

### 3. RECENT INVESTIGATIONS AT THE MOUND CITY GROUP

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Ohio Hopewell earthworks have been studied extensively, both in historic and in modern times. Mound excavations during historic and modern times have revealed much about the construction and use of mound space. More recent research at Hopewell sites in Ohio has focused on non-mound areas both within and adjacent to the earthworks. This article focuses on current research conducted outside of the enclosure at the Mound City Group.

Mound City Group is a Hopewellian earthwork complex consisting of 24 mounds surrounded by an earthen embankment that encloses approximately 13 acres. Mound City Group itself was first investigated in the 1840s by Ephraim Squier and Edwin Davis for their volume titled *Ancient Monuments of the Mississippi Valley*, the first publication of the Smithsonian Institution. Mound City Group later underwent professional excavations in the 1920s by Mills and Shetrone of the Ohio Historical Society, and in the 1960s and 1970s by various archeologists including James Brown, Raymond Baby, and Martha Otto.

The land located just north of the earthwork is referred to as the North 40-acre tract (Figure 1). This area went relatively undisturbed despite the construction of a World War I training camp, Camp Sherman, over a vast area to the south including where the mounds are located. Archeologists from the Midwest Archeological Center conducted archeological investigations in the North 40 tract during the early 1980s under the direction of Mark Lynott. Archeological investigation of the tract included controlled surface survey, shovel testing, and a limited number of test pits. Results of the investigations indicated three historic artifact scatters and a prehistoric site. The prehistoric site was designated 33Ro338 and determined to be from the Middle Woodland period based on the types of artifacts recovered. In 2006, park officials proposed a new vegetation management regime to allow the field of alfalfa and orchard grass to revert to forest. The proposal led to new investigations of the site and its relationship to Mound City Group.

In the summer of 2007, park archeologists and college interns conducted a magnetic survey over a portion of the North 40 tract. A Geoscan FM-256 fluxgate gradiometer was used to conduct the magnetic survey. The survey consisted of approximately one hundred 20 x 20-meter survey blocks (Figure 2). Magnetic anomalies, measured in nanoTesla, are very slight distortions of the earth's magnetic field caused by differences in the subsurface sediments and contents. Prehistoric features such as storage/refuse pits, fire pits, and earth ovens tend to be visible in the data as positive anomalies, shown in black, resulting from the addition of magnetic mineral-rich topsoil or from the firing of sediments. Historic disturbances such as metal objects and buried utilities are visible as bipolar anomalies, shown in black and white. Preliminary analysis located dozens of magnetic anomalies that based on their characteristics are probable prehistoric features.



**Figure 1.** Mound City Group Earthworks is in the lower portion of the image. The North-40 Tract is outlined with a white dashed line. The Scioto River is on the right.

Soil coring was chosen as the methodology to ground-truth magnetic anomalies because it is minimally destructive and can be executed quickly and efficiently. A sample of seventeen magnetic anomalies was chosen for coring on the basis of strength or magnitude, as well as the overall configuration of the anomaly. Anomalies were relocated on the ground with the use of a Total Station surveying instrument. Each core was dug through the plowzone soil until sterile subsoil was encountered. The soil removed from each core was examined for the presence of artifacts. Eleven of the seventeen cores were found to contain prehistoric artifacts at depths below the plowzone soil.

We suspected two linear anomalies, located northwest of the five aligned circular anomalies, of being part of the post pattern of a prehistoric structure (Figure 3). Portions of the linear anomaly appear to reflect individual posts while other portions are more continuous in form. The area underwent preliminary testing in 2007, by removing one square meter of dirt over a portion of the anomaly. With the plowzone removed, several features were apparent: two closely spaced posts, a small area of light colored soils, and adjacent areas with high gravel content.

Based on the promising results of the 2007 fieldwork, park staff and volunteers returned to the site in the summer of 2008. Research objectives were two-fold—to continue testing the linear anomaly and to test one of the five aligned anomalies. A 2 x 2 meter unit was set out over the southwest corner of the linear anomalies. The

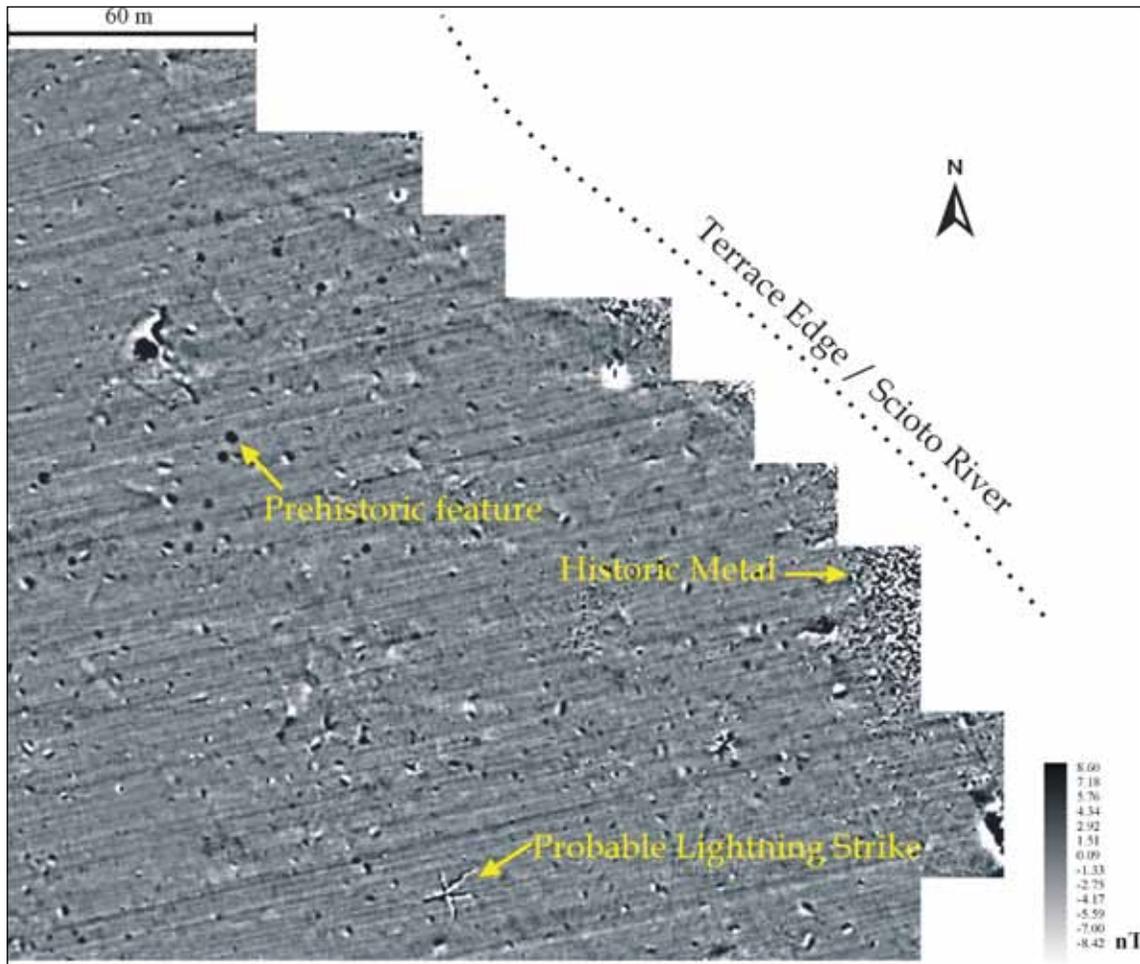
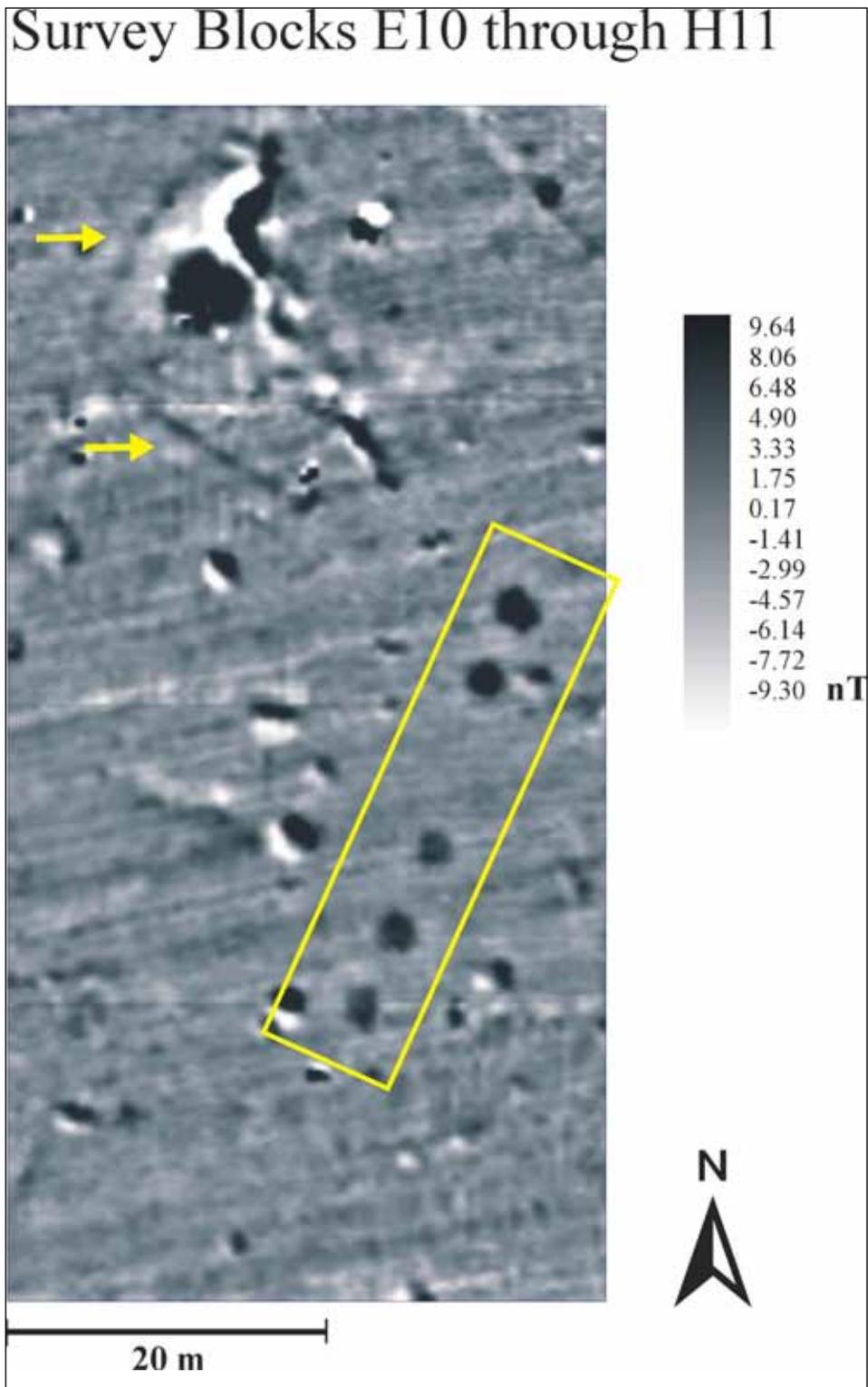


Figure 2. Magnetic survey data from the southern half of the 40-acre tract.

only diagnostic artifacts recovered during removal of the plowzone in this location were twelve bladelet and bladelet fragments (Figure 4). The presence of the bladelets provided evidence for some type of Middle Woodland/Hopewell occupation at this location. Removal of the plowzone soil over an area of approximately 2 x 3 meters revealed four post holes (Figure 5). The post holes of the structure are readily visible in the surrounding gravel. The gravel is of glacial origin but is much higher in the soil profile than is typically found on this outwash terrace, and is very dense. The post holes lacked this glacial gravel and contained organic-rich soil and wood charcoal. The posts are approximately 20-25 cm in diameter and 75-90 cm deep from the ground surface. The only artifact, other than charcoal, recovered from the post holes was the base of a corner-notched spear point. Therefore, the 2008 excavations based on the magnetic survey data did support the idea of a prehistoric structure in this location.

In 2009, we employed a backhoe to remove the bulk of the plowzone soil in a transect 2 meters wide by 25 meter long and oriented east-west across the structure (Figure 6). The remaining five centimeters of plowzone soil was removed with shovels and trowels so as not to disturb any sensitive features related to the floor of the structure. Additional post holes were confirmed and continued as expected along the



**Figure 3.** Two linear anomalies (indicated with yellow arrows) and smaller circular anomalies (outlined in yellow) that relate to a prehistoric structure and associated pit features.



**Figure 4.** Bladelet and bladelet fragments recovered from a 2 x 3 meter area of plowzone over the four excavated post holes.



**Figure 5.** Four post holes visible after the removing the plowzone soil. The four post holes after excavation inset.

western wall. The gravel layer was found not to be continuous but rather confined to the western end of the transect and found to terminate abruptly, suggesting the gravel was purposely laid as part of the architecture of the building. Possible interior features exist across the floor of the structure. This fieldwork is currently ongoing. Only two of the walls are visible in the magnetic data. No linear anomalies are visible in the magnetic data in the area where one would expect the other two walls of posts. Future excavations should allow us to determine if the other walls of posts are present and if they are, why they are not visible in the magnetic data.

Another goal of the prior and current field season was to investigate the five aligned anomalies. This area is located approximately 30 meters southeast of the excavated post holes. The strength of the aligned anomalies, on average 9.4 nT, are of a magnitude typically associated with prehistoric pit features, and these five anomalies tested positive for prehistoric artifacts below plowzone during coring. During the summer of 2008, park staff and volunteers excavated one of five aligned magnetic anomalies. The middle anomaly was chosen for excavation. A large, circular pit feature was uncovered, approximately 2 meters in diameter with a depth of 83 cm below ground surface. The feature was divided into quadrants and the northwest and southeast quads excavated. With the exception of one small, cordmarked pottery sherd and a few pieces of fire-cracked rock, only complete and fragmented ovate bifaces (stone tools that have their edges shaped out for later use or later finishing into specific tool types) and



**Figure 6.** Photo of the 2 meter x 25 meter transect to remove the bulk of the plowzone soil over the structure area.

associated chert debitage (flakes and shatter created during the tool making process) were recovered from this pit feature. To learn more about the pit's bifaces and debitage, Dr. Richard Yerkes of the Ohio State University was asked to conduct microwear and technological analysis on the stone tools recovered from the feature. His findings suggest the chert debitage resulted from many different reduction (knapping) episodes and represents a variety of chert types. None of the bifaces or biface fragments (Figure 7) in the North Forty sample had any visible use wear, hafting traces, or "bag wear" on the edges or faces that would indicate that they had been used as tools or kept in leather bags before they were deposited in the pit feature. Dr. Yerkes concluded the four complete bifaces in the sample were not discarded tools, nor were they preforms cached in the pit for future retrieval and finishing. The bifaces and biface fragments recovered from the pit feature seemed to have been rejected as a result of manufacturing errors such as humps or notches that would not allow them to be thinned further, or having been broken during the manufacturing process. The bifaces are similar to those found in several contexts at the Mound City Group.

Also during the 2009 field season, park staff and volunteers excavated the northern-most of the five aligned anomalies. The pit feature is slightly more irregular in shape with its widest dimension being approximately 4 meters in width. The southern half of the feature is being excavated thus preserving the northern half. The pit feature has a strong magnetic signature but has been found to contain relatively little charcoal and no evidence of in situ (in place) burning. The pit feature does however contain



**Figure 7.** Bifaces and biface fragments recovered from one of the pit features.

hundreds of pottery sherds (Figure 8) which may account for the strong magnetic signature given that the pottery has been fired and was in a large concentration. The pit feature also contained fire-cracked rock, chert debitage, biface fragments, and several pieces of mica, an exotic material quarried from the Appalachians of North and South Carolina and used by the Hopewell.

Karen Leone of Ohio Valley Archaeological Consultants performed the analysis on the charred plant remains recovered from the feature and from the post holes in the previous field seasons. Remains from the current field season have not yet been submitted for analysis. Only one category of plant remains, wood, was identified in the sediment from the post holes. Most remains were either hickory or oak. Bark fragments accounted for approximately half of the wood assemblage. She also analyzed the charred plant remains recovered from the pit feature containing the bifaces. The pit feature yielded less than .3 grams of charcoal, consisting of cedar, basswood, charred nutmeat, and unidentified plant material. Although both northern white cedar and western red cedar occur in Ross County, cedar is rarely recovered from archeological contexts and is usually associated with ceremonial activity such as mound contexts. The charred plant remains are very small and fragmented therefore the cedar identification is a tentative one.



**Figure 8.** Park volunteers excavating the pit feature containing hundreds of pottery sherds. Rim sherd of small vessel show in inset.

To date, the archeological investigations have uncovered evidence of a structure and associated pit features with specialized deposits of stone tool manufacture and of pottery. AMS (Accelerator Mass Spectrometry) dates obtained from wood charcoal recovered from three of the post holes and the pit feature containing the bifaces yielded dates of 1940 +/-40 RCYBP (radiocarbon years before present), 1920 +/-20 RCYBP, 2010 +/-40 RCYBP, and 1890 +/-40 RCYBP, respectively, and place the features within the Middle Woodland period. The dates obtained place the features within the early period of construction and use of the adjacent mounds and earthwork at approximately 2,000 years ago. Material from the current field season has not yet been submitted for dating.

In conclusion, site 33Ro338 seems to represent a Hopewellian structure and several associated pit features. Research questions for the project include, what was the function of the structure within the Hopewellian settlement system, and whether there is chronologically or stylistically sensitive material in the site to indicate contemporaneous use with the adjacent earthworks.

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