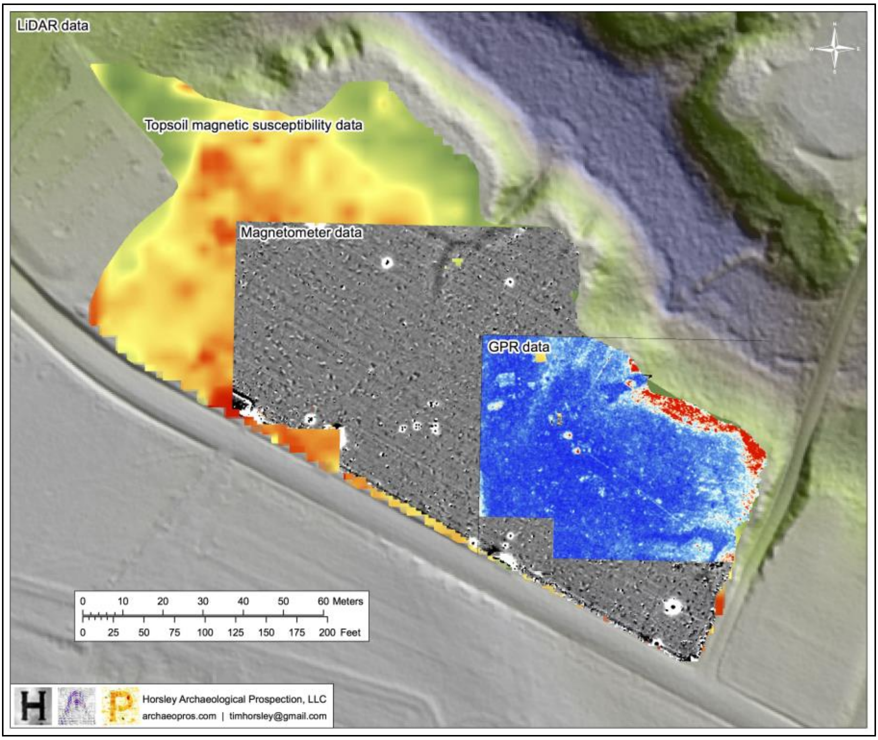
Maryland Archeology Month 2022

The Future of Studying the Past: Innovative Technologies in Maryland Archeology



Geophysical survey techniques employed at Historic St. Mary's City to rediscover the 1634 St. Mary's Fort, the location of which had eluded researchers for nearly 100 years.

www.marylandarcheologymonth.org

You are cordially invited to join
Maryland Governor Larry Hogan
in celebrating April 2022 as
"Maryland Archeology Month"

The State of Maryland

Proclamation

From the Governor of the State of Maryland

MARYLAND ARCHEOLOGY MONTH
APRIL 1 - 30, 2022

WHEREAS, *Maryland's many remarkable archeological discoveries at such sites as the colonial capital of Annapolis, Fort Frederic, the Herman Barton Village, Mount Calvert, Paw Paw Cove, Rosenstock, and St. Mary's City are of state and national significance; and*

WHEREAS, *Archeology sites and artifacts provide a tangible link to at least 13,000 years of human occupation in Maryland, deepen our understanding of the state's diverse history and culture, and reveal otherwise unavailable information about the origins of our communities and traditions; and*

WHEREAS, *Advances in modern technologies have enhanced the methods of discovery, documentation, and preservation of Maryland's archeological record; and*

WHEREAS, *The protection, study and interpretation of these unique and irreplaceable links to the past provide educational, scientific, and economic benefits for all citizens; and*

WHEREAS, *The Maryland Historical Trust has collaborated with the Prince George's County Department of Parks and Recreation, the Archeological Society of Maryland, the Council for Maryland Archeology, Jefferson Patterson Park and Museum, the Maryland Department of Transportation's State Highway Administration, Historic St. Mary's City, and other individuals and organizations to inform and involve the pubic in the excitement of archeological discovery in our state.*

NOW, THEREFORE, I, LAWRENCE J. HOGAN, JR., GOVERNOR OF THE STATE OF MARYLAND, do hereby proclaim APRIL 1 - 30, 2022 as MARYLAND ARCHEOLOGY MONTH in Maryland, and do commend this observance to all of our citizens.

Given *Under My Hand and the Great Seal of the State of Maryland,*
this 1st *day of* April
Two Thousand and twenty-two

Governor

Lt. Governor

Secretary of State

The Future of Studying the Past: Innovative Technologies in Maryland Archeology

Zachary Singer, Chair, Maryland Archeology Month Committee

Archeological sites are non-renewable resourced formed by the activities of people in the past. Physical excavation of sites is an important method for learning about the past, however excavating is an inherently destructive endeavor. Advances in technology have transformed how archeologists study the past by providing opportunities for minimally invasive excavations. Remote sensing technologies allow archeologists to detect potential resources before excavating. With the aid of GPS receivers and GIS mapping software, the coordinates of potential archeological resources can be precisely determined and then targeted for surgical examination through excavation.

Modern technologies have also enhanced archeologists' abilities to glean information from archeological sites and artifacts. Improvements in radiometric dating techniques allow precise dating of archeological sites using minute samples as small as a single carbonized seed. X-ray fluorescence and X-ray diffraction permit archeologists to characterize the geochemistry and structure of soils, rocks, and ceramics. Residue analysis techniques facilitate the identification of preserved animal proteins and plant lipids on artifacts used to prepare food. Digital X-Radiography enables archeologists to penetrate metallic concretions to reveal important characteristics of artifacts. 3D modeling empowers archeologists to record and study artifacts and sites in digital formats.

I hope you enjoy the excellent case studies in this booklet highlighting great applications of innovative technologies in Maryland archeology. The perpetual refinement of these technologies both to be more user-friendly and more affordable will increase the future adoption of these specialized techniques in archeology toolkits and enhance the discovery, documentation, and preservation of Maryland's impressive archeological record.

You can see these innovative technologies in action when you become involved in the Maryland archeological community. Join the Archeological Society of Maryland, whose goals include the creation of bonds between avocational and professional archeologists. Volunteer on archeology projects in the field and the lab. Attend lectures, workshops, and site tours (see the Calendar of Events on the Maryland Archeology Month website, www.marylandarcheologymonth.org). By participating in the archeological community, both you and Maryland archeology will benefit!

Lastly, a special acknowledgment is due to Dr. Charlie Hall, the recently retired State Terrestrial Archeologist, who marshaled Maryland Archeology Month as the chair of the Maryland Archeology Month Committee for two decades. Thank you, Charlie, for your outstanding contributions to Maryland archeology and for your mentorship while guiding me through the 2022 Maryland Archeology Month planning process.

Table of Contents

The Future of Studying the Past 1

1. **Finding St. Mary's Fort Using Geophysical Survey**, Timothy J. Horsley, and Travis G. Parno 3
2. **Antibodies, Antigens, and Bear: Residue Analysis from a Middle Woodland Encampment**, J. Andrew Ross and Karen Hutchins-Keim 5
3. **Discovering 4,500 Years of Patuxent River History with Magnetic Susceptibility, Fluxgate Gradiometry, and Metal Detecting**, Stephanie T. Sperling 7
4. **X-Ray Diffraction in Archaeology**, John S. Wah 9
5. **Shell Midden Archaeology and Maryland's Plan Communities**, Torben C. Rick 11
6. **Preserving the Past: Planners Use High-Tech Tools to Bring a Historic Headstone's Inscription back to Life**, Brian Crane and Kacy Rohn 12
7. **The Shipwreck Tagging Archaeological Management Program (STAMP)**, Austin Burkhard 14
8. **X-radiography in Archaeology: a M1841 "Mississippi" Rifle Case Study**, Nichole Doub 16
9. **Unexpected Uses of LIDAR Data in Archaeology**, Scott Strickland 18
10. **X-ray Fluorescence in Archaeology**, Stephanie Whitehead 20

12. **Field Session Teaser – Ground Truthing Barwick's Ordinary**, Matthew D. McKnight 22

Archeology Volunteer Programs 23

Messages from Institutional Sponsors 26

Messages from Supporting Organizations 28

Maryland Archeology Month 2022 Sponsors .... Back Cover

---

This year the ASM and the Maryland Historical Trust will conduct their 51st annual Tyler Bastian Field Session in Maryland Archeology at the Barwick's Ordinary Site (18CA261) in Caroline County from May 20-30, 2022. See Dr. McKnight's Field Session Teaser for more information. Please watch the website of the Archeological Society of Maryland (*www.marylandarcheology.org*) for further details, and plan to join the effort on the first Field Session on Maryland's Eastern Shore in 20 years!

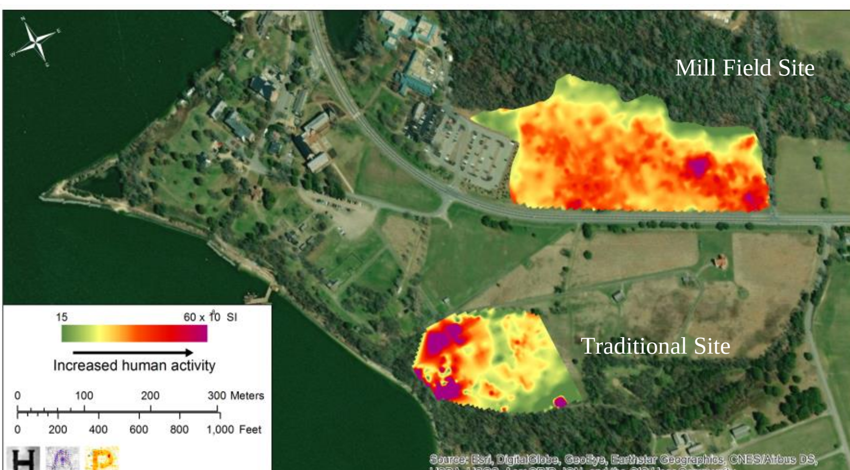
Cover Image credit Timothy J. Horsley, Horsley Archaeological Prospection

Finding St. Mary's Fort Using Geophysical Survey

Timothy J Horsley, Horsley Archaeological Prospection, LLC
Travis G. Parno, Historic St. Mary's City

As geophysical techniques become more commonly integrated into archeological projects in Maryland, they are helping us to map entire sites and cultural landscapes. At the St. Mary's City National Historic Landmark these methods have been used to rediscover St. Mary's Fort, the location of which had eluded researchers for nearly 100 years. After English settler-colonists landed on the shore of what is now St. Mary's River in March of 1634, historic records inform us that they constructed a fort on part of an existing settlement of the Yaocomaco, the indigenous tribe in this area. Research conducted by Historic St. Mary's City (HSMC) since the 1980s had revealed concentrations of early seventeenth-century material at two locations, but the precise location of the first permanent European settlement in Maryland remained unknown. In the hope of resolving this, HSMC commissioned Horsley Archaeological Prospection (HAP) to undertake geophysical surveys across these two possible locations – referred to as the *Traditional Site* and the *Mill Field Site*. This work was funded and supported by the Maryland Historical Trust (MHT) and the Historic St. Mary's City Foundation.

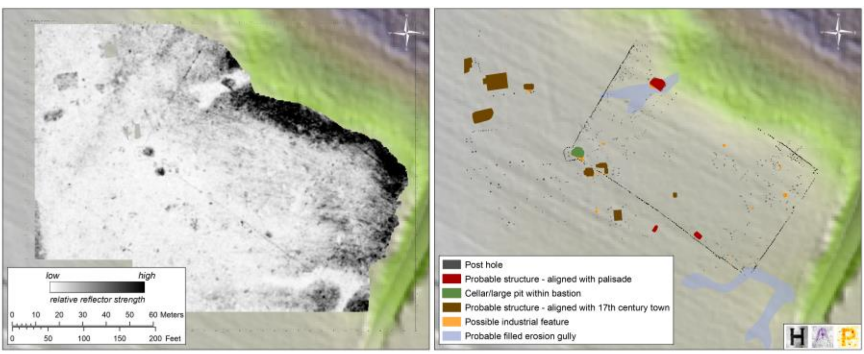
Given the 22-acre area of investigation, a sequential strategy was adopted that began with a large-scale reconnaissance method – magnetic susceptibility – to help identify areas of former habitation. The results indicate a significant degree of past human activity in the soil at both locations, but no obvious fort stands out. Since geophysical methods do not provide dating evidence, some of this activity could relate to the fort, Native American occupation (Yaocomaco or earlier settlements), as well as the later town of St. Mary's City.



This magnetic susceptibility "heat map" reveals concentrations and the distribution of past human activity at two possible locations of St. Mary's Fort.

Magnetometry was then conducted over parts of both sites to see whether a palisade, structures, and other features associated with St. Mary's Fort might be detected. Unfortunately, no direct evidence for the fort was found at either location, but at the Mill Field Site the results revealed a brick foundation and several features related to high temperature processes, i.e., kilns or furnaces. Historic records mention that a gunsmith was based near the remains of the fort in the 1640s, which could explain the furnaces.

The magnetometer results, coupled with the fact that an earlier excavation unit had revealed a short section of a possible palisade, led the subsequent GPR survey to focus on the northeastern corner of Mill Field, and this time the technique was successful. Almost immediately the well-defined lines of a palisade were revealed, with a distinctive bastion at the southwest corner. Only a few features can be discerned with confidence within the palisade, including three or four cut-and-filled features, probably cellars. Other structures are suggested by clusters and alignments of postholes, but these are difficult to distinguish in the data. There is no evidence for ramparts or a ditch. Subsequent excavations by HSMC have confirmed many of the geophysical interpretations and recovered artifacts that firmly date the palisade to 1634.



GPR results from the Mill Field Site (left), and simplified interpretation (right).

In addition to ongoing excavations at the fort site, a new phase of MHT- grant-funded geophysical study is currently underway to expand the GPR survey across the entire Mill Field. A new, multi-channel GPR system is being employed to survey all 15 acres at high-resolution and will produce a true 3D map of the subsurface. It is hoped that this additional detail will be able to resolve smaller postholes and help to map not just the European structures, but also the long history of Native American settlement on this landscape.

A multi-channel GPR system being towed across the Mill Field (Photo: HSMC).

Antibodies, Antigens, and Bear: Residue Analysis from a Middle Woodland Encampment

J. Andrew Ross and Karen Hutchins-Keim, RK&K

Archaeologists from Rummel, Klepper & Kahl, LLP (RK&K) conducted investigations at the Adelphi Site (18PR1024), a short-term Middle Woodland encampment (circa AD 850) in Beltsville, MD, on behalf of the Maryland Department of Transportation State Highway Administration for the Intercounty Connector Project. Fourier Transform Infrared Spectroscopy (FTIR) and crossover immunoelectrophoresis (CIEP) were utilized on artifact samples from the site to provide additional insights on the foodways of the site's inhabitants.

Typically, an article about a prehistoric archaeological site will focus on typological analysis of artifacts. The artifacts certainly do provide significant information to aid in interpreting a site. However, specialized analysis of the artifacts can offer nuanced and detailed information about the site's inhabitants. Twelve select artifacts from the Adelphi Site were submitted for residue testing to determine what plants or animals may have been utilized on the site. FTIR was used on three ceramic sherds to test for organic residues and CIEP was used to test nine stone tools for animal proteins. Here's what we knew about the site before those tests were completed.

Located on a poorly drained floodplain, it is thought the site was occupied temporarily during the late summer or fall dry season, enroute to or from larger encampments. Inhabitants repaired and replaced stone tools and cooked using ceramic pots over a central hearth. The recovery of Mockley ceramics (Figure 1) and Jack's Reef Pentagonal projectile points (Figure 2) made of non-local jasper suggest the occupants were likely part of a larger Middle Woodland community.

Figure 1. Mockley Ceramic with Swamp Potato Root Residue

The three ceramic sherds were submitted for FTIR analysis to test for residues of the foods cooked in them. The FTIR process involves soaking the artifacts in a solvent of chloroform and methanol (CHM) which absorbs organic residues present on the artifact's surface. The CHM solvent is allowed to evaporate, and the captured residues from the artifact are then placed in the path of infrared radiation beams which pass through the residue samples. By measuring the infrared wavelengths, a Fourier Transform Infrared Spectrometer converts the measured wavelengths to data which can be compared to an existing reference library of measurement data and match the wavelengths to known organic residues.

Using FTIR, the three ceramic sherds tested positive for residues of *Sagittaria* (Wapato, Swamp Potato) root. Other residues were present but not in sufficient quantities to be recognizable. *Sagittaria* is an edible tuber that is widespread across North America and is found in shallow waters and swamps and may have been present on-site at the time of occupation.

Figure 2. Jack's Reef Corner-Notched Point with black bear residue

Nine stone tools were submitted for CIEP residue analysis to test for the presence of animal proteins. CIEP is based on an antigen-antibody reaction and can be used to identify organic materials (antigens) present on tested artifacts. Antigen residues present on artifacts are removed in a “chemical bath” similar to the methods used in FTIR. The solution breaks down the bonds which allow proteins to adhere to the artifact. Soundwaves can also be introduced to the process to further loosen the protein bonds. Once any proteins are separated from the artifact, they are placed within a gel and introduced to known antisera (a blood serum containing antibodies) and electrophoresed. In a positive reaction the proteins and antisera will create a visible line in the gel between the two samples.

A Jack’s Reef Corner-Notched projectile point (Figure 2) from the site tested positive for black bear residue and a second Jack’s Reef projectile point tested positive for American eel residue. The negative results for the seven other samples may be the result of insufficient protein residues or a lack of use. The latter could be indicative of a new unused tool, or one discarded during manufacture due to failure – it broke before being finished. A tool may also have had any residues removed if the edges were resharpened after use. Given the amount of late-stage reduction present in the tool-stone workshops documented on site, these are all plausible theories.

How did these results contribute to the interpretation of the Adelphi Site? They offer information into the diet of Middle Woodland people at small encampments and provide insight to what attracted the occupants to the wetlands and banks of Paint Branch and Little Paint Branch--an environment suitable for Wapato and American eel harvest. The black bear residue on the point could be the result of a recent successful hunt either near the site or prior to arrival.

Discovering 4,500 Years of Patuxent River History with Magnetic Susceptibility, Fluxgate Gradiometry, and Metal Detecting

Stephanie T. Sperling, Senior Archaeologist, M-NCPPC, Dept. of Parks and Recreation, Prince George's County

Billingsley (18PR9) is situated on a prominent bluff overlooking the marshy confluence of Western Branch and the Patuxent River near Jug Bay. It was a favorite spot for avocational archaeologists throughout the twentieth century who walked its vast fields and picked up artifacts left by the countless Native people who lived in this area for at least 13,000 years. The 1670 Augustin Herrman map tells us that there were villages named "Wighkawamecq" and "Coppahan" on this bluff and historic documents suggest that the Native people remained until the early 1700s. But Billingsley is a huge property, encompassing over 150 acres, and there was little indication of precisely where these settlements were located.

Archaeologists with the Maryland Historical Trust (MHT) and the Maryland-National Capital Park and Planning Commission (M-NCPPC), Department of Parks and Recreation, Prince George's County recently partnered with the Archeological Society of Maryland (ASM) to search for the remains of the late-seventeenth century villages. The team also wanted to understand more about the long period of occupation at the site, considering that the artifacts collected by avocational archaeologists at Billingsley spanned over 9,000 years of human occupation representing the Early Archaic through the Late Woodland period.

After establishing a site grid, the archaeologists conducted several remote sensing surveys with multiple techniques to glimpse beneath the surface of the Billingsley fields. The team first used a magnetic susceptibility (MagSusc) meter to determine areas of enhanced cultural activity. This tool works by inducing a magnetic field and then determining how soils react. After processing the MagSusc data, the archaeologists realized they'd found a large area of anomalous soil in the south field and brought out the fluxgate gradiometer to narrow down where to excavate (Figure 1).

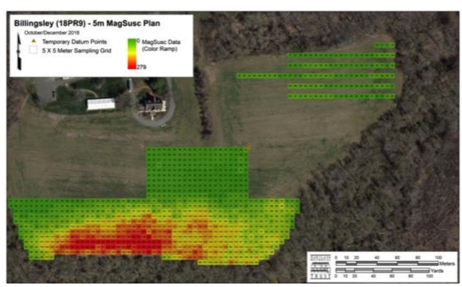


Figure 1. Magnetic Susceptibility Results

Fluxgate gradiometers are powerful instruments that use magnetometers mounted in an array to detect slight differences in the Earth's magnetic field. These magnetic anomalies might be caused by buried metallic objects, features containing soils with elevated levels of magnetic oxides resulting from high-intensity burning, like hearths or kilns, or even small post holes and palisades. The gradiometer data is processed to create a map revealing magnetic anomalies that might be cultural features.

The results of the gradiometer survey suggested that there were several magnetic anomalies worth investigating further. This information helped guide the placement of units excavated during the 2019 and 2021 Field Sessions at Billingsley (Figure 2).

Finally, metal detecting was used as a method of narrowing down where to look for Contact period Native occupations. The Maryland Free State Treasure Club worked with MHT and M-NCPPC to search for brass arrowheads, often found on sites from the time period. None were found, but brass scrap of a similar gauge ultimately pointed the team to a concentration of Late Woodland/Contact-era artifacts.

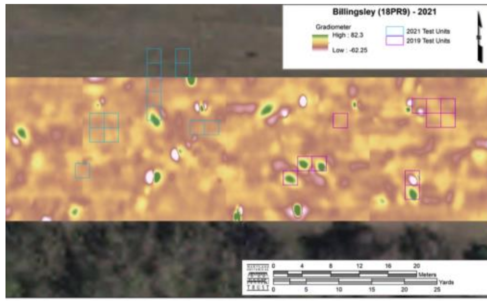


Figure 2. Fluxgate Gradiometry Results

Ground-truthing is always the final judge that determines if anomalies detected by remote sensing are cultural or natural. In this case, in every unit where the gradiometer predicted a cultural feature, one was encountered, including a buried living surface, hearths, and large pit features, all of which yielded artifacts and carbonized plant and animal remains.

Carbonized nutshells recovered from several Billingsley features were Accelerator Mass Spectrometry (AMS) radiocarbon dated. The AMS dates indicate reuse of the site for at least 4,500 years. Several Late Archaic pit features dated between 2500 and 2100 BC. One small hearth produced a Late Woodland calibrated date between AD 1400 and 1435. Another small hearth found near a concentration of Late Woodland/Contact-era artifacts yielded a date of AD 1458-1631, suggestive of a Late Woodland or Contact period component.

While the remote sensing surveys did not pinpoint the remains of the two presumably substantial Native villages of “Wighkawamecq” and “Coppahan”, they did reveal the location of a large and robust Late Archaic settlement that thrived 4,500 years ago and was used and reused for millennia, including during the Early Woodland, Middle Woodland, Late Woodland, and Contact periods. It seems clear that Billingsley, like many other sites in the surrounding Jug Bay Complex, can lend insight into thousands of years of history if archaeologists only know where to look.

X-Ray Diffraction in Archaeology

John S. Wah, Soil Scientist, Matapeake Soil & Environmental Consultants

X-ray diffraction (XRD) is a laboratory technique used to identify minerals based on their crystal structure. XRD has many possible applications within archaeology. In XRD, a sample is bombarded with characteristic x-rays. The angle at which those x-rays are reflected is a function of the spacing of planes within the crystal lattice and is used to identify the minerals. X-ray diffraction can be applied to cultural materials recovered from archaeological sites, to features, and to the sediments and soils of an archaeological site.

XRD can be used to link pre-contact ceramics recovered at archaeological sites to the clay source areas where people extracted the raw material based on the mineralogy of both the clay sized (< 2 μm) particles and larger particles, inadvertently or intentionally included in the clay body, provided the source soils are unique or limited in distribution. For example, Jackland Series soils are rich in smectitic clay minerals and form in diabase, basalt, and gabbro on the northern Piedmont in Maryland and Virginia. Ceramics made of clay from a Jackland Series soil might be identified based on the high amounts of smectite in the clay fraction or from the presence of diabase or other parent rock particles in the silt or sand fraction. Additionally, Jackland Series soils have common iron-manganese concretions that can be distinctive.

Analysis of clay minerals and iron oxides by XRD can also be used to address suspected burn features like hearths and roasting pits on archaeological sites. Heating of clay minerals alters their structure. Smectites collapse irreversibly after heating beyond a certain temperature while in other clay minerals, distances between structural planes (d-spacing) decrease when heated. Iron oxides are also altered by heat with magnetite, goethite, and ferrihydrite transformed to maghemite and hematite. Alteration of clay minerals and iron oxides in a feature can be a strong indicator of burning.

Where XRD might play its greatest role is in the characterization of the soils and sediments of an archaeological site. Soils and sediments, including their mineralogies, can be used to understand landscape evolution and reconstruct environments that influenced behavior. Along the Chesapeake Bay in Maryland, mineralogy of fine silt-sized particles (2-20 μm) shows a homogeneity in the 12,900 to 11,600 year old Younger Dryas loess (Figures 1 & 2). Over a contrasting parent material (eg. Schist bedrock on the MD Piedmont) mineralogy would identify the archaeologically significant yet often overlooked loess deposit, which has the potential to bury and preserve Paleo-Indian and earlier sites.

Figure 1. Younger Dryas loess from the western Delmarva Peninsula in MD.

Mineralogy is indicative of landscape stability as minerals in the soil weather and transform on stable landscapes over time. Mineralogy can also be used to identify stratigraphic markers and corroborate dates if allogenic materials (eg. volcanic ash) tied to dated events in other areas are identified in a horizon.

Lastly, clay mineralogy can help identify natural site disturbances resulting in mixed archaeological components. Clays with low layer charge are subject to shrinking and swelling with drying and wetting and 'self mixing', which can result in the displacement of artifacts. Vertisols, soils with high smetitic clay contents, can be particularly problematic due to the vertical movement of artifacts throughout the soil profile.

X-ray diffraction can play a significant role in archaeological investigations. It can be used as a primary tool for addressing research questions (e.g. identifying source areas for precontact pottery); as a method to test or support interpretations and/or other archaeological evidence (e.g. determining whether soils have been heated by fire and corroborating dates); to help interpret environments; and to identify soils that might be naturally problematic for archaeological site preservation and interpretation (e.g. smectite rich soils mixing archaeological components). While XRD many not be appropriate to use on every archaeological site, it's another tool available to help explain the past.

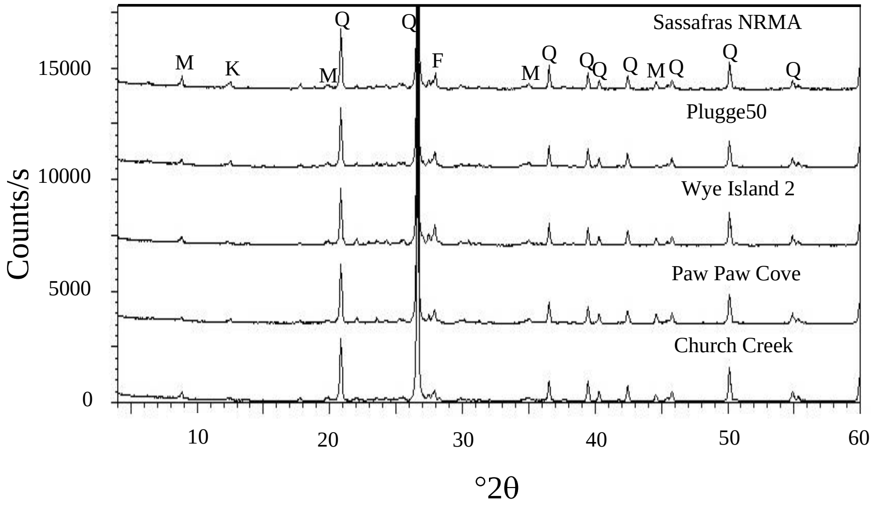


Figure 2. X-ray diffraction pattern showing the mineralogy of fine silt fraction (2-20 µm) of the Bt horizons formed in Younger Dryas loess from sites across the western Delmarva. Q=quartz, K=kaolinite, M=mica, F=feldspar.

Shell Midden Archaeology and Maryland's Plant Communities

Torben C. Rick, Department of Anthropology, National Museum of Natural History, Smithsonian Institution

Drawing on a variety of innovative technologies, an interdisciplinary team of archaeologists and biologists investigated how past Native American land use—documented by people's food remains, ceramics, tools, and other materials deposited in archaeological sites—influenced soil conditions and plant communities today (Figure 1). We examined soils and plants on and off of shell middens, dense accumulations of oysters, bones, and artifacts, near the Rhode River. We excavated six shell middens, with a key part of our work using Accelerator Mass Spectrometry (AMS) radiocarbon dating to document the age of the sites. An oyster shell fragment, charred seed, or deer bone was used for AMS dating to build a site chronology, often with error rates of ~30-40 years.

Figure 1. 18AN308 is a ~3000 year old shell midden. The area harbors unique plant communities compared to adjacent off-site areas.

After documenting the age and types of artifacts, shells and animal bones at the sites, we collected soils from shell middens and immediately adjacent (off-site) to the site. We focused on six archaeological sites that were AMS dated from 3000-200 years ago. Applying different technologies, we tested soil acidity, grain/particle size, and nutrients such as nitrogen and calcium. We found that midden soils, even those ~3000 years old, were greatly enriched in nitrates and calcium, with more neutral pH compared to the off-site soils. Plant communities were also significantly different, with shell midden soils supporting more plant species compared to areas immediately off-site, especially grasses and herbs. The shell middens also were more likely to host more native plants.

The use of innovative technologies like AMS radiocarbon dating and the analysis of soil chemistry/nutrients showed a correlation between Native American land use over hundreds or thousands of years and the abundance of native plants growing on a shell midden today. This knowledge is important for environmental managers seeking to understand future changes in plant and other communities in the wake of climate and other environmental change. This research also underscores the value of conserving and studying archaeological sites, the importance of using innovative technologies, and the need for interdisciplinary work integrating archaeology and biology.

Preserving the Past: Planners Use High-Tech Tools to Bring a Historic Headstone's Inscription Back to Life

Brian Crane, PhD and Kacy Rohn, Montgomery County Planning Department

In recent years, the Montgomery County Planning Department's Historic Preservation Office has established an inventory of all cemeteries and burial sites in the county. This program responds to two laws adopted by the Montgomery County Council in 2017 to help preserve human burial grounds. These significant sites are protected cultural resources that also provide a treasure trove of information.

Genealogists and history buffs love cemeteries for the family history they contain, but time and nature pose challenges. Some historic gravestones have become so weathered that it's almost impossible to read them. New technologies have come to the rescue, offering ways to recover those lost inscriptions without damaging the stone. We have used photogrammetry at some of our burial grounds to help record and interpret inscriptions that are difficult or impossible to read.

Photogrammetry creates a 3D model from a series of digital photographs systematically taken from different vantage points. Computer software aligns the images in three dimensions and measures the distance between the subject and the camera based on the camera's known lens parameters and changes in the camera's relative position to the subject from one photograph to the next. Looking at a model rather than an original object that might be weathered or discolored allows the viewer to look past years of grime and digitally highlight subtle variations in the object's surface.

Recently, someone contacted the county for help deciphering the inscription of a 19th-century headstone in the Crabb Family Cemetery, a Montgomery County Master Plan Historic Site in Derwood. Planning staff visited the cemetery and found the stone in question. "In Memory of Walter, Son of…" was easy to read, but the death year could be read as either 1839 or 1859, and the names of Walter's parents were illegible.

The stone had deteriorated because of the material used to make it. Some gravestones are carved in highly durable stone like granite or locally produced Seneca sandstone. But in the 1800s, marble was a popular choice. People assumed that the beautiful smooth white stone would last forever, but marble is made from carbonate minerals highly vulnerable to weathering, especially by acid rain.

A 3D photogrammetry model of Walter's headstone revealed much more detail of the remaining inscription than what had been visible to the naked eye, including the parents' first names: Walter and Emma. A close look also suggested that the last name was short and began with a rounded letter, possibly an 'O.' Montgomery County's cemeteries include many family names that were potential matches, from Oaks to Oyers. We know the names of many people buried in historic cemeteries across the county due to the work of genealogists and local historians who have meticulously documented headstone inscriptions. This information is compiled in works such as *The Genealogical Companion to Rural Montgomery County Cemeteries* and is often posted online.

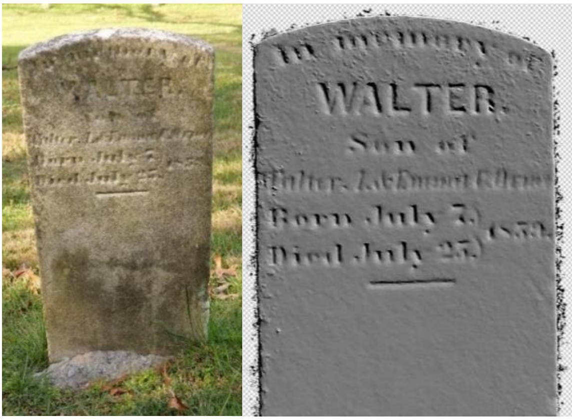


Figure 1. The headstone for infant Walter (left) is worn beyond legibility. Photogrammetry (right) helped recover the inscription.

“Orme” seemed to be the most likely of these commonly occurring family names, based on the legible letters. A search of historical marriage licenses revealed that Walter A. Orme married Emma C. Griffith in July 1858, names and dates that corresponded to the headstone. As further confirmation, the graves closest to Walter’s belong to Sarah and Philemon Griffith, whose daughter Emeline was born ca. 1832. Connecting the dots revealed a sad story: Walter and Emma (Emeline) married in July 1858 but seem to have lost their first child just a year later in 1859. The full inscription reads:

In Memory of
Walter
Son of
Walter A and Emma C. Orme
Born July 7,
Died July 25,
1859

This case demonstrated that modern tools like photogrammetry, paired with traditional historical and genealogical research, can further our understanding of burial grounds and their connection to broader community history.

In 2020, Montgomery Planning teamed with Archaeology in the Community to host a workshop that trained interested members of the public to take the photographs for photogrammetry. Our hope is to crowdsource the digital recordation of vulnerable headstones and family monuments in the county to help preserve the irreplaceable information they contain for future generations.

The Shipwreck Tagging Archaeological Management Program (STAMP)

Austin Burkhard, Marine Archaeologist, SEARCH

The Office of Archaeology at the Maryland Historical Trust adopted the Shipwreck Tagging Archaeological Management Program (STAMP) as a citizen science program to help monitor the degradation and location of beached shipwreck sites and disarticulated timbers over time. STAMP began in 2019 as my master thesis at the University of West Florida with support by the Florida Public Archaeology Network and the National Park Service Submerged Resources Center (NPS SRC). Since STAMPS creation, the program has been adopted and supported by the NPS SRC, Virginia Department of Historic Resources, and SEARCH. The program is currently being reviewed for adoption by North Carolina, Delaware, Alabama, Texas, and South Carolina.

STAMP combines tagging of cultural resources, citizen science programming, interactive maps for submission feedback, and the utilization of crowd-sourced resource management. STAMP allows the trained public to gather preliminary data during tag deployment and provides QR codes to allow citizen scientists to report the tagged object.

The STAMP program consists of two distinct phases: tagging and recordation. During the tagging phase, trained volunteers participate in documenting unreported shipwreck remains. All materials and information for the tagging phase are stored in STAMP kits. The kit includes tags, stainless steel nails, stainless steel washers, hammer, measuring tapes, photo cards, and a camera. All of these materials are kept in specially marked toolboxes at the MHT offices and NPS visitor service offices to be checked out by trained volunteers or staff.

Unknown wreck in the intertidal zone at Chincoteague National Wildlife Refuge. Photo courtesy USFWS.

STAMP's second execution phase, recordation, allows anyone who comes in contact with a tagged shipwreck timber to participate. The volunteer uses their smartphone to scan the QR code or to enter the uniform resource locator (URL) found on the tag. This action takes the user to the online submission form, which is linked to the STAMP database. This form invites the user to answer a series of questions relating to the tagged timber location and integrity. More important archaeologically, the online form allows the user to upload GPS coordinates and photos. Upon receipt of the user form, the public participant is asked to “turn GPS location on.” This action grants permission for the form to extract the GPS information stored in the user’s phone.

STAMP Wreck Tag

A submission triggers two effects: population of the online database and feedback to the user. The submission is sent to the online database and submission alerts are sent to the project archaeologists. An automatic feedback form is also generated for the citizen scientist participant, thanking them for their submission. The feedback response contains a heat signature map displaying dots that illustrate where the shipwreck timber has previously been reported. The user can select the dots to display previously reported information. The feedback gives the participant a sense of value in contributing to a shared maritime history and urges them to continue participation in the program.

The launch of the program in Maryland occurred on February 5th, 2022. A one-day STAMP training workshop was held for interested volunteers and MHT staff. Topics presented in the workshop included a brief history of STAMP, program purpose, ship timber/wreck identification, timber/site documentation, and proper tag deployment.

As data continue to be collected by STAMP participants, the database capacities will continue to be tested. In coming years, STAMP will hopefully transform into a unified, large-scale, beached shipwreck management program encompassing multiple states and land managing agencies along the Gulf Coast and East Coast of the United States as a primary means to better document, monitor, and manage these delicate and finite resources. Because disarticulated timbers can be travelers via storm, wind, and wave, STAMP has the potential to provide a method for contiguous states and management agencies to share and compare information on their shared maritime heritage.

Coastal regions are dynamic locations that often prove difficult for resource managers to consistently document, monitor, and manage cultural resources when encountered. Beached shipwreck sites are no exception to these managerial challenges and STAMP provides the public with a beneficial way to participate in protecting and learning about these finite resources.

If you’d like to join STAMP as a citizen scientist, fill out MHT’s archaeology volunteer form: https://mht.maryland.gov/archeology_volunteers.shtml

X-radiography in Archaeology: a M1841 "Mississippi" Rifle Case Study

Nichole Doub, Head Conservator,
Maryland Archaeological Conservation Laboratory

As the science of archaeology has progressed, new and innovative technologies and analyses have been applied to provide greater understanding and deeper interpretations of the features and objects recovered in our investigations. One of the oldest technologies applied to the study of artifacts is radiography. Only one year after its discovery by Wilhelm Röntgen, x-radiography was used to investigate a Ptolemaic mummy bundle in 1896, and the advantages in non-destructive testing were realized. For over 100 years, archaeologists have continued to use x-radiography to investigate artifacts.

X-radiography is most often used in the examination of metal artifacts, particularly for those objects that are obscured by concretion or corrosion products. These images can be very useful in the identification of artifacts, but the x-ray data can have multiple applications. Determining the object type can lend itself for a more complete record and interpretation of the context where the object was recovered. It also impacts the long-term preservation of the recovered materials. Curators and conservators assess not only the significance of an object but how it may be used in the future for research or display, and how its physical condition may impact these uses. Long-term care of collections has an associated cost, so collections managers use all of the information available to make the best use of curation and conservation resources. X-ray images can reveal the degree of deterioration and help determine if an artifact needs conservation, can survive treatment without damage, or if the x-ray alone can provide the necessary documentation without additional intervention. If conservation is required, the images can inform conservators how to best proceed in the treatment of that object.

Figure 1. 1841 "Mississippi" Rifle, before conservation treatment with associated copper alloy hardware (trigger guard, butt plate, and hinged patch box lid). Photo courtesy of the Winery at Bull Run.

A Civil War rifle (Figure 1) is currently in the beginning stages of conservation treatment at the Maryland Archaeological Conservation Laboratory (MAC Lab). It is a M1841 Mississippi Rifle used by both Union and Confederate troops, recovered from the site of the 1st Battle of Bull Run in Manassas, VA. Preserved in the wet, dense-packed clay of the creek bed, the wood stock is waterlogged but well preserved and must undergo specialized chemical and drying treatments to prevent its cracking and warping. Before any treatment can begin, certain safety measures must be taken, namely determining whether the firearm remains loaded.

X-radiography is the perfect tool to make that determination. Because a lead projectile is a denser material than the surrounding iron barrel, the lead appears brighter on the x-ray image. The presence of a bullet and a preserved powder charge requires that conservators first drill out the charge to neutralize the hazard. The x-ray image can provide precise details to locate the best area to drill while minimizing damage to the object.

In the case of this rifle, a Minie ball and preserved powder charge were identified in the x-ray images (Figure 2). Using the x-ray image, the diameter of the Minie ball was measured and determined to be .54 caliber. The caliber of the Minie ball can be used to date the rifle as the M1841 was originally produced in a .54 caliber but was later modified to a larger caliber so that it could use the new standard .58 caliber Minie ball rounds. The images also reveal a broken main spring, which may have been the reason this firearm was discarded during the hasty retreat of Union soldiers during the battle. Another interesting find revealed by the x-ray images is the presence of a spare nipple in the patch box located on the stock that would have also held tools for maintenance and repair.

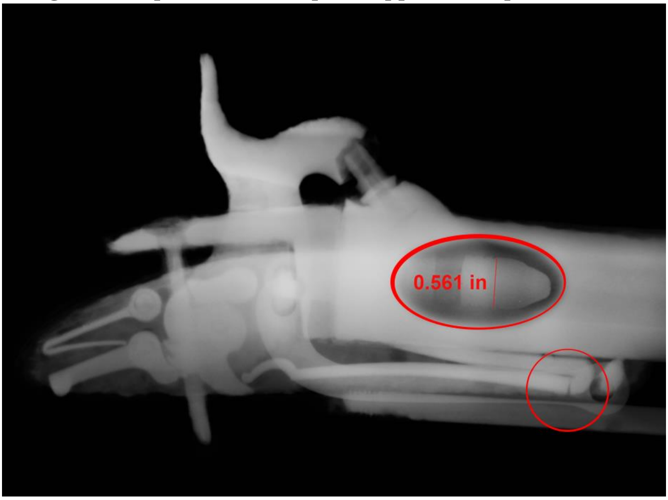


Figure 2. X-radiographs of the rifle lock showing the three groove Minie ball, broken main spring (right), and extra nipple (left).

As conservators move forward with the treatment of this artifact, the x-ray images will provide a guide during the cleaning process to denote where the iron has been replaced with fragile corrosion products reveal surface details.

With the widespread accessibility and affordability of digital X-radiography, archaeologists should continue to employ this technology to document and study artifacts. People who do not have access to an archaeological facility with x-radiography might be surprised how many x-ray technicians in other fields (universities, hospitals, large animal veterinarians, or dentists) may be enthusiastic about archaeology and willing to offer help.

Unexpected Uses of LIDAR Data in Archaeology

Scott Strickland, Deputy Director, Maryland Archaeological Conservation Laboratory

When most people read about LIDAR data in the news, it is about amazing discoveries of road networks or layouts of “lost cities” in remote jungles. In my day-to-day work I use LIDAR in multiple ways – from identifying historic roadways, boundaries, decades old excavation areas, and measuring landscape change over time. All of this is done using free and openly accessible data from State and Federal data repositories.

For the unacquainted, LIDAR stands for **Li**ght **D**etection **A**nd **R**anging – think RADAR or SONAR, but using light. All three methods utilize an emitter and sensor that measures the amount of time wavelengths take to reflect. Unlike RADAR and SONAR, which use different forms of electromagnetic waves, LIDAR uses focused lasers. Laser light has a shorter wavelength and can be targeted, resulting in more detailed data than could be acquired with RADAR.

LIDAR, being so detailed, has unique applications that simply can’t be achieved with RADAR. LIDAR data, in its raw form, consists of a point cloud of millions of individual points that contain horizontal and vertical position information. These point clouds can be used to interpolate Digital Elevation Models (DEMs). Since LIDAR utilizes laser light, it can thread the needle between leaves in tree canopies, allowing you to make a detailed model of a forest floor.

A DEM can further be manipulated to create Hillshade models, where changes in elevation can be exaggerated and/or visualized using shadows. Hillshade models make the subtle changes in elevation pop. Downloadable LIDAR-derived DEM Hillshade models are accurate enough that you can pick up plow lines in open fields quite easily. Doing this you begin to look for patterns amidst the natural topography or agricultural noise. This is where the fun begins.

When you go to a park, you may see signs like “Leave No Trace,” but as humans, in a general sense, that is an impossible thing to do. We change our environment in both subtle and not so subtle ways. Not so subtle ways could be the construction of a building, which likely would involve the displacement of soil in noticeable ways. The repeated act of walking along a path creates depressions in the ground that can be picked up from LIDAR.

Jefferson Patterson Park and Museum has had numerous archaeological investigations since the 1980s. The excavations consist of a patchwork of arbitrary site grids, which would be difficult to relocate by attempting to rediscover decades-old datum points left in the ground. LIDAR can assist in mapping the locations of these excavations since the process of digging and backfilling excavation units leaves the ground surface in an altered condition. As seen in Figure 1, the outlines of individual unit squares from the King’s Reach Quarter site are clearly visible. To a casual observer, this is not readily evident when looking in the field.

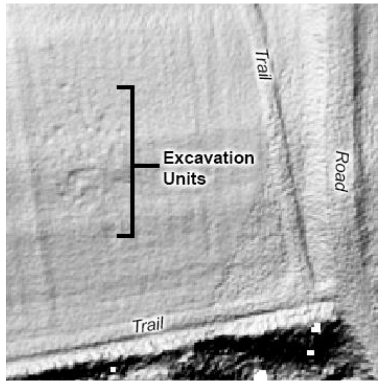


Figure 1. LIDAR Map of Excavation Units at the King's Reach Quarter Site

Additional features picked up from LIDAR are paths and boundary ditches. These man-made features are among the easiest to spot from a Hillshade model. Remnants of a land bridge over a marshy branch of St. Leonard's Creek can be seen in Figure 2. Like the backfilled units at the King's Reach Quarter site, this feature could easily be missed in the field. This crossing may date to the late 18th-century where portions of a road extending from it are referenced in the 1770s as part of a boundary dispute. The total length of this road was also depicted on an 1848 US Coast survey map, connecting southern portions of Jefferson Patterson Park to present-day Mackall Road.

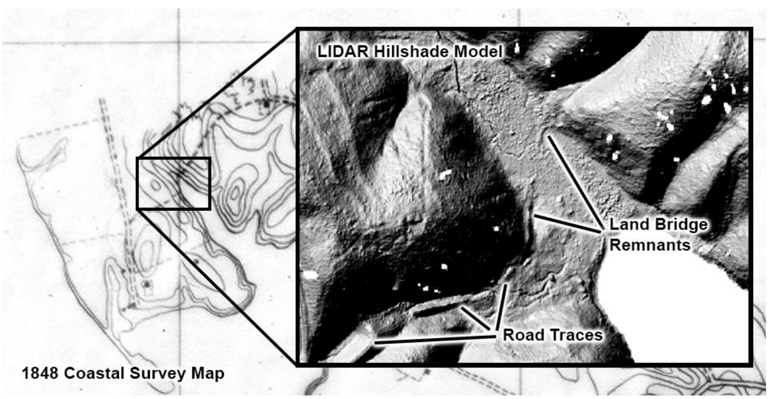


Figure 2. LIDAR Hillshade model and 1848 Coastal Survey Map of St. Leonard's Creek

Modern walking paths/hiking trails created without mechanical grading can also be seen in a similar fashion. Persistent walking along marked paths compacts soils, causing subtle but measurable changes in topography. Utilizing LIDAR data and high-resolution aerial orthography, the entire trail system within Jefferson Patterson Park was digitized without the need of a physically survey.

LIDAR is not only a tool for discovery, but it is an important tool in land management and planning. While not as glamorous as the headlines you may read, it is still nonetheless a unique tool for interpreting the landscape.

X-ray Fluorescence in Archaeology

Stephanie Whitehead, Conservator, Historic St. Mary's City

A common misconception is that archaeological work ends in the field. However, once artifacts have been excavated, archaeologists continue their research in the lab. Artifacts are cleaned, catalogued, analyzed, and curated. When an artifact is particularly difficult to identify, we often will breakdown the information by trying to determine what material an object is made from, if it has an identifiable shape, or what else may have been found with the artifact that might provide contextual clues. Modern technology can also play a key role in helping archaeologists understand their finds.

One piece of technology that can be used to identify material types is x-ray fluorescence (XRF). XRF spectrometry is a non-destructive technology that analyzes the elemental composition of an object using fluorescent x-rays. Each natural element emits a unique fluorescent photon when the x-rays collide with the atomic structure. This fluorescent radiation has a wavelength that is measured by the machine. The XRF device calculates how many times it emits pulses of x-rays while simultaneously measuring the resulting wavelengths that are produced from the object being examined. The XRF analyzer produces a graph of the measured wavelengths. Since each element has a specific fluorescence that can be measured at a specific wavelength, XRF spectrometry can be used to determine the elements present in the artifact being analyzed. The higher the spike at a particular wavelength on the graph, the more of that element is present in the artifact. XRF instruments can also produce a chart of each element detected and the percentage of its composition within the artifact being scanned. Some XRF spectrometers even identify the carat for objects with gold present.

This technology is extremely useful for analyzing the geochemical composition of metals, glass, ceramics, and other inorganic materials. Museums use XRF spectrometry for a variety of purposes such as determining whether or not an object has been treated with arsenic in the past, whether a glass object contains uranium, or to differentiate the composition of a metal alloy (i.e. brass vs. bronze). XRF can be useful in determining where a ceramic was made based on its elemental composition compared to examples of clays from various regions. Knowing the elemental composition of an artifact can help archaeologists understand the materials that were available at the time the artifact was made, understand how the crafting processes affected the elemental structure of artifacts, and locate origin sites or link trade routes to archaeological finds.

XRF spectrometry is particularly helpful in artifact conservation. Prior to treating objects it is important to know what the material composition is so that an appropriate treatment plan can be put in place. One such object from Historic St. St. Mary's City (HSMC) is a button found at a colonial site in the Town Center. Prior to conservation treatment, the artifact was x-rayed and photographed (Figures 1 and 2). The x-ray was particularly useful, as it brought out lettering around the edge of the button. The button was manufactured by *Scovills & Co* in Waterbury, Connecticut and likely dates to circa 1840-1850. It was speculated that the button might have a gold plating, and it was selected for XRF analysis to help determine its' elemental composition. Figure 3 depicts a graph of the XRF results, showing that the button is comprised of a copper alloy with a small amount of gold plating. This data provides important diagnostic information that can inform treatment options, artifact analysis, and the curation of the object.

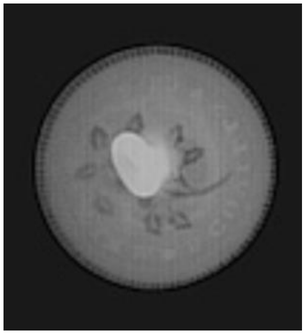


Figure 1: X-ray image of a 19th-century button from HSMC's Town Center Site, showing details including the button's back shank, decorative border, filigree, and letters.

Figure 2: Left – Button Front with floral design and gold plating; Right – Button Back with makers mark "*Scovills & Co Waterbury*".

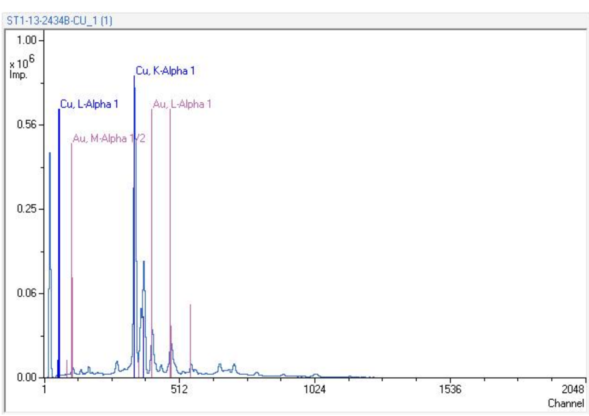


Figure 3: XRF chart depicting the wavelengths for copper and gold. These frequencies have been highlighted. Copper wavelengths are higher than the gold spikes.

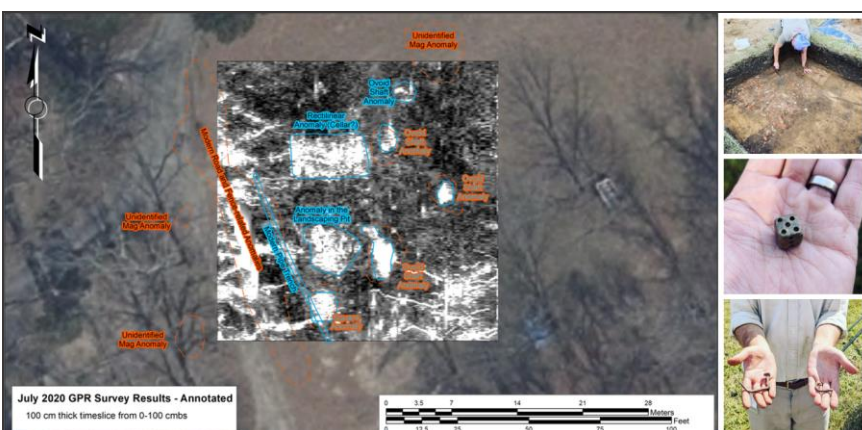
Field Session Teaser – Ground Truthing Barwick's Ordinary

Matthew D. McKnight, Chief Archaeologist, Maryland Historical Trust

It's fitting that this year's Field Session teaser would be in a booklet that highlights innovative technologies in Maryland archaeology. This year's Tyler Bastian Field Session will be held at a site that went unrecorded in the Maryland Inventory of Historic Properties until 2020 when such technologies made it possible for the first time to see beneath the surface of a small field in Caroline County and visualize a substantially intact colonial tavern hidden there.

Working on and off over the course of two summers (2019 and 2020) MHT archaeologists, interns, and occasional outside volunteers carried out an extensive remote sensing survey on a residential lot where a property owner encountered colonial artifacts while making landscape changes. While magnetic susceptibility and fluxgate gradiometry suggested prior human modification and subsurface deposits filled with metals, the "home run" didn't come until we applied ground penetrating radar. GPR revealed the presence of a square privy, a large rectangular cellar, and other structural features suggestive of a substantial architectural complex. Deed research and archival digging revealed that the complex was likely the home and tavern of James Barwick: caretaker at a small settlement that played an important role in Eastern Shore history as the first seat of Caroline County government from 1774 to 1790.

The GPR data (as good as it was) was still insufficient to confirm our suspicions about this field. In the fall of 2020, with assistance from ASM volunteers, locals, and Professor Julie Markin of Washington College, we opened up a handful of small units at Barwick's. The results have been incredible: a well-preserved, artifact rich, mid-late 18th century site is present. A college field school and several public archaeology days later, there is still more to do at this important site! Come join us May 20-30, 2022 for the first Field Session on Maryland's Eastern Shore in 20 years. Watch the ASM website for details.



Archeology Volunteer Programs

Following are examples of programs in Maryland that offer opportunities to get involved in archeology. Please note that COVID-19 restrictions might apply. For more information about these and other similar programs visit *www.marylandarcheology.org*.

Jefferson Patterson Park & Museum · Public Archaeology Program

Thursdays, Fridays, and Saturdays, May 5-June 4, 2022 · 9 am to 3 pm

Volunteers have the opportunity to work alongside archaeologists to excavate an actual site. Spend mornings excavating, sifting soil for artifacts and mapping remains of a 17th-century domestic structure on the park grounds, and afternoons either at the archaeological site or in the Maryland Archaeological Conservation Lab, doing hands-on archaeological activities, such as washing, sorting and labeling artifacts, photographing archaeological artifacts, touring the lab and more.

Public Archaeology is free and open to the public. Children under 15 must be accompanied by an adult. Register by visiting this webpage:
https://jefpat.maryland.gov/Pages/mac-lab/public-archaeology.aspx

---

Anne Arundel County's Archaeology Program

The Anne Arundel County Archaeology Program works with the non-profit The Lost Towns Project to promote archeological research and public education programs. We seek dedicated volunteers and interns, no experience required, to help with all aspects of field and lab work. Join us to discover history at a variety of dig sites across the County or to process artifacts at our lab in Edgewater. To learn more, please email *volunteers@losttownsproject.org*.

Anne Arundel County's Archaeology Laboratory
839 Londontown Road
Edgewater, Maryland 21037

The Maryland-National Capital Park and Planning Commission
Department of Parks and Recreation, Prince George's County

Experience Prince George's County history first-hand through volunteering with the Department of Parks and Recreation Archaeology Office. Individuals, 14 years and up, can learn how archeologists investigate the past and assist them with excavations and lab work. Volunteer registration is required through *www.pgparks.com*. For information call the Archaeology Office at 301-627-1286 or email *archaeology@pgparks.com*.

Archaeology Office
Natural and Historical Resources Division
8204 McClure Road
Upper Marlboro, Maryland 20772

Certificate and Training Program for Archeological Technicians

The Archeological Society of Maryland, Inc. (ASM), the Maryland Historical Trust, and the Council for Maryland Archeology offer a Certificate and Training Program for Archeological Technicians (CAT Program), providing an opportunity to be recognized for formal and extended training in archeology without participation in a degree program. Certificate candidates must be members of the ASM, and work under the supervision of a mentor. A series of required readings and workshops is coupled with practical experience in archeological research. For information about the CAT Program, and application forms, visit the ASM web site at:
www.marylandarcheology.org/CATprogram.html.

The Maryland-National Capital Park and Planning Commission
Montgomery Parks Department, Park Planning and Stewardship

NOTICE*: The Archaeology Volunteer Program has been suspended due to COVID. If you contact us, we will notify you when the program reopens.*

Join the Montgomery Parks' archeology program in uncovering Montgomery County's past through the investigation and analysis of sites that cover the entire 13,000 year history of the County. There are opportunities for fieldwork and labwork. Volunteers are welcome on Wednesdays. For Volunteer Application contact Heather Bouslog by phone at 301.563.7530, by email at *Heather.bouslog@montgomeryparks.org*, or visit *www.ParksArchaeology.org*

Archaeology Program
Needwood Mansion
6700 Needwood Road
Derwood, Maryland 20855

Maryland Historical Trust
Archaeology Programs

The Maryland Historical Trust is committed to involving the public in archaeology. The Maritime Archaeology Program provides opportunities for volunteers in field activities. Participants need not be divers. Terrestrial archaeological programs include an eleven-day annual Field Session, co-hosted with the Archeological Society of Maryland, that combines education with research. An Open Lab is held on most Tuesdays during the year teaching proper archaeological lab techniques. Internships are also offered. To learn more please fill out the MHT Archaeology Volunteer form on the website. https://mht.maryland.gov/archeology_volunteers.shtml

Maryland Historical Trust
100 Community Place
Crownsville, MD 21032
www.mht.maryland.gov/

Historic St. Mary's City: A Museum of History and Archaeology

Historic St. Mary's City (HSMC) is the site of the fourth permanent English settlement in North America, Maryland's first capital, and the birthplace of religious toleration in America. The Department of Research & Collections at HSMC, with St. Mary's College of Maryland, offers a Field School in Historical Archaeology from May 31 through August 5, 2022. While in the field, staff and students offer tours of the excavations to visitors. Visitors to the museum are also encouraged to explore the St. John's Site Museum, which provides insights into ways researchers use historical and archaeological evidence. Contact HSMC 240-895-4990, 800-SMC-1634, or *Info@HSMCdigshistory.org*. For a list of events visit: *www.hsmcdigshistory.org/events.html*.

Historic St. Mary's City
Museum of History and Archaeology
P.O. Box 39
St. Mary's City, MD 20686

Archeological Society of Maryland
Field and Laboratory Volunteer Opportunities Statewide

One of the Archeological Society of Maryland's main goals is to involve the public in field and lab events throughout the year and across the State. To meet this goal, ASM hosts a Spring Symposium and an annual Fall meeting, and co-hosts with the Maryland Historical Trust a Saturday Workshop and an annual field/excavation session. ASM's local chapters also conduct meetings and provide opportunities for members and the general public to participate in field and laboratory activities. Visit our website at *www.marylandarcheology.org* to learn about upcoming events, view the latest edition of our monthly newsletter (ASM Ink), and link to our chapters' websites.

Howard County Department of Recreation and Parks
Archaeology Program

Come explore Howard County's hidden history through archaeological investigation! The Howard County Archaeology Program welcomes volunteers of all ages to participate in field and lab opportunities during our 2022 public season! The Howard County Archaeology Program accepts Volunteers Wednesdays, Fridays, and the 3rd Saturday of each month. To volunteer, please contact Kelly Palich at 410-313-0423 or *kpalich@howardcountymd.gov*. Volunteer opportunities for fieldwork, lab work, photography, illustration, research and more!

At **Historic St. Mary's City**, a museum of history and archaeology at the site of Maryland's first capital, learn the stories of how 17th-century society was built through the interactions of Southern Maryland Indians, European colonists, and people of African descent. Wander the reconstructed Yaocomico hamlet, explore a colonial tavern, and step aboard a tall ship. At the St. John's Site Museum, gain insight into the ways historians and archaeologists reconstruct the past, learn how slavery was introduced into Maryland society, and discover the 17th-century origins of religious freedom. Take an easy drive from the metro areas and discover one of the nation's most beautiful historic places in Tidewater Southern Maryland.

240-895-4990 *www.hsmcdigshistory.org/* 800-SMC-1634
Info@HSMCdigshistory.org

Archaeology Office, The Maryland-National Capital Park and Planning Commission (M-NCPPC), Department of Parks and Recreation, Prince George's County. Since 1988, the Archaeology Office has been exploring the diversity of Prince George's County's archeological resources. Through excavations, exhibits, public outreach and cultural resource management, the Archaeology Office supports the M-NCPPC's numerous museums and historic sites. Hands-on volunteer programs and student internships provide opportunities for citizens and students to discover the past by participating in excavations and artifact processing and analysis. For information call the Archaeology Office at 301-627-1286 or email *archaeology@pgparks.com*.

The **Archeological Society of Maryland**, Inc. (ASM) is a 501(c)3 not-for-profit organization dedicated to the investigation and conservation of Maryland's archeological resources. ASM members are professional, academic, and avocational archeologists. The Society sponsors publications, research, and site surveys across the State as well as hosting a Spring Symposium and a Fall general meeting and co-hosting with the Maryland Historical Trust a Saturday Workshop and an annual field/excavation session where members and the public work along side professional archeologists. In addition, ASM has eight chapters representing most of Maryland's geographic regions, each with its own local meetings and activities. All ASM and chapter activities are open to the public. Visit us at *www.marylandarcheology.org* to learn more about our activities.

Maryland Department of Transportation is committed to sustaining the balance between protecting our cultural resources and maintaining our transportation system.

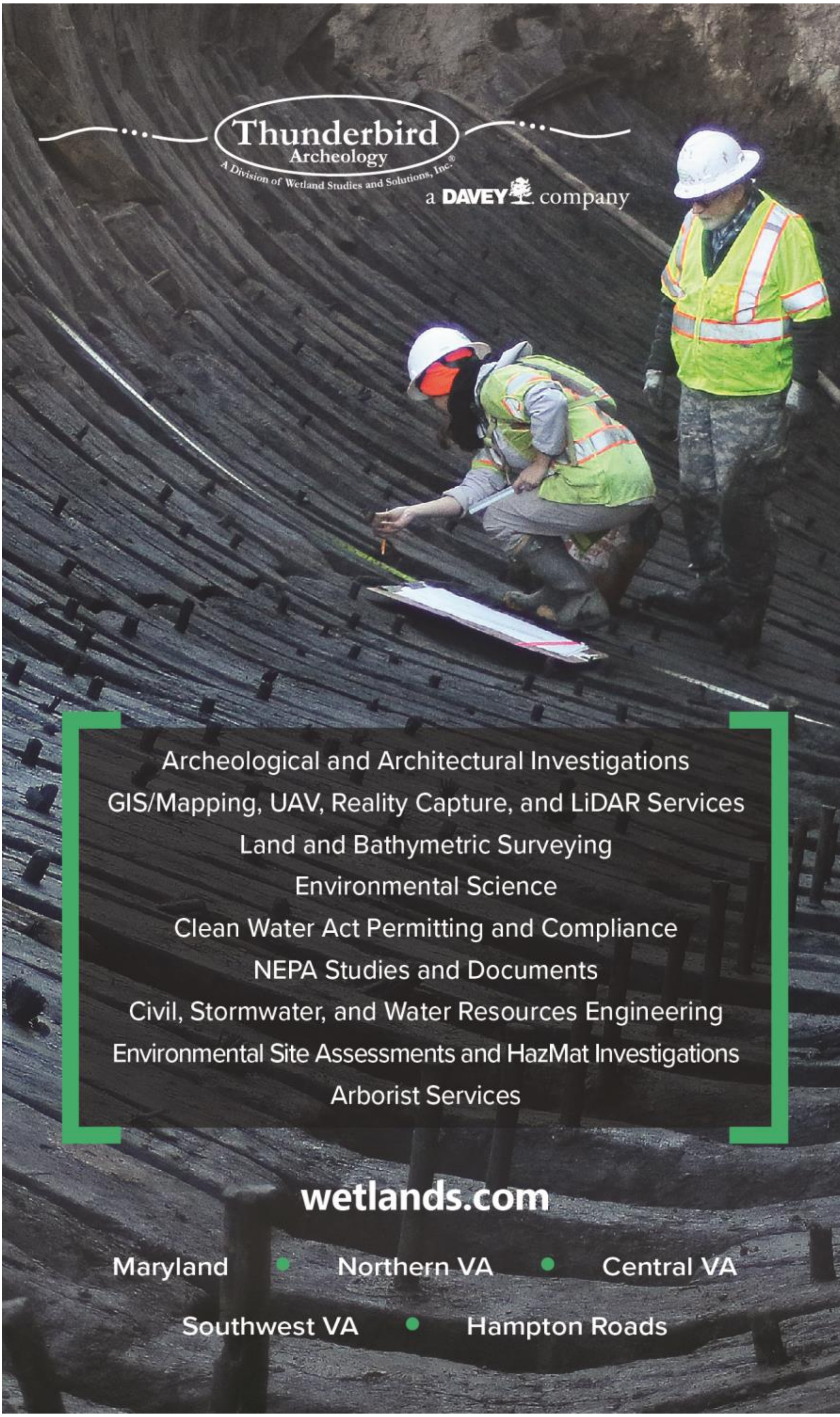
For information, contact Dr. Julie M. Schablitsky, Chief Archaeologist/ Assistant Division Chief, Cultural Resources Section, at *jschablitsky@mdot.maryland.gov*.

Founded in 1976, the **Council for Maryland Archeology** is an organization of professional archeologists whose mission is to foster public awareness and support for the preservation of archeological resources in the state. Our membership is composed of professional archeologists either working or conducting research in Maryland. We are proud to sponsor Maryland Archeology Month and encourage one and all to visit our website *https://cfma-md.com/*, attend an event, and join us in exploring Maryland's past.

The **Maryland Historical Trust** (Trust) is a state agency dedicated to preserving and interpreting the legacy of Maryland's past. Through research, conservation, and education, the Trust assists the people of Maryland in understanding and preserving their historical and cultural heritage. The Trust is an agency of the Maryland Department of Planning and serves as Maryland's State Historic Preservation Office (SHPO). Visit us at *www.mht.maryland.gov*.

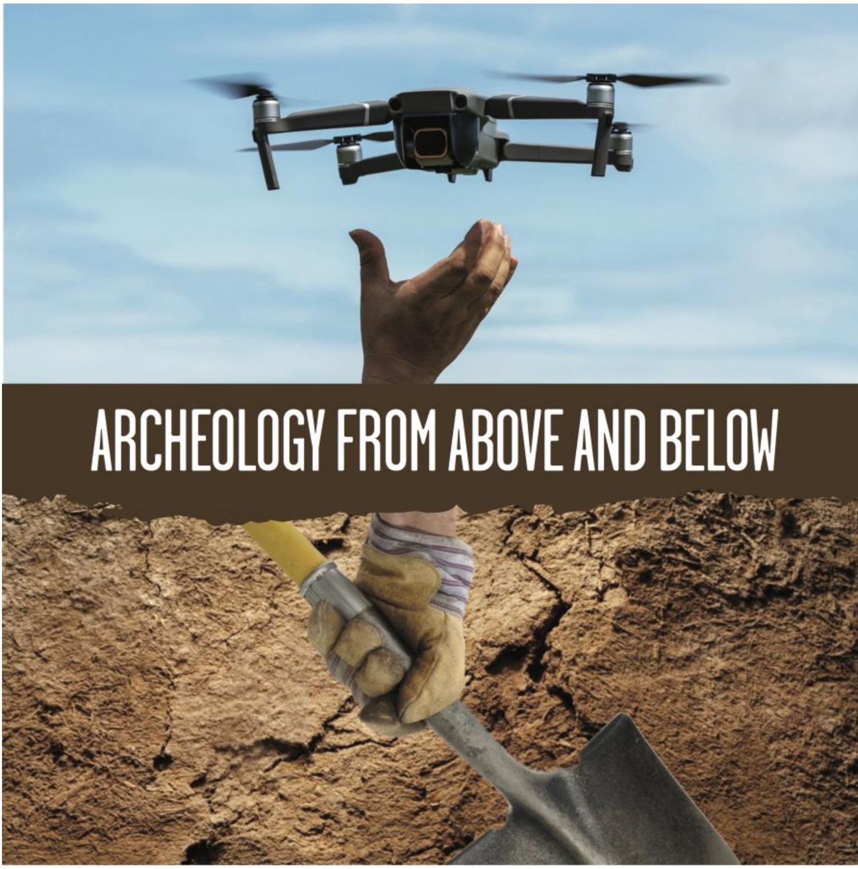
The Maryland Archaeological Conservation Laboratory (MAC Lab) is the Trust's repository for archaeological collections. Located at Jefferson Patterson Park and Museum (JPPM), the State Museum of Archaeology, the MAC Lab opened in 1998 as a state-of-the-art archaeological research, conservation, and curation facility. The MAC Lab serves as a clearinghouse for archaeological collections recovered from land-based and underwater projects conducted throughout the state. It is the MAC Lab's mission to make these collections available for research, education, and exhibit. The website for the MAC Lab/JPPM is *https://jefpat.maryland.gov*.

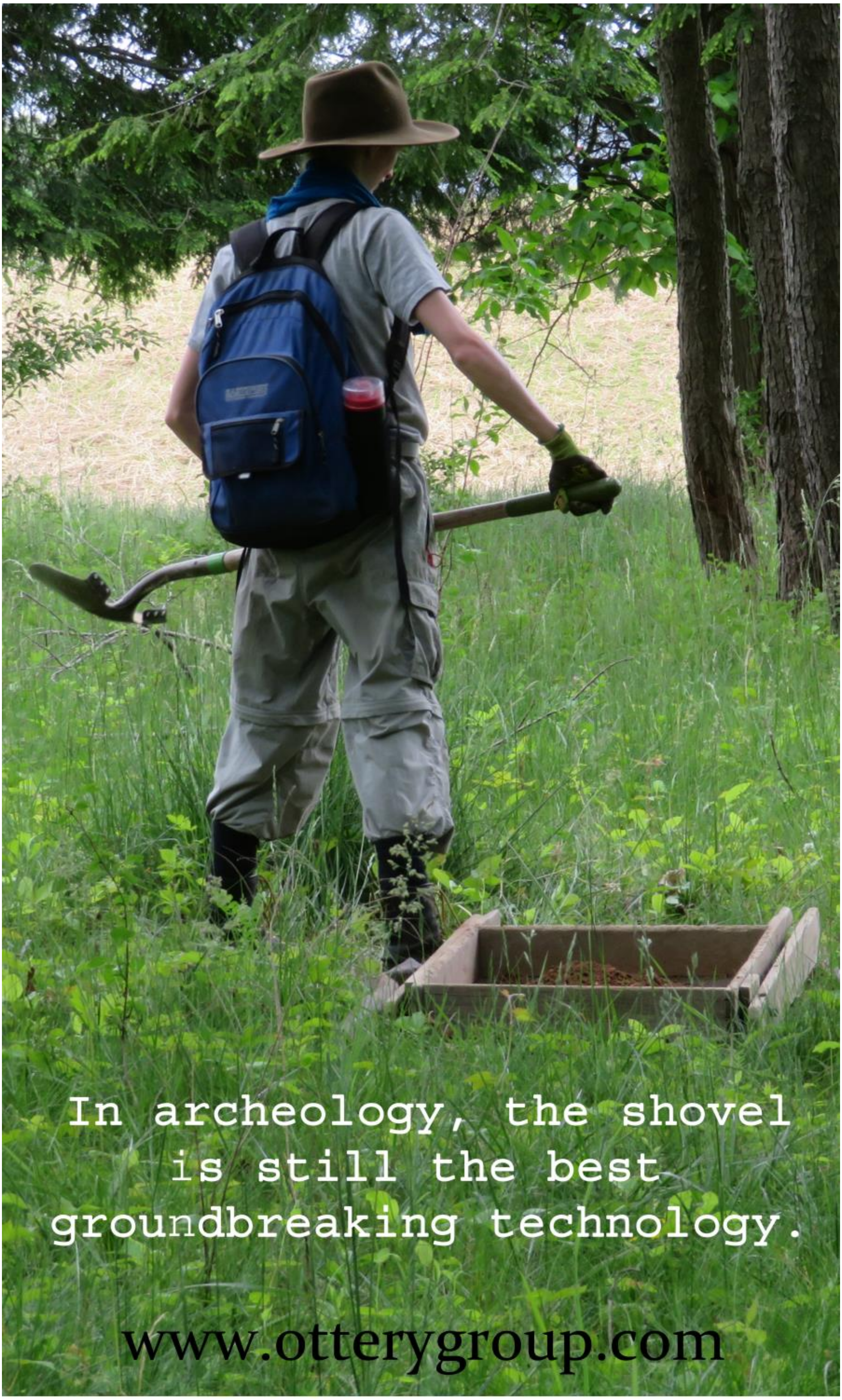

· National Historic Preservation Act Compliance
· Phase I-III Terrestrial and Maritime Archaeology
· Historic Research
· Architectural History
· HABS/HAER/HALS Documentation
· Cemetery Studies
· National Register Nominations
· Public Outreach and Media Services
Proud Sponsor of
Maryland Archeology Month
SEARCH
Varna Boyd, MA, RPA
240-412-6579
varna@searchinc.com

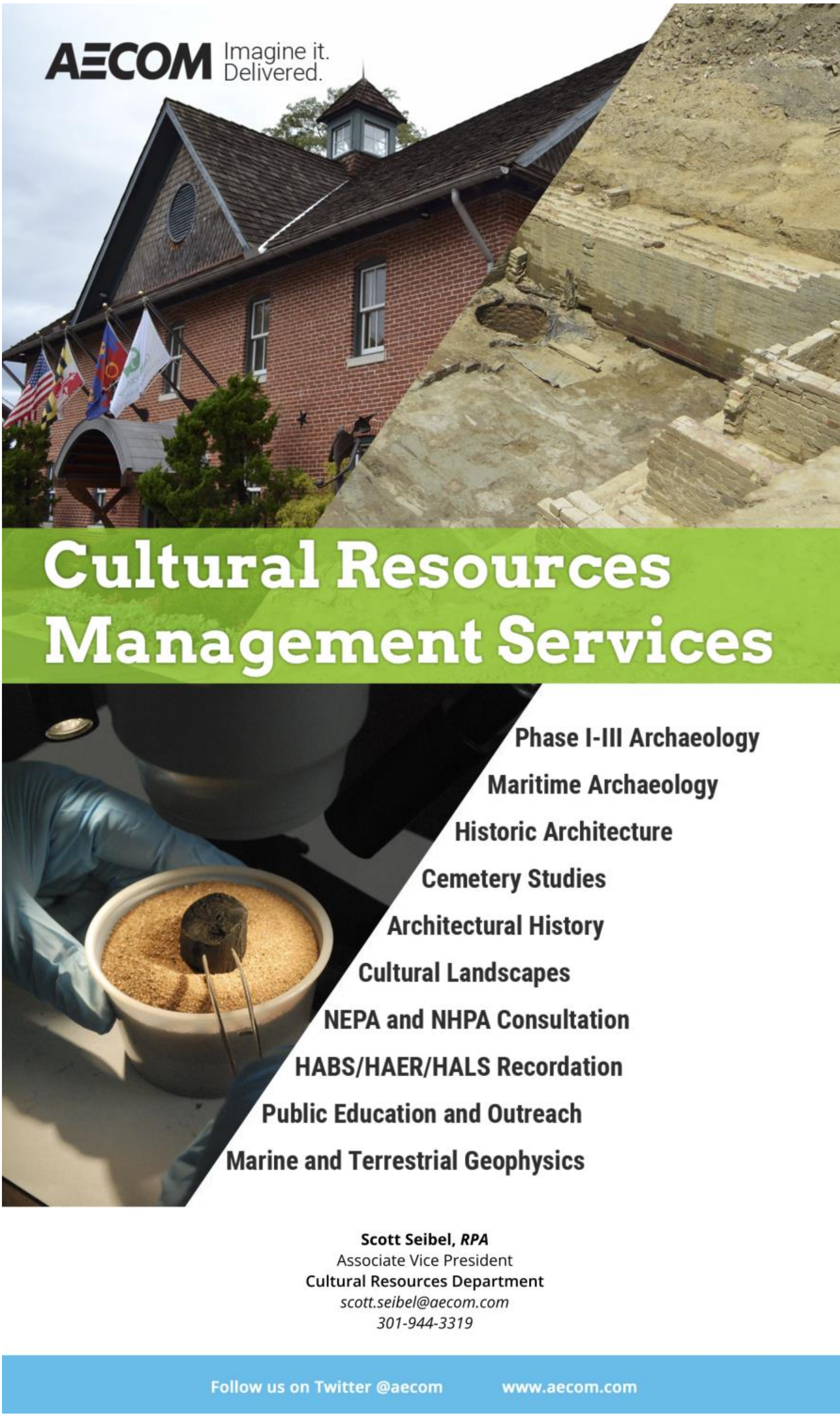


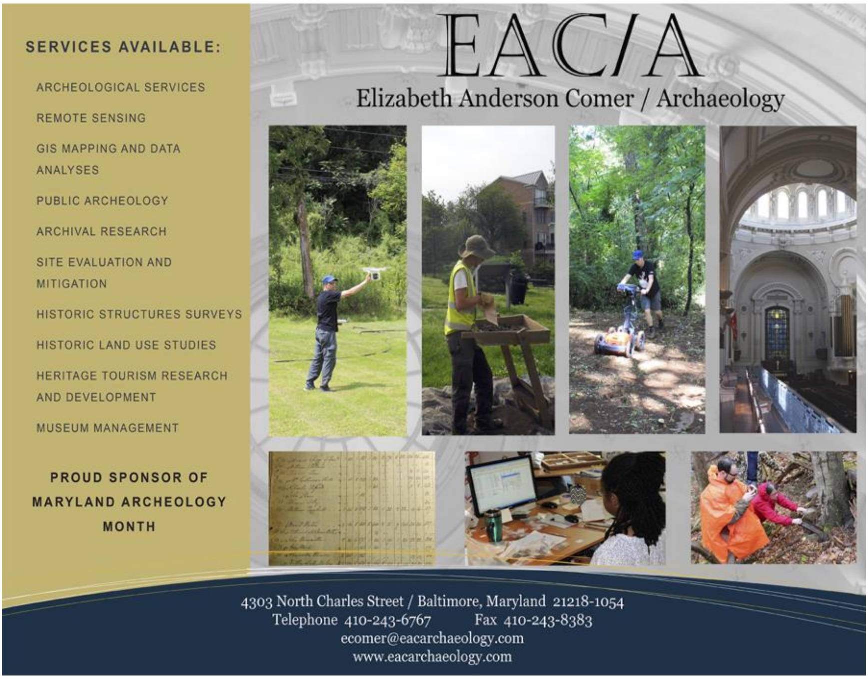

Gray & Pape, Inc. is Pleased to Support
Maryland Archaeology Month 2022
GRAY & PAPE
HERITAGE MANAGEMENT
35th Anniversary


MARSTEL DAY
innovative solutions through science, planning, and engineering
An award-winnning consulting firm offering the entire range of Cultural Resources capabilities.
SELECTED AREAS OF EXPERTISE
NHPA Section 106 & 110 capabilities
Archaeology services, including Phase I, II, III support
Architectural History services, building assessments, inventories, surveys
Determinations of Eligibility
Artifact Processing, Analysis & Curation in accordance with 36 CFR 79
Integrated Cultural Resource Management Plans
SHPO/THPO and Native American Consultation
NEPA documents and process
Land Use Histories
Historic Landscape Surveys
Paula Bienenfeld
(540) 395-7168
pbienenfeld@marstel-day.com
www.marstel-day.com
Marstel-Day is a proud supporter of Maryland Archaeology Month


ARCHEOLOGY FROM ABOVE AND BELOW


In archeology, the shovel
is still the best
groundbreaking technology.
www.otterygroup.com


AECOM Imagine it. Delivered.
Cultural Resources Management Services
Phase I-III Archaeology
Maritime Archaeology
Historic Architecture
Cemetery Studies
Architectural History
Cultural Landscapes
NEPA and NHPA Consultation
HABS/HAER/HALS Recordation
Public Education and Outreach
Marine and Terrestrial Geophysics
Scott Seibel, RPA
Associate Vice President
Cultural Resources Department
scott.seibel@aecom.com
301-944-3319
Follow us on Twitter @aecom
www.aecom.com


SERVICES AVAILABLE:
ARCHEOLOGICAL SERVICES
REMOTE SENSING
GIS MAPPING AND DATA ANALYSES
PUBLIC ARCHEOLOGY
ARCHIVAL RESEARCH
SITE EVALUATION AND MITIGATION
HISTORIC STRUCTURES SURVEYS
HISTORIC LAND USE STUDIES
HERITAGE TOURISM RESEARCH AND DEVELOPMENT
MUSEUM MANAGEMENT
PROUD SPONSOR OF MARYLAND ARCHEOLOGY MONTH
EAC/A
Elizabeth Anderson Comer / Archaeology
4303 North Charles Street / Baltimore, Maryland 21218-1054
Telephone 410-243-6767 Fax 410-243-8383
ecomer@eacarchaeology.com
www.eacarchaeology.com


Sponsors of Maryland Archaeology Month
RK&K
Responsive People | Creative Solutions
Phase I - III Archaeological Investigations
Section 106, 110, and 4(f) Analyses
Architectural Surveys
Public Outreach Activities
Cultural Resource Management
NEPA Compliance
HABS/HAER Documentation
Historic Preservation Plans
700 East Pratt Street
Baltimore, Maryland
800.787.3755
rkk.com

Maryland Archeology Month Institutional Sponsors

Maryland Historical Trust
Archeological Society of Maryland, Inc.
Council for Maryland Archeology
Maryland Department of Transportation
M-NCPPC Prince George's County Archaeology Program
Historic St. Mary's City
Jefferson Patterson Park and Museum – Maryland Archaeological Conservation Lab

Maryland Archeology Month 2022 Sponsors

A.D. Marble & Company
AECOM Cultural Resource Group
Cultural Heritage Research Services, Inc.
Dovetail Cultural Resource Group, Inc.
McCormick Taylor, Inc.
Richard Grubb & Associates, Inc.
SEARCH, Inc.
Skelly and Loy, Inc.
The Ottery Group, Inc.
Thunderbird Archeology/Wetland Studies and Solutions, Inc.
TRC Environmental Corporation.

Additional support for Maryland Archeology Month 2022 was provided by

Applied Archaeology and History Associates, Inc.
Dr. Troy Townsend's Research Group, St. Mary's College of Maryland
Elizabeth Anderson Comer/Archaeology, Inc.
GAI Consultants
Gray & Pape, Inc.
Heberling Associates, Inc.
Navarro & Wright
Marstel Day
Rummel, Klepper & Kahl, LLP

The Maryland Archeology Month Committee gratefully acknowledges the creative work of Kathy Addario of the Natural and Historical Resources Division of M-NCPPC, Prince George's County Parks, in imagining, designing, and creating this year's poster.

MARYLAND DEPARTMENT OF TRANSPORTATION

This booklet was printed by the Maryland Department of Transportation.