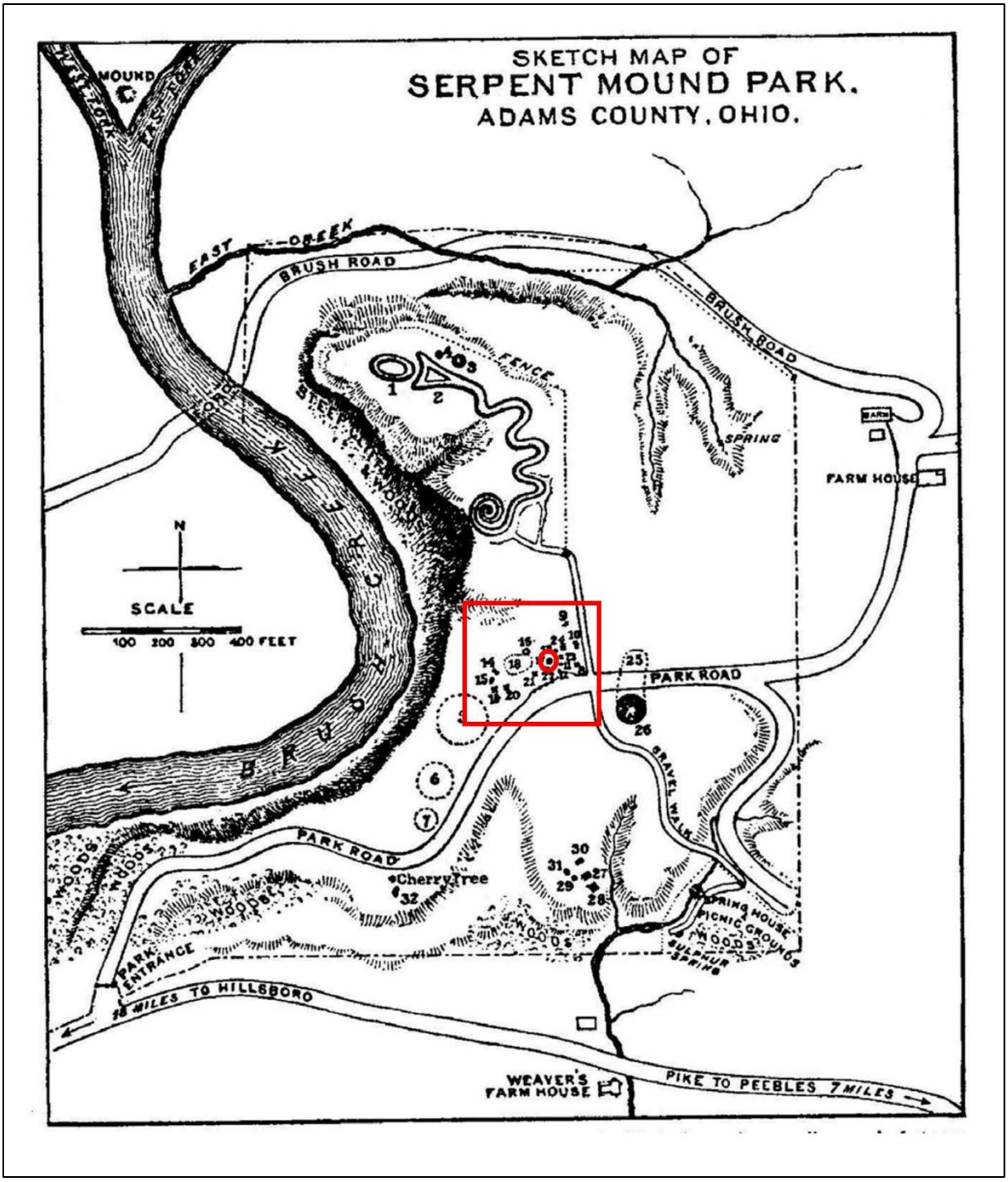

Figure 1. Map showing location of features recorded by Putnam (1890) in the earliest professional excavation of the site.

cultural tradition. Adena conical mounds often contained a central burial chamber constructed of logs into which one or two individuals were placed. In many cases, cremations were placed in the mound outside of this central feature. The mounds grew by accretion, perhaps marking the passing of related generations. Postholes in circular forms have often been located on the ground surface below the mound, indicating the use of a structure in some of the mortuary activities. The mounds were sometimes enclosed by a small circular enclosure with an opening or gateway and at other times these enclosures stood alone (Clay 1998; Lepper 2005).

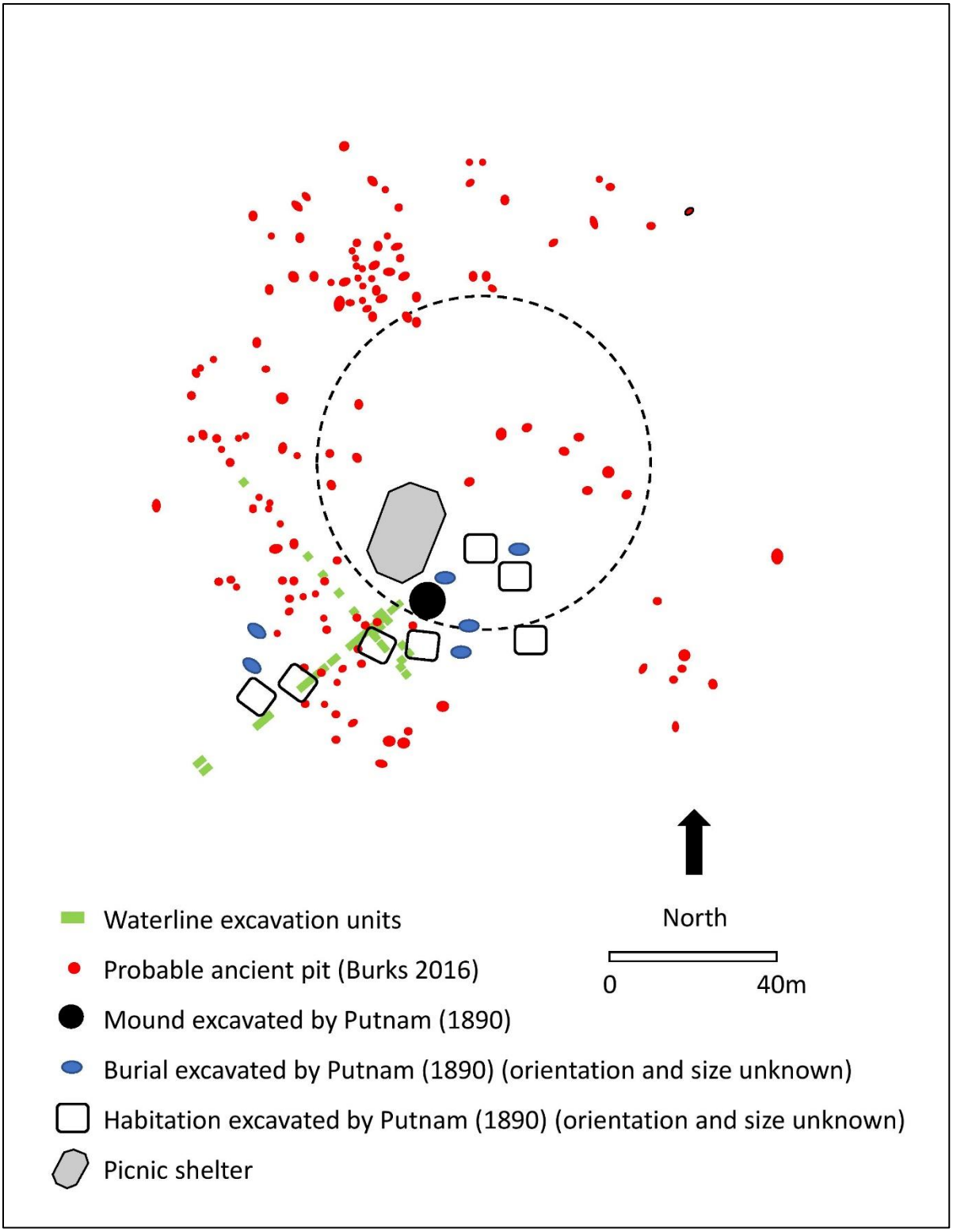

Figure 2. Location of 1988-1994 excavations in the context of known earlier excavations and ancient features based on the comprehensive magnetic gradiometry survey (Burks 2017).

The Adena were building their large conical monuments during the Early Woodland Period (ca. 1000 B.C. to 100 B.C.). While there are occurrences of pottery and domesticated plant usage during the preceding Archaic Period, it remains clear that the Early Woodland in Ohio was a time of dramatic increased use of pottery and domesticated plants. It has long been realized that the construction of monuments, in general, was a labor investment associated with increasing sedentism and commitment to particular places on the landscape. The settlement pattern appears to have been dispersed into sites of one or two houses and associated features (Dancey and Pacheco 1997). The Adena are somewhat inseparable from the more famous Ohio Hopewell who developed from this earlier tradition and persisted until about A.D. 500 in some locales. The Adena were the beginning of a mound building lifestyle that was focused on elaborate mortuary practices that involved movement of people and sacred objects and materials over a vast amount of space, including much of the Eastern Woodlands (Figure 3).

The term "Fort Ancient" was coined by the first professional archaeologists working in Ohio in the late 1800s and referred to the material remains found on the surface within Fort Ancient, the large hilltop enclosure located in Warren County along the Little Miami River (Mills 1906). At that time, it was thought that the surface remains – specifically pottery – and the enclosure were associated with the same peoples. We now know that the enclosure was constructed during earlier Woodland times, predominantly associated with Middle Woodland Hopewellians and the material was from the later Fort Ancient time period. However, the name Fort Ancient lives on to refer to the last indigenous archaeological complex of the Middle Ohio Valley. Since nearly the beginning of investigating Fort Ancient sites, there has been interest in the extent to which neighboring Mississippians and local Late Woodland peoples contributed to their development (Griffin 1943; see also Cook 2008, 2017; Drooker 1997; Essenpreis 1982; Henderson 1992). A variety of relationships have been proposed, with most recognizing some degree of a mixture of these two influences. Cook (2008, 2017) has conducted a series of examinations of this problem as it applies to southwest Ohio and found no reason to draw a sharp boundary between Fort Ancient and the variation along many of the borderlands between Mississippians and Late Woodland peoples (Figure 3).

It is well-known that the Fort Ancient peoples were maize agriculturalists living in sizeable villages. They grew a variety of domesticated crops including maize and Eastern Agricultural Complex (EAC) plants but also utilized a wide variety of natural plant and animal resources. The structure of their villages was very regular and often several acres in size. The villages were shaped into circular zones of housing and related residential and mortuary areas and features surrounding an open plaza, often with large central posts (Cook 2008). Small conical mounds are located on the edges of some plazas. Housing styles were combinations of single post and wall trench styles. It appears that wall trench houses were the norm in the earlier (ca., A.D. 1000-1400) Fort Ancient times in the lower reaches of the Great and Little Miami valleys (Cook 2017; Cook and Genheimer 2015). The use of wall trenching is a demonstrable link to Mississippian groups along with a marked shift to shell tempering for pottery and numerous trade items (e.g., Ramey knives and pottery, pipes, etc.) (Cook 2017). Pit features occur in one of two main forms: deep straight sided or bell-shaped forms and shallow broad basins. The basins were more common at the beginning of Fort Ancient culture and the deeper pits more common after about A.D. 1200 (e.g., SunWatch) and continued to get considerably deeper during the later Fort Ancient period (i.e., after A.D. 1400 [e.g., Madisonville]). However, there are exceptions to this pattern with cases of deep pits early and shallow basins late.

Figure 3. Location of Adena and Fort Ancient cultures within the broader Hopewell and Mississippian traditions of which they are a part, respectively.

Fort Ancient material culture is typified by small triangular arrow points and other chipped stone tools (e.g., scrapers, knives, drills), globular shaped pottery vessels and to a lesser extent bowls tempered with a variety of crushed rock and mussel shell, and a variety of bone and shell tools (e.g., awls, fishing hooks, flakers, pins, hoes) and objects of adornment (e.g., bracelets, gorgets, necklaces, pendants). Particular styles of the pottery and chipped stone vary through time and across the Fort Ancient region (see Griffin 1943; Drooker 1997; Henderson and Turnbow 1992). Pertinent to the present study, sites located in southwest Ohio along secondary streams well away from the Ohio River are dominated by grit temper. Hence, this would be our expectation for the present assemblage. Other regional aspects of material culture will be referenced accordingly below.

There is one widely agreed upon temporal division for the entire Fort Ancient region: from about A.D. 1000-1400 and from about A.D. 1400-1650. At the onset of this cultural tradition in the Miami Valleys, there are large villages in the lower parts of the drainages with substantial amounts of maize agriculture and Mississippian objects. This is followed by a period of the maximum geographical extent of the tradition. After about A.D. 1400, during the Little Ice Age, there is a return to the lower valleys, perhaps spurred on by the need to maximize agricultural potential during those times of increased environmental risk (Kennedy 2000). However, it is becoming clear that this did not translate into more intensive maize consumption among all members of a particular village, with bison hunting in particular becoming increasingly common (Drooker 1997). Also apparent for this period is an increase in interregional interactions and for pottery traditions to become increasingly homogenous in form with a marked decrease in pottery decoration, grit tempering and lug appendages and a concurrent increase in shell tempering and strap handles (Drooker 1997; Pollack and Henderson 1992, 2000).

Overview of OHC Excavation Methodology

From 1988 to 1994, the OHC conducted excavations at Serpent Mound State Memorial as part of a mitigation process before the installation of a new waterline. The excavations initially followed the proposed waterline but were expanded after a dense concentration of features and artifacts was encountered. However, after the excavations were completed, there were no analyses or any attempts by archaeologists to interpret the assemblage until 2001 when a senior honors thesis was completed by Katherine Veselsky, an undergraduate at Ohio State University. Veselsky conducted a preliminary analysis of diagnostic artifacts from the excavations (Veselsky 2001).

Although Veselsky did make some interpretations about the artifact assemblage, the artifacts were not fully washed, sorted, or identified; hence, her analysis was incomplete. In 2013, we examined all cultural material (~24 boxes) and excavation records and conducted a basic analysis of artifacts resulting in the compilation of a detailed report for OHC (Roberts Thompson et. al 2013). Unfortunately, many of the excavation notes were incomplete or missing completely, making a comprehensive evaluation difficult. We have done our best to reconstruct the location of the waterline excavations and provide detailed information, where available. The authors and volunteer undergraduate students processed and analyzed the collection in the Ohio Valley Archaeology Laboratory (OVAL) at Ohio State University. All artifacts were washed,

sorted, and catalogued. In addition, the project notes, photos, field forms, profile drawings and maps were digitized according to the OHC archaeology collections procedures.

Excavation Units and Feature Summary

Unfortunately, the many gaps in project documentation from the 1988-1994 excavations only allows for general descriptions of excavation methodology, which we present here. For example, while some unit and feature forms and profile and plan view drawings were present, not all excavation units had complete paperwork, which created difficulty in reconstructing their location on the landscape. The documentation available indicates that there were 58 individual excavation units of varying sizes, and in some cases, the size was not recorded on the excavation forms. In general, however, it appears that most units excavated in 1988-1989 were approximately 50 cm x 50 cm. During the following field seasons, the available documentation suggests that excavation units were, generally, 1 m x 1 m squares arranged along two intersecting transects (Figure 4). Trowels and shovels were used to excavate the units and all units appear to have been excavated in both natural and arbitrary levels. A screen size of ¼ inch was only mentioned on a few unit forms; however, we assume that this is the most likely screen size for all the excavations. The documents are also unclear if measurements were taken from the surface or from a unit or site datum. Soil samples were also collected from some units and have been floated with both light and heavy fractions and are available for future study.

It is important to note that the project area was subject to many decades of plowing and then an equally long series of ground disturbances related to park activities. Indeed, plowing and bioturbation are evidenced in the excavations. Despite the presence of disturbance, the excavation records do indicate the presence of intact deposits beneath such disturbances. In terms of depth of the excavations, the majority of units were relatively shallow, terminating at subsoil generally between 30 cm-40 cm although in some units, subsoil was approximately 50cm below surface. Soils within the units were not always described within the field notes, but overall, the units generally consisted of three strata: silt loam/topsoil (typically 10YR3/2,10YR3/3, or 10YR4/4) followed by silty loamy clay, or silty clay (most often 10YR 4/4or 10YR5/6), and finally a silty clay or clay (10YR5/6, 10YR5/8 or 10YR6/8).

During the project there were at least 18 cultural features recorded (Table 1). These included six post holes (Features 5, 7, 9, 10, 18, and 22), six possible post holes (Features 3, 4, 15, 21, 25 and 26), two linear trenches (Features 2 and 20), two oval anomalies (Features 11 and 19), and three non-cultural (Features 6, 8, 12). One feature (Feature 16) initially recorded later was identified as a test unit from the 1989 excavations. Several other features (Features 1, 13, 14, 24) did not have enough documentation available from the records to do any types of identification (e.g., lack of feature forms). Post holes were the most common type of feature, most of which are grouped together near a wall trench feature, indicating the portion of at least one likely house structure (Figure 5). The trench feature is of a similar width and depth to those recorded for other wall trench houses recorded in other Fort Ancient sites in southwest Ohio and southeast Indiana (Cook and Genheimer 2015). The post holes and trench are concentrated near where Putnam had earlier located some of the various “habitations” he noted on the map (Figures 1 and 2).

Table 1. Cultural Features

Feature	Unit	Plan	Profile	Stratum/Level	Top Depth	Bottom Depth	Top Length	Top Width	Associated Feature	Cultural Materials
2	Test Pit #4	-	Linear Trench	-	-	-	-	-	-	No
3	Test Pit #6	Oval to Circular	Possible Post Hole	-	-	53 cm?	-	-	Fea. 4	Yes
4	N0E50/E51	Oval to Circular	Possible Post Hole	Stat B	27 cm	31.5cm?	-	-	Fea. 3	Yes
5	N0E49	Circular	Post Hole	Strat C, Lvl 1	29 cm	52 cm	-	-	Fea. 6	Yes
6	N0E49	1/2 Circle	-	-	-	-	-	-	Fea. 5	No
7	S1E51	Circular	Post Hole	-	24 cm	58 cm	N-S 13cm	E-W 15cm	Fea. 87	Yes
9	N0E48	Circular	Post Hole	Strat B	-	-	-	-	Fea. 10	Yes
10	N0E48	Circular	Post Hole	Strat B	-	-	N-S 11.25cm	E-W 9.25 cm east of profile	Fea. 9	Yes
11	N0E46	-	-	-	-	-	-	-	-	No
13	N0E32	Oval to Circular	-	Strat A, Lvl 4	20 cm	-	N-S 42cm	-	-	Unknown
14	N0E32	Oval to Circular	-	-	-	-	-	-	-	Unknown
15	N0E33	Circular	Possible Post Hole	Strat C, Lvl 2	24 cm	42 cm	N-S 19cm	E-W 13 cm	-	Yes
17	N20E47	-	Shallow Basin	Strat B, Lvl 3	24 cm	31 cm	N-S 53cm	E-W 100cm	-	Yes
18	N5E47	Circular	Post Hole	Strat C	12 cm	62 cm	N-S 17cm	N-S13cm	-	Yes
19	N1E47	Oval to Circular	Oval Anomaly	Strat C, Lvl 1	29 cm	37 cm	34 cm	26cm	-	Unknown

Table 1. Cultural Features (cont.)

20	N0E46	Rectangular	Linear Trench	Strat B/C Interface	30-31 cm	42 cm	-	-	-	Yes
21	S4E47/S5E47	Oval to Circular	Possible Post Hole	Strat A, Lvl 4	about 28 cm	-	-	-	Fea. 22	Unknown
22	S4E47/S5E47	1/4 Circle	Post Hole	Lvl 4	about 28 cm	below 80- cm	-	-	Fea. 21	No
23	S4E47/S5E47	Oval	Small Basin	Lvl 5	about 45 cm	53 cm?	N-S 19cm	E-W 27cm	Fea. 21 and Fea. 22	No
24	N0E42?N0S1?S2E47 S1E47	Elongated Oval	-	Lvl 4	23.5 cm	27.5 cm	NE-SW 108cm	42 cm	-	Yes
25	N0E43	-	Possible Post Hole	Strat B, Lvl 1	28 cm	-	-	-	-	Unknown
26	S2E47	Slightly Curved	Possible Post Hole	Lvl 4	23.5 cm	-	E-W 31cm	20cm	-	Yes

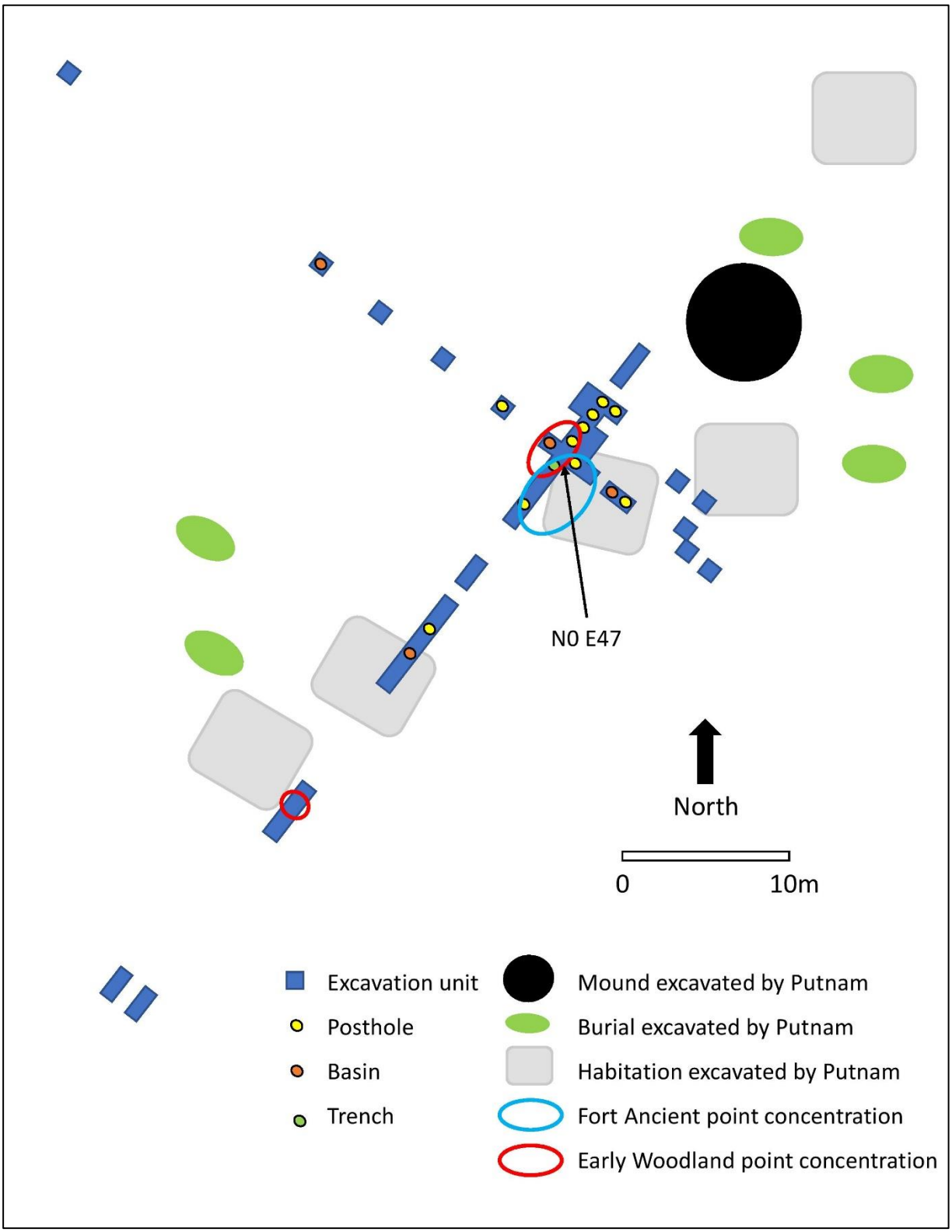

Figure 4. Plan map of excavated units showing generalized locations of features and concentrations of diagnostic projectile points.

Lithic and Indigenous Ceramic Summary

We provide a basic summary of the artifact assemblage here, focusing primarily on lithics and Indigenous ceramics. While our focus in this paper is lithics and ceramics, it should be noted that there are a considerable number of other artifacts and ecofacts summarized in more detail in Roberts Thompson et. al. (2013). The bulk of these materials are faunal remains (523 [430.40g]), including many that could be identified to species. Based on a qualitative assessment of the assemblage, there is a high frequency of deer elements. There are also a number of historic artifacts (80 [150.5g]) in the collection, including glass shards (23 [58.7g]), coins (15 [48.7g]) and metal fragments (16 [28.2g]). The vast majority (31 [87%]) of the historic material with vertical provenience data are from the uppermost level of the excavation units, which suggests little disturbance from recent activities to the deeper levels. This is an important consideration when assessing vertical relationships (see below).

Lithics

The lithics excavated during the 1988-1994 waterline project include the typical range of chipped and groundstone forms as would be expected for Adena and Fort Ancient occupations (Tables 2 and 3**)**. Overall, flake debitage and flakes dominate the assemblage although very few flakes showed evidence of retouching or thermal alteration, while more showed signs of being utilized. Cores and shatter (grouped together as it was often difficult to distinguish between them) were also extremely common, the latter often likely occurred as result of the use of small local pebble cherts with bipolar reduction (Jeske 1992).

Most of the projectile points recovered from the waterline excavations include triangular Fort Ancient forms (Figure 6), along with several stemmed Early Woodland Adena projectile points (Figure 7). Additionally, there are a few bladelets, scrapers, and unifaces in the assemblage. Ground stone lithic objects only included two hammerstones, two abraders, and a possible grinding stone. Some of the more unique ground stone artifacts include two stone artifacts, a crinoid fossil stem bead, and a slate gorget fragment (Table 3; Figure 8). More specifics about the lithic categories and definitions used for organization can be found in Roberts Thompson (et al. 2013: 50).

Veselsky's (2001:36-41) initial analysis of the Fort Ancient projectile point assemblage for these excavations was based on Railey's (1992) typology (see also Cook and Comstock 2014). We used the same typology and came up with similar results. For example, there are relatively few Late Fort Ancient points (ca. AD 1400 to 1650) in the collection (Type 6 [13%]), more of them being consistent with the earlier Fort Ancient periods (ca. AD 1000 to 1400) (Type 2 [33%]). However, as is frustratingly often the case, the bulk of them are indeterminate as to temporal affiliation (Type 5 [54%]). In order to maximize the sample size, we considered only the base shape for triangular points which have been shown to change from convex to flat to concave over the course of Fort Ancient culture (early to late). Results are consistent with the earlier convex bases being more common (20%) than the more recent concave bases (8%), with the majority being flat bases (72%). Based on available evidence from these projectile point data in comparison with other sites in southwest Ohio, we suggest it is most likely that the occupation of the Fort Ancient component of Serpent Mound occurred sometime between about AD 1100 and 1500.

Table 2. Chipped Stone Artifact Types, Counts, and Weights

Type	Count	Weight (g)
Projectile Points/Knives		
Early Archaic	1	5.10
Early Woodland Stemmed	2	15.70
Triangular	5	9.80
Adena Foliate Blade/Preform	1	23.20
Tip or Base Fragment	53	117.73
Unidentifiable	2	4.40
Total	64	175.93
Drill	5	26.50
Drill Fragment	19	26.90
Total	24	53.40
Bladelet Fragment	2	1.30
Total	2	1.30
Hafted	1	5.10
Non-hafted	3	13.20
Total	4	18.30
Unidentified Tool Fragment	31	226.70
Preform Fragment	1	9.70
Total	32	236.40
Complete	1	6.10
Fragment	7	11.42
Total	8	17.52
Flakes	9,931	4,619.47
Retouched Flakes	1	4.60
Thermally Altered Flake	2	3.40
Utilized Flake	26	66.30
Possible Utilized Flake	1	1.60
Shatter	2,080	2,885.12
Core Fragment	58	1,391.40
Possible Core Fragment	9	154.50
Total	12,108	9,126.39

Table 3. Groundstone Artifact Types, Counts, and Weights

Type	Count	Weight (g)
Abrader	1	105.9
Possible Abrader	1	264.1
Celt Fragment	1	433.0
Unidentified Fragment	2	29.9
Hammerstone	2	810.7
Possible Charred Sandstone	2	12.2
Possible Grinding Stone	1	700.0
Stone Bead	1	1.2
Gorget Fragment	1	3.5
Crinoid Stem Bead	1	0.6
Total	13	2,361.1

Indigenous Ceramics

Like lithics, the indigenous ceramic assemblage generally reflects what is found in Adena and Fort Ancient sites. A total of 4,584 indigenous ceramics were recovered from the excavations with a significant number large enough to analyze for temper and surface treatment as well as a large group that were so small (sherdlets) that we could only count and weigh them (Table 4). The indigenous ceramics in this assemblage included a variety of similar characteristics, the most common combinations being grit tempered with either smooth or cordmarked surfaces. Smooth grit and limestone tempered, plain limestone tempered, cordmarked grit tempered, cordmarked limestone tempered, cordmarked grit and limestone tempered were also present. Also within the assemblage were 53 rim/neck sherds, including pinched, folded, scalloped, flattened, rolled, and tapered rim forms (Figure 9) as well as plain, cordmarked and incised surface decorations. Common temper types for the rim/neck sherds included grit, limestone, shell as well as grit and limestone. Only a few handles are present including lugs and nodes. The rarity of shell temper and strap appendages is typical of Fort Ancient sites in smaller drainages north of the Ohio River in southwest Ohio (Cook and Fargher 2008).

Our preliminary interpretation of indigenous ceramics from the 1988-1994 excavations is that they are generally very similar to those excavated by Putnam from the Fort Ancient component. Griffin (1943: 56-64) examined indigenous ceramics recovered by Putnam from the village area and conical mound at the Serpent Mound site. His analysis divided the pottery assemblage as primarily being composed of two separate types: Fort Ancient Baum pottery and Adena Serpent Mound pottery. The Adena Serpent Mound pottery was recovered from the lower levels of the village and the conical mound. Characteristics include a medium to coarse grit tempering, although some limestone may be present with a smoothed surface. The coloring varied from a light olive to a reddish brown to reddish tan. Other coloring included grayish tan to brown. In contrast, the Fort Ancient Baum pottery was recovered from the upper levels of the village area. Characteristics include a fine to medium texture with grit, limestone, and shell tempering. Cordmarking is the primary decoration technique, although a small portion may be smoothed. Surface color varied slightly but primarily was gray to tan. In general, the 1988-1994

Figure 5. Field photographs showing a typical post hole (top) and wall trench (bottom).

Figure 6. Fort Ancient projectile points in the assemblage.

excavations reflect similar assemblages. We could not discern any clear distinction in temper type when comparing shallow and deeper levels of the non-feature deposits. While there may be sherds from the Early Woodland period in the collection we analyzed, which should be further investigated in the future, it seems likely that there are relatively few, and the majority of ceramics date to Fort Ancient time periods. This would also be consistent with Griffin's (1943: 61-62) note that there was likely only one Adena vessel in the lower deposit excavated by Putnam while there were clearly many more vessels in the higher Fort Ancient deposit (>300 sherds).

Stratigraphic and Density Summary

It was important to add some detail to the lithic and ceramic assemblages to generally assist in the interpretation, particularly to look at the likely house feature. As a result, we created some simple density maps for the lithic and indigenous ceramics and briefly looked at the

Figure 7. Early Woodland projectile points in the assemblage.

Figure 8. Bone and stone beads and a slate gorget fragment in the assemblage.

Figure 9. Selection of ceramic rim sherds in the assemblage.

vertical and horizontal stratigraphy of diagnostic projectile points to ascertain whether there were distinctions that may help to interpret broader chronological and cultural relationships.

The density maps revealed the expected pattern that the area where the trenches intersect yielded the highest artifact concentrations (see Roberts Thompson et al. 2013). This indicates, along with feature concentration in the same location, that this locale was more intensively used than other excavated areas; it is likely as habitation area (Figure 4). This is further supported by examining distinctions in the vertical and horizontal stratigraphy of the diagnostic Early

Woodland and Fort Ancient projectile points. We were initially concerned that this may be compromised by three factors: (1) the very small excavation areas, (2) the amount of prior disturbance by Putnam's excavations and, (3) early agricultural activities (although this does not appear to have impacted Griffin's [1943] findings based on Putnam's collection [as previously stated]). However, we were pleased to see the expected vertical stratigraphic relationship between the earlier Early Woodland projectile points (mean = 20cm below surface) and the more recent Fort Ancient arrow points (mean =15cm below surface) (Figure 10) (note that we excluded projectile points from features as depth is not strictly revealing of vertical stratigraphy in those cases). This relationship was significant (t-test, $p<0.05$). Furthermore, there was also a noticeable horizontal separation between the concentrations of these two broadly diagnostic projectile points, with the Fort Ancient projectile points more closely associated with the probable house structure as indicated by the post hole and trench concentration in the same area noted by Putnam as a habitation area (Figure 4).

Reconstructed Excavations and Possible Village Site Plan

When the 1988-1994 excavations were being analyzed for the Roberts Thompson (et al. 2013) report, there was not a complete map that showed the location of the excavations. At this time, we utilized a few incomplete maps that were present and the available photographs to identify the general location of the excavations: approximately 120 meters from the tail of the Serpent Mound and near the present-day picnic pavilion and a small mound. Since the writing of that report, an extensive magnetic gradiometry and susceptibility survey occurred at the site, providing more precise locations for the waterline excavations (Burks 2017:104). This remote sensing work relocated the waterline excavations as well as work by Putnam, particularly Putnam's Area 4, in a more concrete manner. Additionally, Burks (2017: Figure 57) identified numerous pit anomalies in this same locale. Now that there is a firm location known on the landscape, we can broaden the view and think about these projects in relationship to each other. In light of the diagnostic information from the artifact assemblage, it appears that the 1988-1994 excavations cut through the southwest portion of an Early to Middle Fort Ancient village (ca., AD 1000-1400) and there is enough evidence to present an initial layout of this Fort Ancient village.

Cook (2008) outlines that Fort Ancient villages often had circular zones of housing that surrounded an open plaza with small conical mounds on the plaza edges. We also know, based on previous research (Cook 2017) that incorporating earlier mounds into villages was common for Fort Ancient peoples. Indeed, the larger Adena mound in this area appears to have been in the Fort Ancient village. Houses within Fort Ancient villages typically had single post and wall trench styles, with wall trenches most often found in earlier Fort Ancient occupations (Cook 2017; Cook and Genheimer 2015). The trench features found in the 1988-1994 excavations correspond to this construction method. Unfortunately, the limited horizontal extent of the excavations impedes our ability to see more definitive house patterns. However, the numerous possible pit anomalies recorded by Burks' (2017) survey are likely associated with additional structures (not detected in the magnetic survey) as this is the same space that contains the numerous "habitations" encountered by Putnam (Figure 3). Overall, it appears that this area holds the most concentrated residential activity and appears to curve around a space with fewer pit anomalies. This space likely represents the open plaza area of the village (Figure 11).

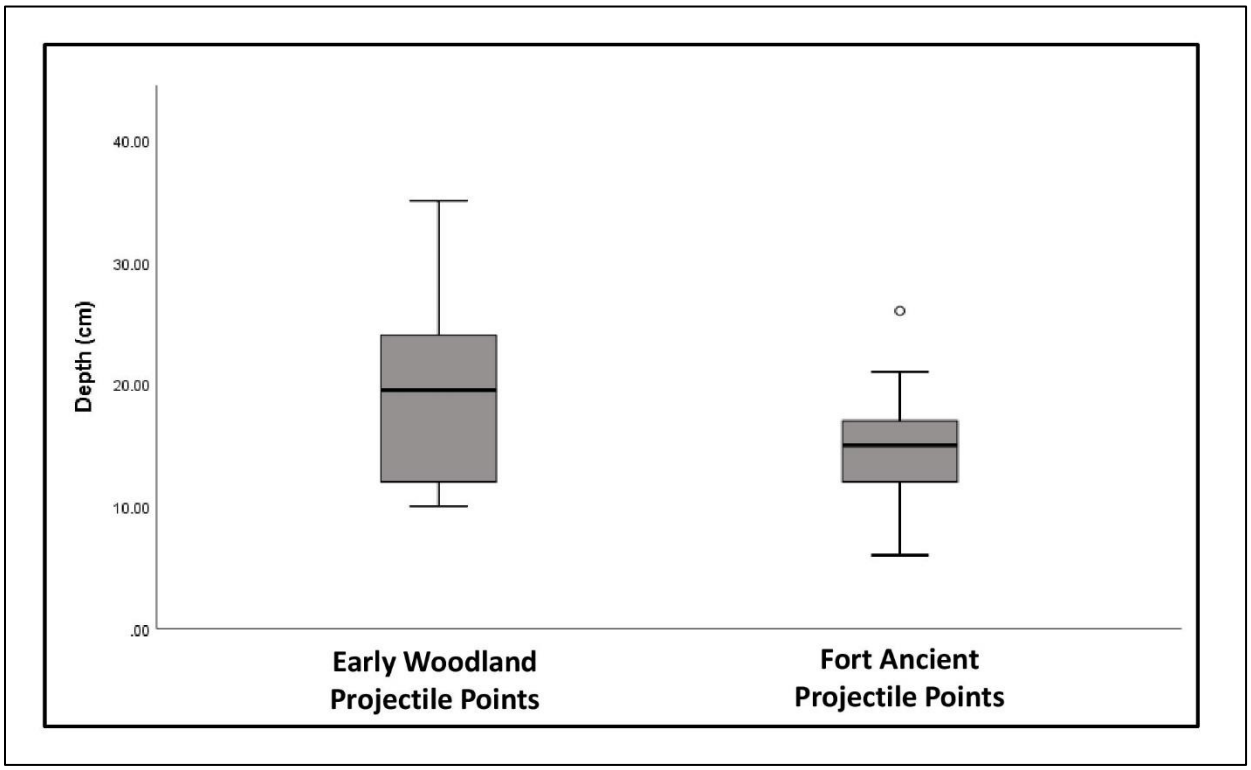

Figure 10. Box plot comparing depth below surface for Early Woodland and Fort Ancient projectile points in the assemblage.

Summary and Next Steps

What we have presented here is a basic summary of little-known excavations that occurred in 1988-1994 through the Fort Ancient village occupation near the Serpent Mound. It was important to present, even if done so in a brief way, an initial view of these excavations in conjunction with other data known about this area. Regarding this project, we have been able to propose a potential village plan that at least at this point, appears to correspond with what we know about typical Fort Ancient village plans. Our findings add to the broader literature regarding Fort Ancient in southwest Ohio and pave the way for future investigations of the extant assemblage as well as field work on the Fort Ancient component of the site.

For example, an analysis of the paleobotanical remains would be very helpful to compare against the accumulating knowledge regarding the differential reliance on maize and Eastern Agricultural Complex (EAC) plants (Martin 2009; Weiland 2019). We hypothesize that this region too would retain more of an EAC focus. Another glaring void is the absence of radiocarbon dates from this systematically excavated area. These would help immensely in resolving the common issues associated with projectile point typologies and could be easily obtained from a wide variety of carbonized organics in the collection. It would also be helpful to expose more of the structure indicated by the posthole, trench, and artifact concentration near the intersection of the 1988-1994 excavation units. A series of radiocarbon dates in specific areas of the site would provide an opportunity to contextualize the Serpent Mound's history and refine the very general and conservative estimate we have preliminarily given based on the lithics

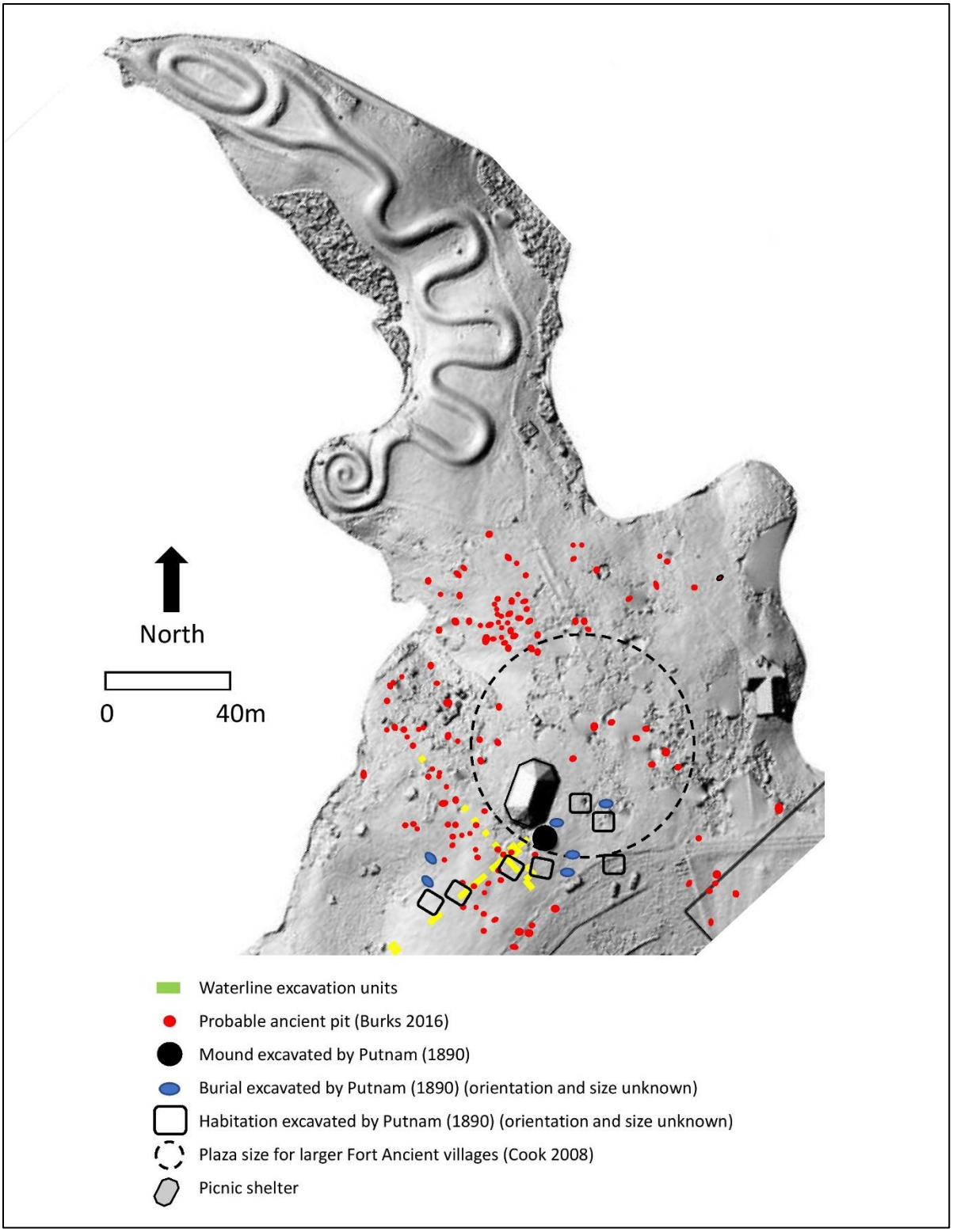

Figure 11. Location of 1988-1994 excavations (yellow) in the context of early excavations in this part of the site (Putnam 1890) and anomalies interpreted to be ancient features on the basis of a magnetic gradiometry survey (background photogrammetry image and pit feature anomaly locations based on Burks 2017; see Figure 2 for legend).

and indigenous ceramics (see Cook and Comstock 2014 for more discussion of this dating issue). Certainly, a widespread look at the dates from this area could provide additional evidence towards dating the effigy. Last, but not least, we see our summary and integration with the broader landscape as revealed through the recent comprehensive geophysical survey (Burks 2017) as setting the stage for more but limited excavations in other parts of our proposed village plan. Specifically, we propose targeting a series of pit features spaced around the proposed village plan to assess both spatial and temporal distinctions, aspects that have proven themselves of crucial importance in other Fort Ancient village contexts (e.g., Cook 2017).

There is no doubt that the Serpent Mound site is an important archaeological icon known the world over and was also important in the early professionalization and popularization of American archaeology as well as site preservation efforts, beginning with the purchase of the site by Harvard University to protect it from looters. As Putnam noted in the late 1800s on a watercolor made while in the field when he was conducting his pioneering to preserve what was likely the earliest recorded Fort Ancient village: "The trail of the serpent is over them all." While this quote is a bit dramatic, it does bring up the question of why is there a Fort Ancient village located so close to the effigy? What did living in the shadow of the serpent mean to those in the village? Did they construct it or were they using an earlier landscape as was their pattern elsewhere such as in the Miami Valleys (Cook 2017). In either case, it supports the importance that this landscape has held to indigenous peoples for a long period of time. Indeed, the connection extends to modern day living descendants.

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We want to first acknowledge that the Serpent Mound holds an indelible connection to modern day Indigenous people. Our analysis of the 1988-1994 collections was made possible through a loan by the Ohio History Connection and much thanks goes to Brad Lepper and Linda Pansing for assisting in making that possible. Lab space was provided by the Department of Anthropology at Ohio State University and the volunteer work by undergraduates was essential. Harvard University's Peabody Museum provided access to Putnam's collection as part of a fellowship for the senior author during the 2019-2020 academic year. Jarrod Burks permitted the reuse of portions of maps in his 2017 report. We would also like to thank Victor D. Thompson for his support of this project.

References Cited

Burks, Jarrod

2017 Large-Area Geophysical Survey at Serpent Mound State Memorial in Adams County, Ohio. Report prepared for Ohio History Connection, Columbus. OVAI Contract Report #2016-5.

Clay, R. Berle

1998 The Essential Features of Adena Ritual and Their Implications. *Southeastern Archaeology* 17:1-21.

Cook, Robert A.
2008 *SunWatch: Fort Ancient Developments in the Mississippian World*. University of Alabama Press, Tuscaloosa.

2017 *Continuity and Change in the Native American Village: Multicultural Origins and Descendants of the Fort Ancient Culture*. Cambridge University Press, Cambridge.

Cook, Robert A., and Aaron R. Comstock
2014 Toward More Continuous Artifact Analyses: Defining Key Dimensions of Fort Ancient Projectile Points. *Midcontinental Journal of Archaeology* 39: 222-250.

Cook, Robert A., and Lane F. Fargher
2008 The Incorporation of Mississippian Traditions into Fort Ancient Societies: A Preliminary View of the Shift to Shell-Tempered Pottery Use in the Middle Ohio Valley. *Southeastern Archaeology* 27: 222-237.

Cook, Robert A., and Robert A. Genheimer
2015 Wall Trench Structures in Fort Ancient Villages of Southwest Ohio and Southeast Indiana: Temporal and Formal Considerations. In *Building the Past: Studies of Prehistoric Wooden Post Architecture in the Ohio Valley-Great Lakes Region*, edited by Brian G. Redmond and Robert A. Genheimer, pp. 218-251. University Press of Florida, Gainesville.

Dancey, William S., and Paul J. Pacheco
1997 A Community Model of Ohio Hopewell Settlement. In *Ohio Hopewell Community Organization*, edited by William S. Dancey and Paul J. Pacheco, pp. 3-40. Kent State University Press, Kent, Ohio.

Drooker, Penelope B.
1997 *The View from Madisonville: Protohistoric Western Fort Ancient Interaction Patterns*. Museum of Anthropology, Memoirs No. 31, University of Michigan, Ann Arbor.

Essenpreis, Patricia S.
1982 The Anderson Village Site: Redefining the Anderson Phase of the Fort Ancient Tradition of the Middle Ohio Valley. Unpublished Ph.D. dissertation, Department of Anthropology, Harvard University, Cambridge.

Griffin, James B.
1943 *The Fort Ancient Aspect: Its Cultural and Chronological Position in Mississippi Valley Archaeology*. Anthropological Papers, No. 28, University of Michigan, Ann Arbor.

Henderson, A. Gwynn, editor
1992 *Fort Ancient Cultural Dynamics in the Middle Ohio Valley*. Prehistory Press, Madison, Wisconsin.

Henderson, A. Gwynn, and Christopher A. Turnbow
1992 Previous Fort Ancient Chronologies. In *Fort Ancient Cultural Dynamics in the Middle Ohio Valley*, edited by Gwynn Henderson, pp. 9-18. Prehistory Press, Madison, Wisconsin.

Herrmann, Edward W., G. William Monaghan, Willam F. Romain, Timothy M. Schilling, Jarrod Burks, Karen L. Leone, Matthew P. Purtill, and Alan C. Tonetti
2014 A New Multistage Construction Chronology for the Great Serpent Mound, USA. *Journal of Archaeological Science* 50:17-125

Jeske, R. J.
1992 Energetic Efficiency and Lithic Technology: An Upper Mississippian Example. *American Antiquity* 57: 467-81.

Kennedy, William E.
2000 Interpreting Fort Ancient Settlement Variability. Unpublished M.A. thesis, Department of Anthropology, Kent State University, Kent, Ohio.

Krupp, Rory
2020 New Deal, New Serpent: Public Works Projects at Serpent Mound State Memorial. *Journal of Ohio Archaeology* 7:56-83.

Lepper, Bradley T.
2001 Legends of Archaeology: Saving the Serpent. *American Archaeology* 5(1):11-13.

2005 *Ohio Archaeology*. Orange Frazer Press, Wilmington, Ohio.

2018 On the Age of Serpent Mound: A Reply to Romain and colleagues. *Midcontinental Journal of Archaeology* 43.1: 62-75.

2020 The Mississippian Iconography of Serpent Mound. *Journal of Ohio Archaeology* 7:38-55.

Lepper, Bradley T., James R. Duncan, Carol Diaz-Granados, and Todd A. Frolking
2018 Arguments for the Age of Serpent Mound. *Cambridge Archaeological Journal* 28:3: 433-450.

Martin, Kristie R.
2009 Eastern Agricultural Complex Traditions in Small Fort Ancient Communities – The Wildcat Example. Unpublished Master's thesis, Department of Anthropology, Ohio State University, Columbus.

Mills, William C.
1906 Explorations of the Baum Prehistoric Village Site. *Ohio Archaeology and Historical Quarterly* 15: 45-136.

Milner, George
2004 *The Moundbuilders*. Thames and Hudson, New York.

Pollack, David, and A. Gwynn Henderson
1992 Toward a Model of Fort Ancient Society. In *Fort Ancient Cultural Dynamics in the Middle Ohio Valley*, edited by A. Gwynn Henderson, pp. 281-294. Prehistory Press, Madison, Wisconsin.

2000 Insights into Fort Ancient Culture Change: A View from South of the Ohio River. In *Cultures Before Contact: The Late Prehistory of Ohio and Surrounding Regions*, edited by Robert A. Genheimer, pp. 194-215. Ohio Archaeological Council, Columbus.

Putnam, Frederic W.
1890 The Serpent Mound of Ohio. *The Century* 39: 871-888.

Railey, James A.
1992 Chipped Stone Artifacts. In *Fort Ancient Cultural Dynamics in the Middle Ohio Valley*, edited by A. G. Henderson, pp. 137-170. Prehistory Press, Madison, Wisconsin.

Roberts Thompson, Amanda, Robert A. Cook, and Victor Thompson
2013 Investigations of a Fort Ancient Village at the Serpent Mound State Memorial (33AD1): An Analysis of the 1988-1994 Waterline and Site Surface Excavations, Adams County, Ohio. Report submitted to the Collections Management Team, Ohio Historical Society, Columbus

Romain, William F., Edward W. Herrmann, G. William Monaghan, and Jarrod Burks
2017 Radiocarbon Dates Reveal Serpent Mound is More than Two Thousand Years Old. *Midcontinental Journal of Archaeology*, 42(3), 201-222.

Squier, Ephraim G., and Edwin H. Davis
1848 *Ancient Monuments of the Mississippi Valley*. Smithsonian Institution, Washington, D.C.

Schwarz, Kevin D.
2020 Use and Continuity on the Plateau: Recent Archaeological Investigations at Serpent Mound State Memorial, Ohio. *Journal of Ohio Archaeology* 7:5-37.

Veselsky, Katherine A.
2001 An Examination of Site 33AD1: The Serpent Mound Waterline Project. Senior Honors Thesis, Department of Anthropology, Ohio State University, Columbus.

Webb, William S., and Raymond S. Baby
1957 *The Adena People*. Ohio Historical Society, Columbus.

Weiland, Andrew
2019 Pathways to Maize Adoption and Intensification in the Little Miami and Great Miami River Valleys. Unpublished Ph.D. dissertation, Department of Anthropology, Ohio State University, Columbus.