Cleveland State University
EngagedScholarship@CSU

Undergraduate Research Posters 2018 | Undergraduate Research Posters

2018

Archaeological Investigations at the Fort Hill Earthwork Complex

Michael Dodrill
Cleveland State University

Bridget Coyne
Cleveland State University

Follow this and additional works at: https://engagedscholarship.csuohio.edu/u_poster_2018

 Part of the Anthropology Commons, and the Sociology Commons

How does access to this work benefit you? Let us know!

Recommended Citation

Dodrill, Michael and Coyne, Bridget, "Archaeological Investigations at the Fort Hill Earthwork Complex" (2018). *Undergraduate Research Posters 2018*. 7.
https://engagedscholarship.csuohio.edu/u_poster_2018/7

This Book is brought to you for free and open access by the Undergraduate Research Posters at EngagedScholarship@CSU. It has been accepted for inclusion in Undergraduate Research Posters 2018 by an authorized administrator of EngagedScholarship@CSU. For more information, please contact library.es@csuohio.edu.

ARCHAEOLOGICAL INVESTIGATIONS AT THE FORT HILL EARTHWORK COMPLEX

Bridget Coyne and Michael Dodrill
Student Researchers

Phil Wanyerka (Ph.D.)
(Faculty Supervisor)

Department of Criminology, Anthropology, & Sociology

Abstract

Geophysical and archaeological investigations were conducted this past summer at the Fort Hill Earthwork Complex, located in the Rocky River Reservation of the Cleveland Metroparks. Our investigations have not only revealed when the earthworks were created and by which prehistoric culture group, but we also have uncovered data to suggest how they were constructed and for what possible purpose they may have served. In addition, we conducted extensive archival research at several local historical societies and museums looking for previously unpublished information about this site's initial discovery in the mid-1800s and for any additional information concerning the prehistoric occupation of the Rocky River Valley.

Introduction

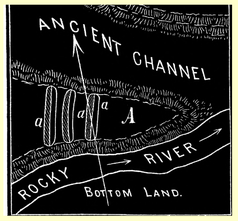
Until now, limited archaeological investigations have been conducted at the Fort Hill Earthwork Complex. The site was first reported and mapped by famed Cleveland archaeologist Col. Chas. Whittlesey in 1888. Whittlesey noted that the site lies atop a 100 foot-high, steeply sided plateau, located just north of where the Rocky River splits into its East and West Branches. The earthworks are located at the eastern-most end of this plateau and consists of a triple line of earthen embankments with external ditches that run roughly north/south across the corner of the plateau.

Whittlesey stated the dimensions of the earthwork as follows:

* Hilltop encloses 5 acres
* Western Wall 150 feet N/S
* Width of Walls 15 feet E/W
* Ditch between Walls 11 feet

A

B



C

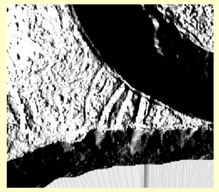
A) Google Aerial Image of Fort Hill. B) Colonel Charles Whittlesey
C) Whittlesey's 1888 Map of the Fort Hill Earthwork.

Following Whittlesey's discovery of the Fort Hill earthwork in 1888, no further archaeological investigations were conducted for nearly 100 years. In 1985, archaeologists from the Cleveland Museum of Natural History conducted a brief archaeological survey and assessment of the site. Though their excavations failed to recover any diagnostic artifacts, by comparing their research with another local earthwork site they tentatively assigned a Late Woodland date (AD 500-900) for Fort Hill.

Methodologies

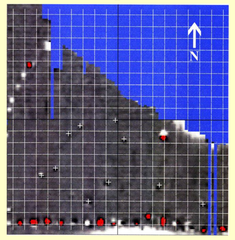
While investigating the Fort Hill Earthwork Complex we employed several different research strategies besides archaeological excavations. Those strategies included extensive use of LIDAR and aerial imagery as well as gradiometer and cartographic survey data.

LIDAR (Light Detection and Ranging) is a remote sensing method that uses light in the form of a pulsed laser to measure ranges to the earth. These light pulses combined with other data recorded by the airborne system generate precise three-dimensional information about the shape of the earth and its surface characteristics.



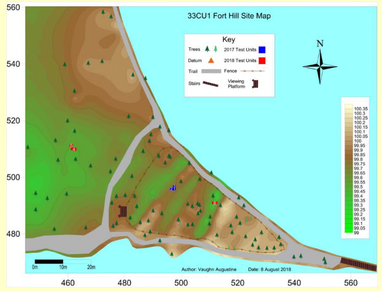
LIDAR Image of the Fort Hill Earthwork Complex

Fluxgate Gradiometer is used to measure the earth's total magnetic field at a given location. Its application in archaeology results from the local effects of magnetic materials within the earth's own magnetic field. Anomalies such as magnetic materials and minerals, as well as certain cultural features such as fire hearths, storage pits, and dwellings can be detected in the soil matrix. A total of 12,800 data samples were collected in the field and then downloaded into a laptop computer. The magnetic data files were then imported into GEOPLOT software for processing.



Michael Dodrill using our Fluxgate Gradiometer and the resulting image. The white check marks indicate magnetic cultural features.

Cartographic/Survey Data was gathered by extensively mapping the research area using a GTS 255 Topcon Total Station. The total station is a device that shoots a laser to a prism located atop a stadia rod. The laser is reflected back to the total station and measures the distance, elevation, and angle of the prism as its walked across the site. This allows our researchers to create a detailed map highlighting both the site contours and important physical/cultural features.



Archaeological Excavation

The results of the geophysical survey identified at least ten major subsurface magnetic cultural features. In order to assess, analyze, and interpret those features we conducted archaeological excavations to determine the nature of the buried magnetic anomalies. The excavations of several of these anomalies yielded organic materials which were used to radiocarbon date the initial construction phase for the earthwork and to determine its cultural affiliation and age. Our excavations helped to reveal how the earthworks were constructed as well.

A

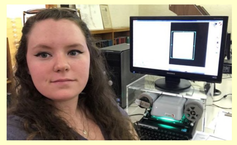
B

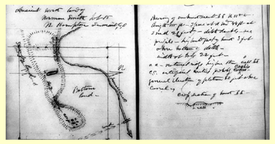
C

A) Test Unit 1 Featured a Fire Hearth Dating to 360 BC. B) A Steuben Expanded Stemmed Projectile Point. C) CSU Archaeologists Excavating Test Units 4 and 5.

Archival Research

Bridget Coyne spent the summer examining the archives of several noted repositories such as the Cleveland Museum of Natural History, the Ohio Historical Connection, the Western Reserve Historical Society, and the Hudson Historical Society looking for additional information and fieldnotes on previous investigations at Fort Hill and of the region. This archival research yielded a treasure-trove of previously unpublished information on our project area.





Bridget Coyne Operating a Microfilm Reader at the WRHS.

Analysis & Conclusions

Our research at the Fort Hill Earthwork Complex has been a tremendous success. First, charcoal recovered from a fire hearth feature beneath the middle embankment revealed a radiocarbon date of 360 to 156 BC. This date places the earliest construction phase of Fort Hill within the Early Woodland Period of Ohio Prehistory (1,000-100 BC) making this an Adena construction. Second, based on a macroscopic examination of the chert debitage recovered at Fort Hill, we have ascertained that a majority of this material can be sourced to chert deposits native to southwestern Indiana, more than 460 miles away. Third, our cartographic survey revealed two previously unknown "gateway" mounds which would have acted as an entryway into the complex.

Through our investigations we have been able to hypothesize several possible uses for the earthwork. The site is located high up on a bluff which would makes for a great strategic and defensive location. The lack of artifacts at this site also tells us that it was likely used as a religious/pilgrimage site. Finally, based on extensive astronomical observations we suspect that the earthwork complex was likely used to mark the spring and fall equinoxes. Standing between the gateway mounds and looking due east, the sun rises directly through the centerline of the site during the equinoxes.

Acknowledgements: This research was supports and made possible through an Undergraduate Research Grant provided by the Office of Research, Cleveland State University. We especially wish to thank the Cleveland Metroparks and the Department of Criminology, Anthropology, and Sociology for their help and support. We also wish to our 2018 CSU archaeological field crew for all of their dedication and hard work in making out season successful.