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*Fort Hollingsworth, erected in April 1813 by the citizens of Cecil County, Maryland, was a small breastwork that protected the upper reaches of the Chesapeake Bay and the "backdoor" to Philadelphia during the War of 1812. Fort Hollingsworth saw brief action in 1814. After the war, it was demolished and the land returned to farming. Geophysical surveying, exploratory soil borings, detailed topographic mapping, and focused excavation conducted by the Archeological Society of Maryland convincingly and economically identified the footprint of Fort Hollingsworth. Methodological considerations are here coupled with a discussion of vernacular fortifications and the implications that unconventional fortifications have for their archaeological discovery and recordation.*

*Le fort Hollingsworth, érigé par les habitants du comté de Cecil, Maryland, en avril 1813, était un petit parapet qui protégeait la partie supérieure de la baie de Chesapeake, ainsi que la « porte arrière » vers Philadelphie au cours de la guerre de 1812. Le fort Hollingworth n'a connu qu'un bref affrontement en 1814. Après la guerre, le fort a été démoli et la terre est redevenue agricole. Des relevés géophysiques, des forages exploratoires, la réalisation d'une cartographie topographique détaillée et des fouilles ciblées menées par la Archaeological Society of Maryland ont permis d'établir les limites du fort Hollingsworth, de façon convaincante et à peu de frais. Des réflexions méthodologiques sont combinées à une discussion sur les fortifications vernaculaires ainsi que sur les implications que les fortifications non conventionnelles ont sur leur découverte et leur enregistrement.*

## Introduction

American political discourse between 1787 and 1812 wrestled with the question of divided sovereignty. Under what conditions could and should the national government exercise power? Partisans in the Federal and Republican parties battled one another on issues of a standing army and substantial navy, and the taxing powers necessary to fund them. Contracts for five frigates, issued by the Federalist government of President John Adams, were canceled and the vessels mothballed by the successor Republican government of President Thomas Jefferson. In 1812, the standing army consisted of 3,000 soldiers and 172 officers. West Point Military Academy was 10 years old, and the naval academy would not be established for another 36 years. A motley mix of U.S. Navy and private vessels intercepted enemy military and merchant vessels from the Great Lakes to the South Pacific. A negligible force of gunboats and, eventually, armed barges, constituting the United States Flotilla Service (1813–1815), attempted to protect the Chesapeake and Delaware bays and the Potomac River. Shoreline defensive works were few and ill-equipped to contend with the world's most powerful navy. The U.S. national government began the war in 1812 largely unprepared, and, as a result, defense fell in part to the individual states and to ad hoc groups of concerned citizens volunteering cash, labor, and military service to protect themselves and their property from British attack. In some instances, at least—and the construction and garrisoning of Fort Hollingsworth in Cecil County, Maryland (FIG. 1), is one of them—unschooled understandings of military sciences had to suffice where the situation called for state-of-the-art military engineering and tactics.

Despite a small, poorly trained, incohesive, and ill-armed defensive force, the war-hawk Congress, elected during the midterm election of 1810, presented President James Madison with a bill for the declaration of war with Great Britain that he signed on 18 June 1812. The story of the Upper Chesapeake Bay forts, in large part, is the story of a nation unprepared for war and the defensive measures taken by a citizenry untrained and largely inexperienced in the practice of war. Practiced in violence, yes; but not in then-current military sciences. State militias suppressed riots and ill-conceived

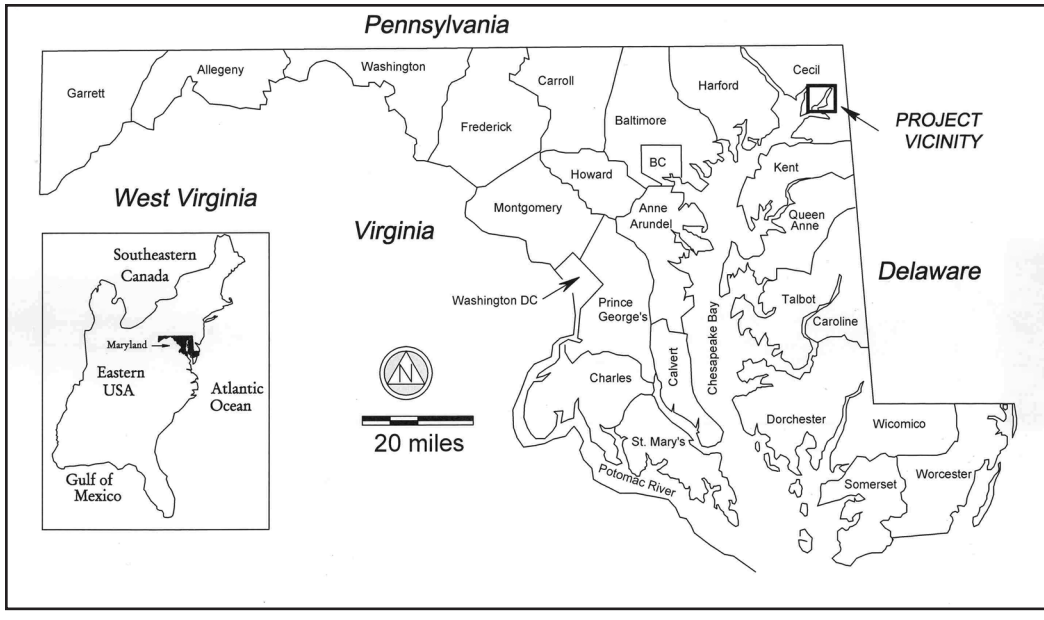


Figure 1. General location map depicts the study area relative to the region and to eastern North America. (Map by Evan Mydlowski, 2015.)

rebellions and fought intermittently with Native American groups from the Northwest Territory to Florida; but apart from some aged veterans of the Revolution—concluded some 30 years earlier—the militas lacked training and experience. The navy was a little better off, although small. The new nation could draw on a large body of experienced sailors, and American seamen and marines performed well against the Barbary States in the first decade of the 19th century.

The forts of the Upper Chesapeake Bay, in contrast to the famous star fort of Baltimore Harbor, were designed by men with little or no training and experience in military engineering or tactics. We dub their efforts at fort building "vernacular," and explore what their inexperience might have meant for making war, and the archaeological challenges it poses for finding and investigating their defensive earthworks. Background on the war in the Chesapeake Bay provides the context for building Forts Hollingsworth, Frederick, and Defiance, all on the Elk River in Cecil County, Maryland. Available archival information on the construction, use, and abandonment of Fort Hollingsworth follows. We then recount the means by which the Archeological Society of Maryland documented Fort Hollingsworth and the implications of those methods for identifying and exploring these ephemeral structures.

## War in the Chesapeake Bay, 1812–1815

The British responded to the U.S. Congress's declaration of war with a blockade in the Chesapeake region. At relatively small expense and minimal distraction from the main theater of war with France, the admiralty bottled up American commerce and hindered Baltimore privateers and American warships from preying on British shipping. Royal Marines raided farms, plantations, wharves, and warehouses, while avoiding protracted engagements and making no effort to hold positions once taken. As Lord Bathurst wrote to Colonel Sir Thomas Beckwith on 20 March 1813

> It having been judged expedient to effect a diversion of the Coasts of the United States of America, in favor of Upper and Lower Canada, which the American Government have declared it to be their intention to wrest from His Majesty in the course of the ensuing Campaign, Sir J. B. Warren will receive instructions to direct a Squadron to proceed with the troops named in the Margin [of this letter], towards the places

> on the Coast, where it may appear to him most advisable that a descent should be made. The number and description of the Force placed under your Command, as well as the object of the Expedition itself, will point out to you that you are not to look to permanent possession of any place, but to the rëembarking of the Force as soon as the immediate object of each particular attack shall have been accomplished.
>
> As the object of the Expedition is to harass the Enemy by different attacks, you will avoid the risk of general action, unless it should become necessary to secure your retreat. (Dudley 1992: 325)

American naval successes in one-on-one engagements and troop incursions into Upper Canada angered the British. Raids on public facilities in the summer of 1812 rapidly escalated into unprovoked attacks on private property. Royal Marines conducted lightning-strike sorties against towns, plantations, and wharves, taking produce, personal possessions, and slaves, and burning that which could not be quickly loaded onboard.

The anger is palpable six weeks later in Vice Admiral Cochrane's 28 April 1814 letter to Rear Admiral Cockburn:

> You are at perfect liberty as soon as you can muster a Sufficient force, to act with the utmost Hostility against the Shores of the United States—Their Government authorizes & directs a most destructive War to be carried against our Commerce & we have no means of retaliating but on shore, where they must feel in their Property, what our Merchants do in having their Ships destroyed at Sea; & taught to know that they are at the mercy of an invading foe. This is now the more necessary in order to draw off their attention from Canada, where I am told they are sending their whole military force—Their Sea Port Towns laid in Ashes & the Country wasted will be some sort of retaliation for their Savage conduct in Canada; where they have destroyed our Towns, in the most inclement seasons of the Year; it is therefore but just, that Retaliation shall be made near to the Seat of their Government from whence those Orders emanated, you may depend upon my most cordial Support in whatever you may undertake against the Enemy. (Crawford 2002: 51–52)

The rapidity and seemingly random nature of these attacks terrorized communities throughout the Chesapeake Bay, which, after all—along with revenge—was the intent of the British. Surely, a threatened civilian population would appeal to the national government for protection—which they did—demanding the recall of troops from the Canadian border in defense of the region. As Cochrane wrote to Sir George Prevost, 11 March 1814:

> And I hope to make a very considerable diversion in the Chesapeake Bay, to draw off in part the Enemy's Efforts against Canada—I hope to be able to Keep the Enemy in a constant alarm so as to prevent their sparing any part of their Military force from the State, South of Delaware, which if I succeed in, I do not believe from the temper of the Eastern states that they will be able to recruit their Army from thence. (Crawford 2002: 39–40)

But President Madison refused to pull his force from the Canadian line. As Canadian towns burned and British warships suffered a series of humiliating defeats, British anger increased, as did the frequency and intensity of their attacks up and down the bay. Typically, these attacks were unprovoked, opportunistic, and—at least according to one British naval officer—uninformed by local intelligence or strategy, and promulgated with brute force (George 2000: 34, 36).

Raids along the Chesapeake culminated in the expedition against Washington and Baltimore. Baltimore's determined and successful stand against the reinforced British fleet helped offset the humiliation of the burning of public buildings in the new capital and the ransoming of Alexandria. Plans to attack Philadelphia by water from the Delaware River and overland from the head of the Chesapeake Bay (FIG. 2), in a classic pincer movement, were briefly entertained by Vice Admiral Cochrane in a letter from Rear Admiral Cockburn to Vice Admiral Cochrane, dated 17 July 1814:

> If Philadelphia is supposed to be the Object of greater Importance than the Places I have just mention'd [Washington, and Baltimore], I should deem the landing at Elkton the most advisable Mode of approaching it, as the intended Point of Attack would thereby be masked till the Army would be actually landed and on its March on the Road from Elkton to Wilmington (above Newcastle), which is short and good, and does not offer, as far as I know, Difficulties or Opposition of any Kind, and this Movement need not prevent such Ships as may be judged requisite, from proceeding up the Delaware to co-operate with the Army as Circumstances may require. (Crawford 2002: 139)

With the apparent stalemate along the Atlantic coast and the St. Lawrence River, heavy losses at sea, and the end of the war with Napoleonic France, hostilities abated after the Battle for Baltimore. With ratification of the Treaty of Ghent on 17 February 1815, the war came to an abrupt end, although lingering in some theaters because of the time needed to announce the peace.

This brief narrative paints the progress of the war in broad strokes from the perspective of the Chesapeake region. It does not capture the levels of anxiety and confidence, fear and bravado, nor the deference and pride experienced variously and simultaneously by residents. Neither does it reflect the lack of consensus over the necessity and propriety of fighting the British. A host of books published since the War of 1812, and especially since the late 1990s, address these and other matters of historical interest (George 2000; Eshelman, Sheads, and Hickey 2010; Eshelman and Kummerow 2012), and reproduce letters of British and American commanders (Dudley

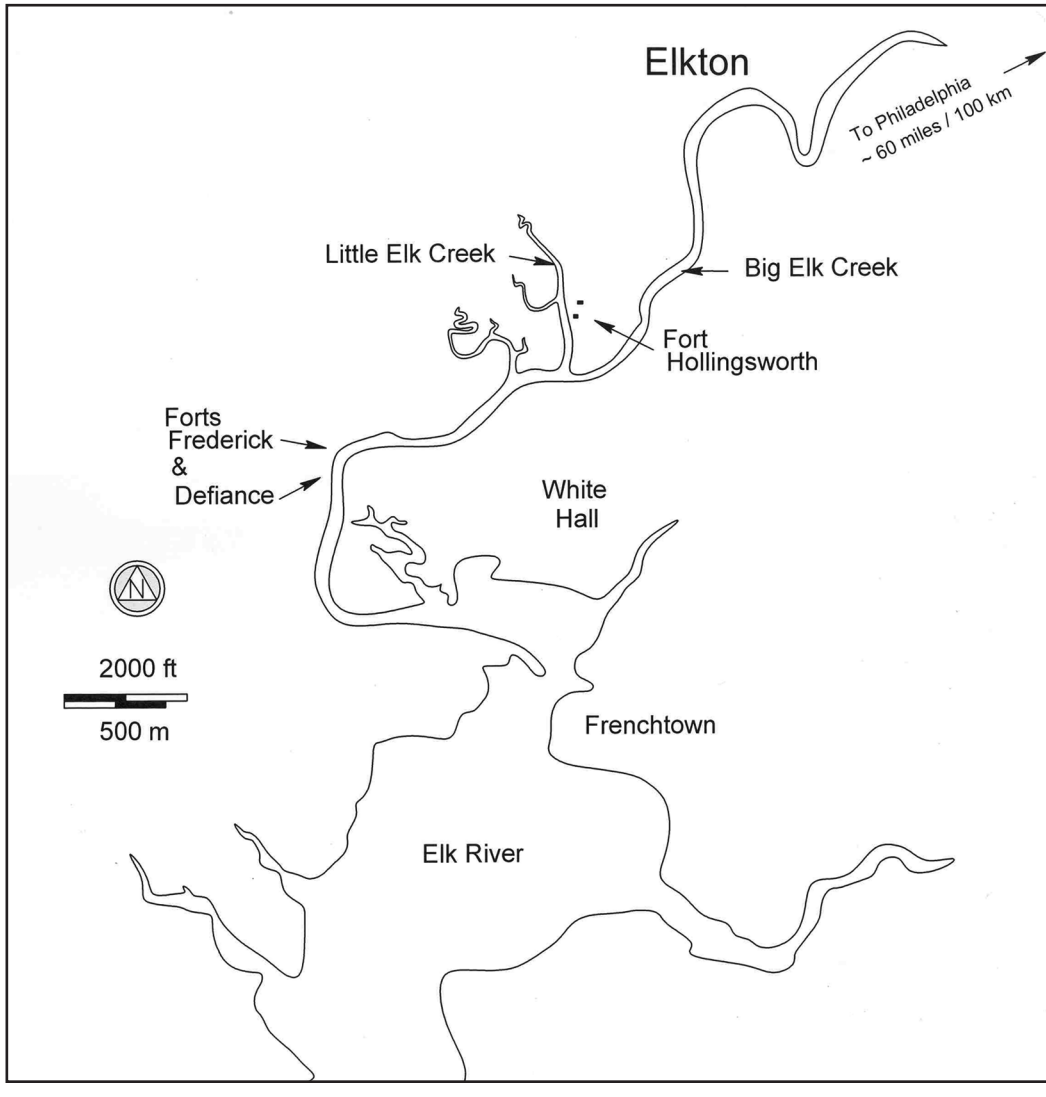


Figure 2. Location of Fort Hollingsworth at the head of the Chesapeake Bay and on the route to Philadelphia. (Map by James G. Gibb, 2012.)

1992; Crawford 2002). This article focuses specifically on the war in the northern Chesapeake Bay, how the citizenry responded to threats of British invasion, and the archaeological methodology developed to examine those responses.

## Fort Hollingsworth

Whether the people of Cecil County were aware of Cochrane's strategic alternatives or suspected some variation thereof remains undetermined. It is more likely that they based their defensive posture on prospects of British raids that had begun in earnest more than a year before either Cochrane or Cockburn described the Philadelphia option in writing. In April 1813, at the beginning of the British raiding season and at about the time that Cockburn's squadron threatened (but did not attack) Baltimore, locals took action, as reported in the Baltimore *Patriot* on 22 April 1813:

> [A] meeting of the people of the town [Elkton] and county [Cecil] was called, when not less than 200 convened at the court-house, and in a few minutes $1,000 was raised; a committee of three appointed; and on Saturday the ground laid out for three breast-works; one at Elk Landing [Fort Hollingsworth], one between the landing and Frenchtown, and one at Frenchtown. On Saturday [17 April 1813] the first was nearly completed—300 feet of a semi-circle; and mounts five 6-pound cannon; the trench sufficient to contain 500 men—besides this, at the landing, we have Captain [Zebediah] Snow's letter of marquee [schooner Atlanta], with six cannon. (Eshelman, Sheads, and Hickey 2010: 110, 112)

Pennsylvania militia reinforced Fort Hollingsworth, as evidenced by a welcoming speech at Elkton on 22 May 1813 by General Thomas Marsh Forman, published in the *Easton Republican Star* on 8 June 1813:

> With a foe to contend with, who in our very infancy we have already humbled, we have nothing to dread if we are united.—Let us not be alarmed or discouraged by their plunder & burning, they will themselves become ashamed of the damned work and discontinue the brutal savage warfare. Let us act as virtuous citizens by banishing all party distinction until we have expelled the foe. To you Gentleman officers and soldiers of the Pennsylvania militia in the name of the inhabitants of Elkton, I offer their warmest and most grateful acknowledgments. (Eshelman, Sheads, and Hickey 2010: 111)

Fort Hollingsworth, under the direct command of Captain Henry Bennett, fended off a British landing party on 29 April 1813 (Eshelman, Sheads, and Hickey 2010: 112). The raiders disembarked at White Hall Point and marched across the peninsula to Cedar Point, turning back upon meeting resistance. At the same time, nearby Fort Defiance repelled attacking British barges. (We have found surface features suggestive of Fort Defiance, but have not confirmed the location of the fort as of this writing.)

On 12 July of the following year, two months before the attack on Baltimore, another British raiding party attacked Fort Hollingsworth. There is a brief description of the skirmish in a letter from General Thomas Marsh Forman to his wife, Martha Ogle Forman, from 12 July 1814:

> Five barges were discovered on the [Elk] river and about one o'clock they opened upon our view from behind a point, and point blank shot, say ½ a mile. We gave them in all eleven guns, so well directed, that they hastily put about and retreated down the river having fired but three at us, which did us no injury. (Eshelman, Sheads, and Hickey 2010: 111)

Depredations continued in the bay, leading to the land attack at North Point and the bombardment at Fort McHenry in mid-September 1814, but with news of the Treaty of Ghent being ratified in February 1815 the British abandoned the Chesapeake, with the last British warship (the frigate Orlando) departing 10 March. Fort Hollingsworth was subsequently demolished, although surviving documents do not reveal exactly when and how.

## Search for Fort Hollingsworth

The fort was named for Zebulon Hollingsworth, a prominent planter on whose land it was built. Hollingsworth's house, considerably modified after a fire in the mid-19th century, survives and currently serves as a museum operated by the Historic Elk Landing Foundation (FIG. 3). The Town of Elkton (seat of Cecil County government), owns the approximately 60 ac. tract surrounding the house, of which the

foundation manages 22 ac. The grounds occupy the floodplain of the Elk River, its two principal tributary creeks, and three low terraces. Most of the land acquired by the town remains in cultivation. The portion leased to the Historic Elk Landing Foundation consists of forested wetlands at the south end of the parcel, arable land recently taken out of cultivation and maintained as lawn, and the currently cultivated field east of the lawn, south of the county jail, and west of Big Elk Creek. Two pre-20th-century dwellings survive, along with several 20th-century outbuildings and one 19th-century barn ruin. The foundation has restored the dwellings ("Stone House" and "Hollingsworth House") and maintains the surviving outbuildings.

Thomas J. Sample, reminiscing in the *Cecil Whig*—a local newspaper—described Fort Hollingsworth as "a mud or earth battery built just below the old stone house which stood on the lower wharf" (Sample 1880). Local history enthusiasts have assumed that he referred to the southernmost of the two dwellings (FIG. 4), an idea reinforced by the tradition that the building was an addition to a log-built trading post built by Zebulon Hollingsworth as early as 1775, and that some local historians attribute to the 1690s Swedish trader John Hanson Steelman.

Archaeological research at Historic Elk Landing began in 1984 with a search, not for the fort, but for the 1690s trading post. Henry Ward (1984) excavated 21 auger holes and 6, 9–18 sq. ft. units around the extant stone house—purportedly an addition to the trading post demolished in 1917. He recovered aboriginal materials and 19th- and 20th-century domestic and architectural artifacts, but nothing of 17th-century or even unequivocal 18th-century vintage. One of his excavation units (B) did encounter "dense, rocky, orange clay" at least 1 ft. thick beneath the plowed soil (Ap horizon). Auger holes on three transects also encountered this horizon, which Ward (1984) interpreted as an effort to fill low spots in the agricultural field.

Nearly 20 years later, Dwayne Pickett (Pickett 2001, 2002; Pickett, Heinrich, and Groben 2002) conducted three investigations around the Stone House and across the non-wetland portion of the 22 ac. park. His investigations produced no 17th-century material. Eighteenth-century artifacts, apart from a single white salt-glazed stoneware

Figure 3. Hollingsworth House was built in the late 18th century and modified in the mid-19th century after a fire. (Photo by James G. Gibb, 2012.)


Figure 4. The "Stone," or "Steelman" House, reputedly dates to the late 18th century. (Photo by E.H. Pickering, post 1933, HABS MD-444.)

sherd and a dozen pearlware sherds (apparently undecorated) recovered from around Stone House, clustered around Hollingsworth House. Nineteenth-century domestic artifacts clustered on the north sides of both buildings (FIG. 5). Although a dendrochronology date of 1793 was calculated for Stone House (Cook and Callahan 2001), the artifact distributions suggest that the house did not exist until after 1800 and possibly not until after 1815. This is an important consideration because reputedly the fort was just below "the old stone house" (Sample 1880). If the Stone House stood in 1813, it would have obscured the field of fire westward from the fort across Little Elk Creek, unless the fort were built in what is now wooded wetland. We hypothesize that Sample referred to Hollingsworth House, and that Stone House had not been built when the 14-year-old Sample had visited the site in 1815.

Using Pickett's (2002) artifact distributions as a guide, we surmised that the fort was somewhere south of the house, which occupies the upper of three terraces, north of the lowest terrace (wooded wetland), and east of Stone House. Ward's (1984) discovery of fill 25–50 ft. east of Stone House suggested that he found portions of the refilled ditch or remnants of the demolished rampart. The newspaper item cited above provided a few hints as to the fort's size and construction: it was semicircular, about 300 ft. in length, and included a ditch large enough to accommodate 500 soldiers. Clearly, the writer misunderstood how such a breastwork would function. The purpose of the ditch was to provide material for an earthen rampart and to slow the advance of ground troops and absorb musket and artillery rounds. Defenders would have occupied the area behind (north of) the earthwork, not the ditch to the south where cannon would have showered burning ashes upon the defenders' heads and their powder flasks.

Examining the distribution of the soils, initially identified by Ward (1984) among the

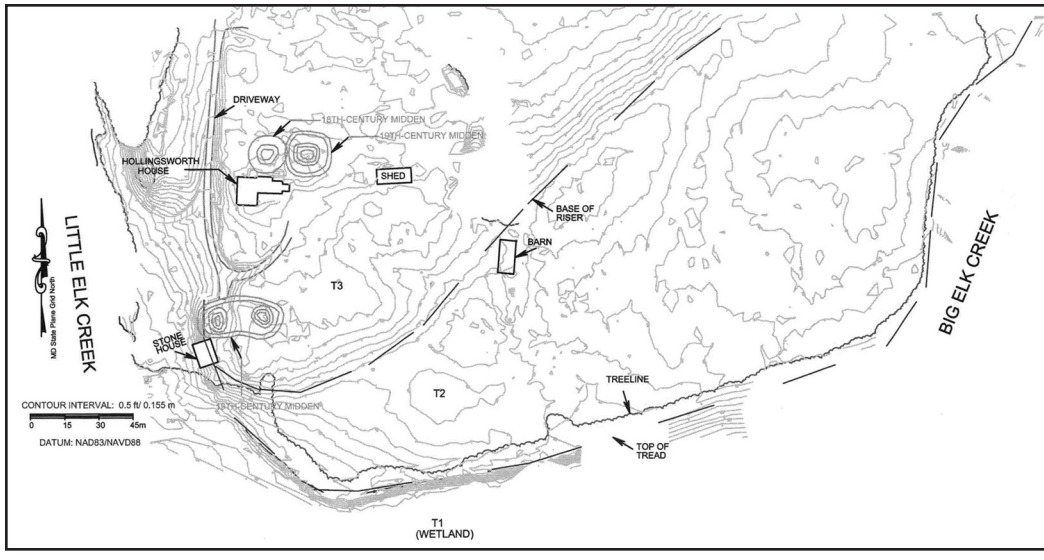


Figure 5. A composite map of historic artifact distributions suggests that Stone House dates to the 19th century. (Map by William E. Stephens and James G. Gibb, 2012.)

shovel tests excavated by Pickett (2002), might have revealed the footprint of the breastwork. Unfortunately, the shovel-test notes have not survived, nor were those data included in the report. Retesting the area with shovel test pits was not feasible because the Maryland Historical Trust's policy is to prohibit research that permanently alters resources on its easement properties. We had hoped to gain permission for minimal testing, and permission eventually was granted based on the results of noninvasive and minimally invasive testing; but it limited ground disturbance to 40 $m^2$ (20, 2 × 1 m units) for the purpose of aiding site management. The Archeological Society of the Northern Chesapeake (a chapter of the Archeological Society of Maryland), through volunteer efforts and some funding, conducted the testing necessary to find the fort and justify the intrusive testing approved by the Maryland Historical Trust. The team developed and implemented a research design to achieve these objectives.

## Methods

Although the site has been cultivated at least since the late 18th century (Gibb 2003), the outlines of three low terraces are still visible within the park. The lowest terrace (T0) is a periodically inundated, wooded wetland occupying the point of the peninsula between the Big Elk and Little Elk creeks. The upper terrace (T2) extends northward, well beyond the park boundaries. All the extant buildings at Elk Landing occupy this terrace. The middle terrace (T1), like the upper and lower terraces, extends between the two creeks. Each terrace is offset from its neighbor by an elevation difference of about 3 ft. The terraces appear to be level, apart from 20th-century modifications, such as the entrance road and several gardens.

Field investigations involved noninvasive and minimally invasive techniques: magnetometer (fluxgate gradiometer) surveying on transects spaced at 0.25 m intervals over 2,100 $m^2$; microtopographic mapping; soil borings at intervals of 100 ft. or less (some judgmentally placed); ground-penetrating radar survey of transects spaced at 0.25 m intervals over 3,125 $m^2$; and precision mapping with a total station to ensure spatially accurate and reliable correlation of the results from each of the surveys.

From the perspective of military terrain analysis, the upper terrace seemed the most likely setting for a fort intended to stop the British from sailing up the two creeks to Elkton and points north. It is high, level ground with an excellent view downstream and close enough to the main channel to

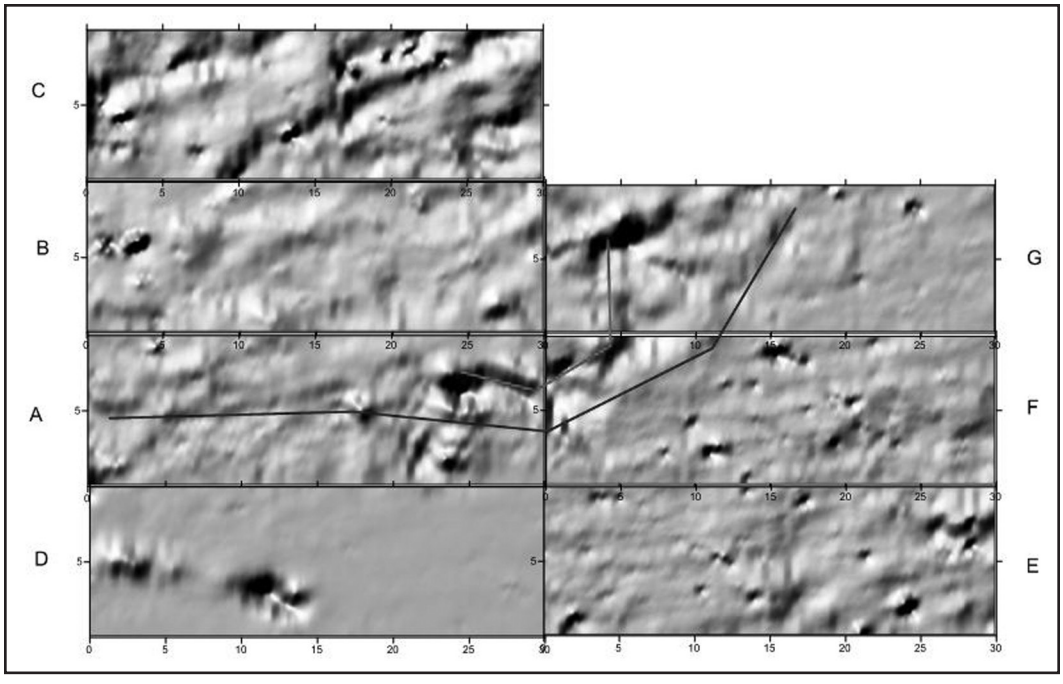


Figure 6. The shading function of Surfer® revealed a linear feature of high positive magnetic gradient suggestive of the earthwork. (Figure by James G. Gibb, 2012.)

bring ascending boats under cannon and musket fire. The wetland offered a significant obstacle to marines disembarking from barges, and the farmland behind the fort afforded a ready means of retreat should the fort be overrun. The Stone House to the west was the only obstacle to a clear field of fire for a fort in this location, and, as indicated above, the distribution of artifacts recovered from shovel tests suggests that it had not been built prior to the War of 1812.

Quantock, working with members of the Archeological Society of the Northern Chesapeake in July 2011, conducted a magnetometer survey of that portion of the T2 terrace east of the Stone House, south of Hollingsworth House, and north of the extensive wetland at the fork of the Big Elk and Little Elk rivers (Quantock 2011). He used a Geometrics G-858 Magnetic Gradiometer system, with dual, vertically separated sensors, along 61 transects, each 20 m long and 0.5 m apart. The resulting vertical magnetic-gradient data were downloaded to MagMap2000, a computer program that formatted the data for gridding and contouring in Surfer, a computer surface-trend analysis package employing a kriging algorithm (FIG. 6). The half-tone images were then georeferenced in a GIS system using grid-corner coordinates established with a Sokkia 3110 total station. Anomalies in the magnetic gradients were then identified and marked on the drawing. The linear pattern of high magnetic gradient suggests the location and orientation of the earthwork, as well as a bastion or firing platform that may have supported one of the fort's five cannons (FIG. 7).

Stephens mapped the park in the spring of 2012, using two surveying instruments (robotic total station and Network GPS Rover), collecting a large number of point positions (easting, northing, and elevation above mean sea level) in Maryland State Plane Grid coordinates using the NAD83 Geodetic Datum and NAVD88 Elevation Datum and U.S. Survey feet units. These values, after gridding and contouring, produced a topographic map with a contour interval of 0.5 ft. The contour lines delineate the terraces, but they also reveal a broad, U-shaped topographic anomaly about 50 ft. east of Stone House, the broad convex portion (the front) of which is oriented approximately N 68° E. Its west and east branches cant inward by 10° and 30° respectively.

In the late winter of 2012, the members of the research team returned to Elk Landing. We established a new grid, approximating the orientation of the magnetometer-survey grid, but sharing a point of origin at E1063.03/N712.61. The new grid covered a 50 × 50 m square (FIG. 7). Quantock (2012) deployed a GSSI SIR-3000 ground-penetrating radar system with 400 MHz dipole antenna and a survey wheel for distance calibration. The reflection profiles were collected using a 40 ns (nanosecond) time window (for an approximate survey depth of 1.5–2.0 m, or 5–7 ft.). Note that the recorded cross-sectional profiles have a vertical axis measured in two-way travel time that is related to depth by the (unknown and often variable) velocity of the radar pulse (FIG. 8). For this survey, 1 NS approximates 5 cm of depth. Forty reflection traces were collected per meter along transects of 50 and 25 m in length, spanning each grid at 0.5 m intervals. Figure 8 represents Transect 151, which extends between the midpoints of the south and north baselines (FIG. 8). The left half of the section reveals intense reflection representing redeposited, gravelly ditch fill. Stephens subsequently tied the grid control stations to the compiled topographic map. Individual reflection profiles were compiled into a 3D block model (reflection amplitude as a function of east, north, and travel time) from which plan-view time slices (~depth slices), as well as cross-sectional or vertical profiles, could be extracted. The 1.0–1.5 m time slice reveals a well-demarcated south edge to the feature and a less regular north edge suggestive of the edge of ditch and the remains of the rampart base, respectively (FIG. 9). Two low-reflection areas, indicated by arrows on the figure, correspond with the possible bastions suggested by the magnetometry map.

Stephens examined soils across the site and into the marsh at the south end of the peninsula in the spring of 2012. He used a 4 in. bucket auger and recorded the soil colors, textures, and other characteristics on log sheets consistent with those used in geotechnical studies. Hand-auger borings were spaced 100 ft. apart in the cultivated portions of Elk Landing and <50 ft. apart in the lawn area of the suspected fort location. Borings on the easement were undertaken with the permission of the Maryland Historical Trust. All borings were mapped with a robotic total station using the previously established survey control. Borings through the radar anomaly encountered poorly sorted gravel and yellowish brown, very fine sandy loam. This material is consistent with the "dense, rocky, orange clay, at least one foot thick" encountered by Ward (1984) in his units east of the Stone House. Elsewhere on the park property, auger borings consistently met

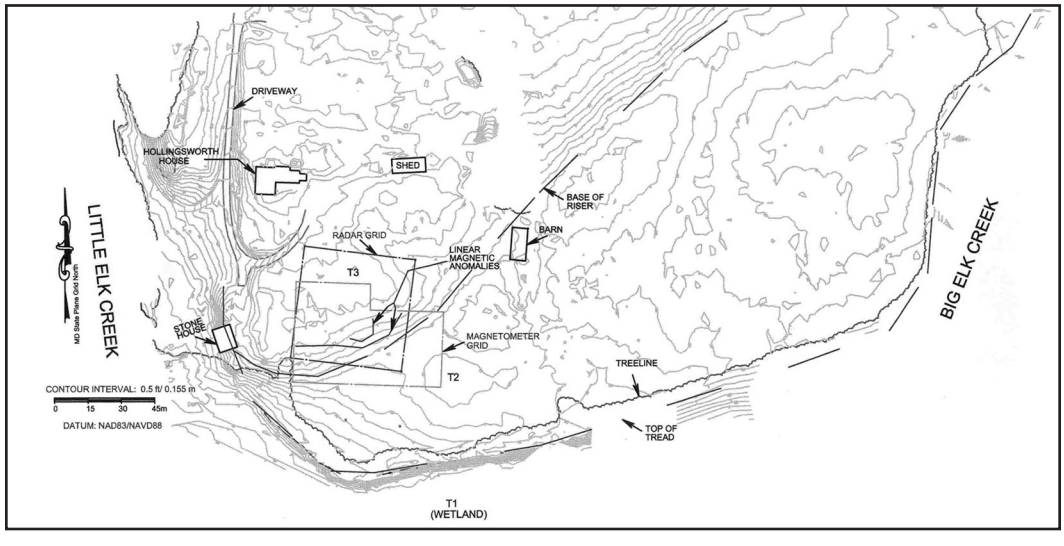


Figure 7. Topographic map of the site illustrates the placement of soil borings and the grids for the magnetometer and radar surveys. (Map by William E. Stephens, 2012.)

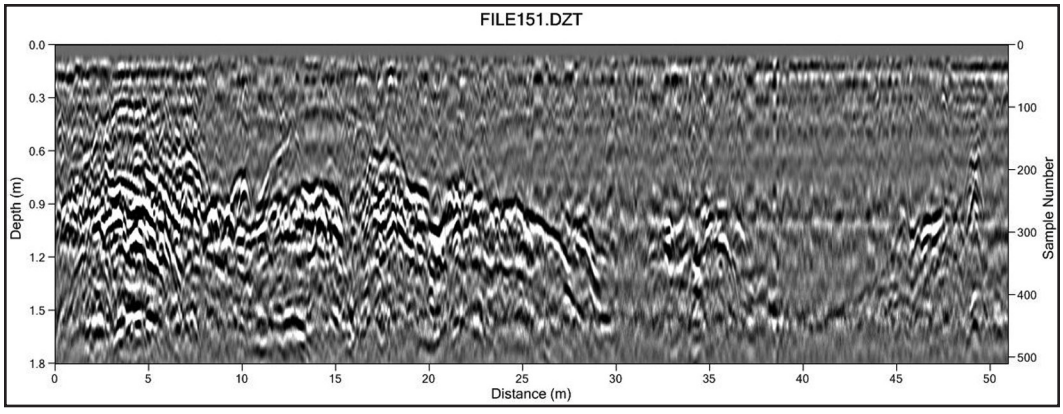


Figure 8. Transect 151, running south to north across the center of the main radar grid, revealed very high reflections near the start of the grid suggesting gravelly ditch fill. (Figure by Peter C. Quantock, 2012.)

refusal on a layer of well-sorted pebbles, cobbles, and gravels at 0.5–1 m below ground surface. This layer occurs throughout the 22 ac. park, except in a linear feature that cuts east southeasterly across the site and through the area of interest. This linear feature contains a geologically younger stratified sequence of pebbly to medium-sandy beds, which Stephens interprets as stream-channel alluvium just below the subsoil. Stephens suggested this looser material may have been encountered and even exploited as the fort builders proceeded with their excavation.

Together, the detailed topography, soil-boring, magnetometry, and radar data reveal the location and overall configuration of the earthwork. The only piece of information that might have undermined our interpretation was the existence of the Stone House that would have blocked the defenders' field of fire. The artifact distributions from Pickett's work, however, suggest that the building probably did not exist prior to the War of 1812. Only one artifact of clear 18th-century provenance—a white salt-glazed stoneware sherd—was recovered near the building. By contrast, the shovel tests around Hollingsworth House to the north yielded many 18th-century ceramic sherds. Archaeological investigation of the width and geometry of the ditch, therefore, required only limited excavation, which is all that the managing agency would permit. Because of the restrictions placed on excavation, we confined our efforts to exposing a portion of the original ditch and possible base of the rampart, and were unable to explore the internal structure of the fortification to any meaningful extent. Gibb, the project manager, elected to excavate a single transect of 2 × 1 m units extending northward 40 m toward the Hollingsworth House from approximately 8 m south of where the geophysical data identified the edge of the earthwork. The field team established unit locations with a total station and collected elevation data with which a topographically corrected profile could be constructed for the entire trench.

The excavation units revealed a section of the original ditch, but no trace of the rampart

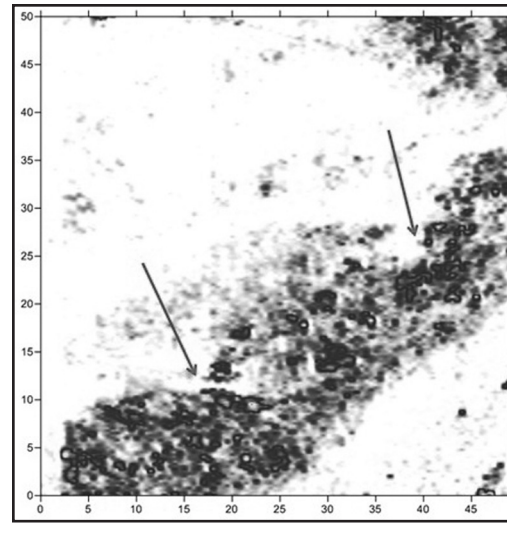

Figure 9. Radar reflections from inferred ditch fill at an estimated 1.0 m to 1.5 m below grade. (Figure by Peter C. Quantock, 2012.)

survived in the area tested (FIG. 10). A pre-1813 plowzone containing aboriginal lithic debitage was uncovered in the southernmost unit (Unit 1) beneath a thin deposit of rampart material that was not returned to the ditch after February 1815 when the earthwork was demolished. The remaining units revealed a post-1815 plowzone above a Bt horizon, except for those units that extended across the backfilled ditch (Units 2, 4, and 12). The field crew screened plowed soils through ¼ in. hardware mesh, recovering no definitively pre-1815 non-aboriginal artifacts. The ditch fill, composed of gravelly soils through which the fort builders had originally dug, was suited only for trowel sorting. It yielded no military-related artifacts and little of any kind of material culture; however, the contact between disturbed, mixed gravelly backfill and the undisturbed, stratified pebbly sands was distinct and revealed the base of the ditch excavation.

The exposed profile reveals a gentle slope down from the direction of the Hollingsworth House southward to the north edge of the T1 terrace. Most of the profile reveals an Ap horizon above a Bt horizon. A detail of the exposed ditch profile (FIG. 10) documents mixed gravels and very fine sandy silt lacking stratigraphic structure, and lenses of undisturbed gravels through which the fort builders quarried material for the rampart. The lack of structure in the fill suggests that the rampart was shoveled back into the ditch, rather than allowed to gradually erode. The role of slaves in both building and demolishing the fortification has not been established, but Zebulon Hollingsworth reported ownership of 8 slaves in the 1790 census and 11 in the 1800 census. Other community members may have contributed slave labor to these tasks in lieu of money or materials.

## Discussion

The general location of Fort Hollingsworth has been known for decades, if not longer, but its specific location and orientation remained uncertain. In the search for this information, the members of the project team accomplished

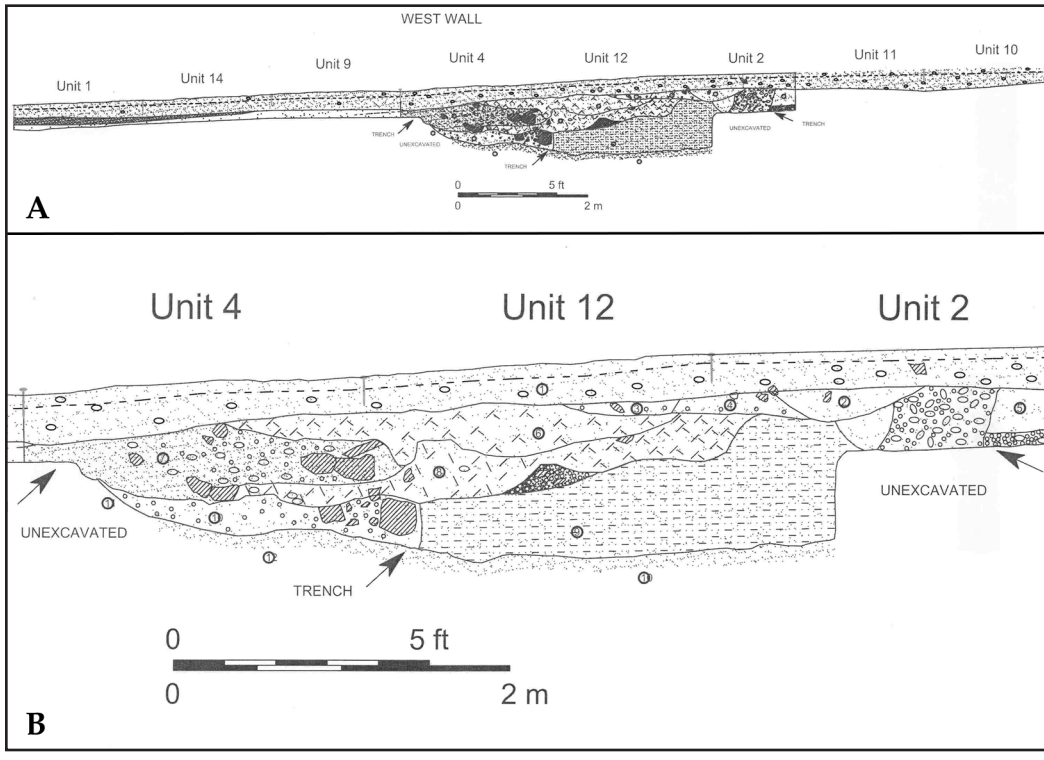


Figure 10. (A) Overall test trench profile corrected for slope. (B) Detail of ditch fill. (Figure by James G. Gibb, 2012.)

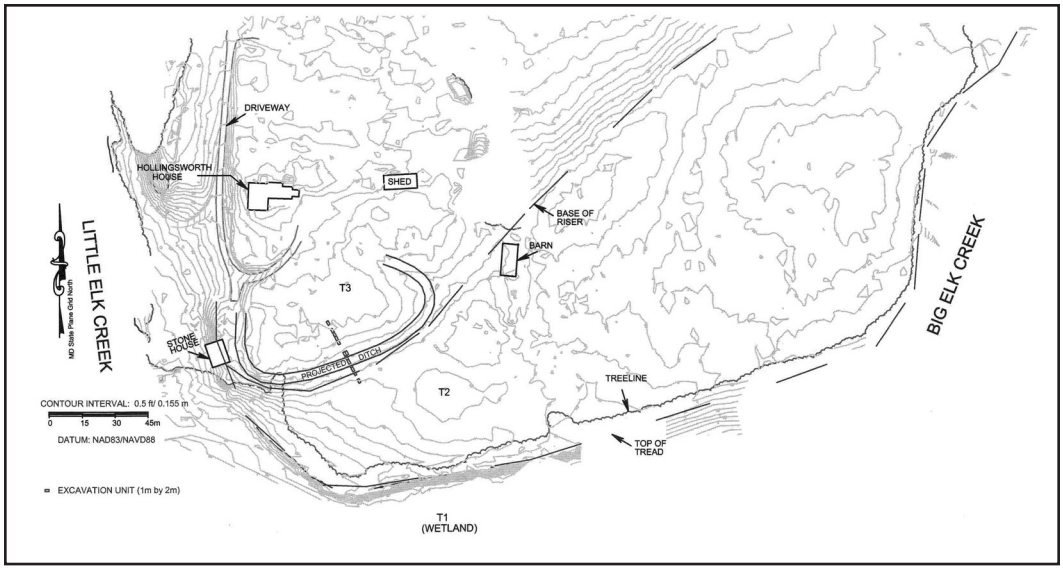


Figure 11. Projected line of the ditch. The builders of Fort Hollingsworth in 1813 created a rampart within the curve of the ditch line from the excavated fill. (Map by William E. Stephens and James G. Gibb, 2012.)

several things. First, of course, we have established the specific location, orientation, and general configuration of the earthwork (FIG. 11). Also, in reevaluating prior archaeological research, we have made a case for the Stone House being far more recent than previously thought, despite a 1793 dendrochronology date. We have also introduced the concept of vernacular fortification and developed a protocol for investigating similar sites, while conserving capital and cultural resources. It is to these two latter points that we now turn our attention.

The people of Cecil County, fearful of British depredations and with justifiably little confidence in the federal or state governments to protect them, organized themselves and combined resources to build three fortifications at the head of the Chesapeake Bay. The Revolutionary War having ended some 30 years earlier, few if any of these citizens had experience or training in military sciences. They chose a location for Fort Hollingsworth that they thought, with the arms and men at hand, would command movement up the Little Elk and Big Elk creeks, protecting Elkton and the back door to Philadelphia. In the end they chose well: they only had to fend off small raiding parties of Royal Marines that relied on stealth and surprise. Had the British decided to pursue the invasion of Philadelphia, as outlined by Rear Admiral Cockburn in April 1814, arriving with the approximately 4,500 troops at Elk Landing that had fought at Benedict in the August 1814 attack on Washington, the fortification would have offered little resistance to their advance.

Whether or not the fortification would have impeded the advance of a smaller, but still substantial, fighting force is a matter for military scientists to consider. The broad, crescent shape of the earthwork precluded enfilade firing, and placing the fortification close to Little Elk Creek reduced effective musket fire on vessels attempting to advance up Big Elk Creek, which was the direct approach to Elkton. The fortification might have provided modest protection for its defenders, but appears not to have been well designed to fulfill its primary function: protection of Elkton and the route to Philadelphia. The newspaper editor's description of the trench as "sufficient to contain 500 men" betrays a distinct lack of knowledge, at least on his part, of how the fortification was supposed to function. The ditch below a rampart manned with cannon is the last place an infantryman would want to be in fending off artillery fire from British barges and the muskets and bayonets of advancing marines.

The speed with which the people of Cecil County erected Fort Hollingsworth and the description provided by the local newspaper editor both suggest that this fortification was an ephemeral earthwork. The arrangement of ramps and firing platforms, possible placement of a bombproof, and the camps of bivouacking of troops would have been equally ephemeral, erased from the landscape nearly as quickly as they were erected, as the land returned to cultivation after the war. Such features require research tactics that allow investigators to identify and delineate features, the design of which may not be deduced from period military treatises and training manuals. In the case of the search for Fort Hollingsworth, the tight constraints on human capital, funds, and allowable scale of disturbance created even greater challenges. Indeed, the prospects of conducting any excavations on the site were dim at the outset because the managing state agency repeatedly reminded team members that they would not allow research archaeology on a site over which they held a perpetual preservation easement. We needed a cost-effective phased approach that could yield compelling evidence with minimal or no ground disturbance. Even extraction of 4 in. diameter cores at 50 ft. intervals required permission, and authorization limited the number of allowable cores. These constraints led to the development of an effective protocol for identifying and delineating vernacular military earthworks.

We began with a magnetometer survey in an area that seemed most promising, based on the reminiscences of an old man who was on the site some 65 years earlier, reassessment of previous archaeological surveys, and military terrain analysis. Positive results led to detailed topographic mapping and coring, followed almost immediately by a ground-penetrating radar survey. Magnetic, radar, and soil anomalies, coupled with subtle topographic indicators, all accurately referenced on a single map, created a compelling argument for the team having found the fortification. Limited excavation could—and did—bear out those findings. It was inadequate, however, for investigating geophysical (radar and magnetic) anomalies suggestive of related features and internal structure; e.g., the hypothesized bastions suggested by both geophysical surveys. Most anomalies remained uninvestigated, with our efforts focused explicitly on exposure of a portion of the ditch and base of the earthen rampart. Ground truthing through excavation required little money and staffing and made wise use of the resource.

This same protocol could be used more intensively to examine site structure: the edges of the ditch can be staked out with the aid of a digital instrument and our mapping database, and the enclosed portion subjected to additional geophysical surveys followed by targeted excavations.

We developed this protocol by actively investigating a site and not by waiting for research methods to improve. Theories and methods and specific techniques develop through practice and by meeting the challenges of limited resources and constraining circumstances: that is, they develop through resource conservation, not preservation.

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