# Archaeological Survey of the Berlin Lake Reservoir Coast, Mahoning, Portage, and Stark Counties, Ohio

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Berlin Lake is a U. S. Army Corps of Engineers multipurpose reservoir constructed in 1943 and located in the tri-county area of Mahoning, Portage, and Stark counties, Ohio. Federally owned land around the lake—6,885 acres—is leased to the Ohio Department of Natural Resources. In June 2016, the U.S. Army Corps of Engineers invited Kent State University (KSU) archaeologists to visit Berlin Lake in order to begin a partnership involving archaeological research in the area. At that time there was a concern that cultural materials, specifically those along the coast, were being lost due to natural and/or anthropogenic processes causing erosion along the reservoir's coast.

Intermittently between the Fall 2016 and the Summer 2018, professional and student archaeologists from KSU conducted an archaeological survey of the Berlin Lake Reservoir. The goal of this project was to assess potential "at-risk" areas along the coast, and, upon discovery of such areas, determine any needed intervention and preservation. Cultural remains which suggest continual human occupation for several thousand years have been previously documented at Berlin Lake. A phase I & II survey—covering a 20% sample of land surrounding the water (1,377 acres)—took place in 1987 (Rue et al. 1987) followed by a phase III investigation three years later (Church 1990). A wide variety of cultural remains spanning multiple time periods were recovered during these previous efforts (**Figure 1**). Despite the success of the earlier surveys, to our knowledge no further research has been conducted at Berlin Lake. As such, our survey of the reservoir's coast fills a gap in our knowledge of the area by providing a systematic evaluation of the prehistoric presence immediately adjacent to the water.

## Methods

Our survey covered the accessible portions of Berlin Lake's coastal perimeter and as well as many of the tributaries within Federal boundaries. While the survey attempted to cover the entire coastal perimeter, achieving success in areas with high visibility (**Figure 2**), the reservoir's southern region, as well as a few other inlet areas, presented an ill-defined or dangerous shoreline virtually impossible or unsafe for survey and thus were avoided. Additionally, due to plant growth, washed up debris, and/or sediment accumulation along the waterline, visibility was at times extremely low in these and other areas (**Figure 3**). The extent of the total coastal area covered by this survey is illustrated on the map (**Figure 4**).

In all accessible areas, pedestrian survey was used to maneuver along the coast while visually inspecting the area for archaeological materials (**Figure 5**). This "perimeter survey

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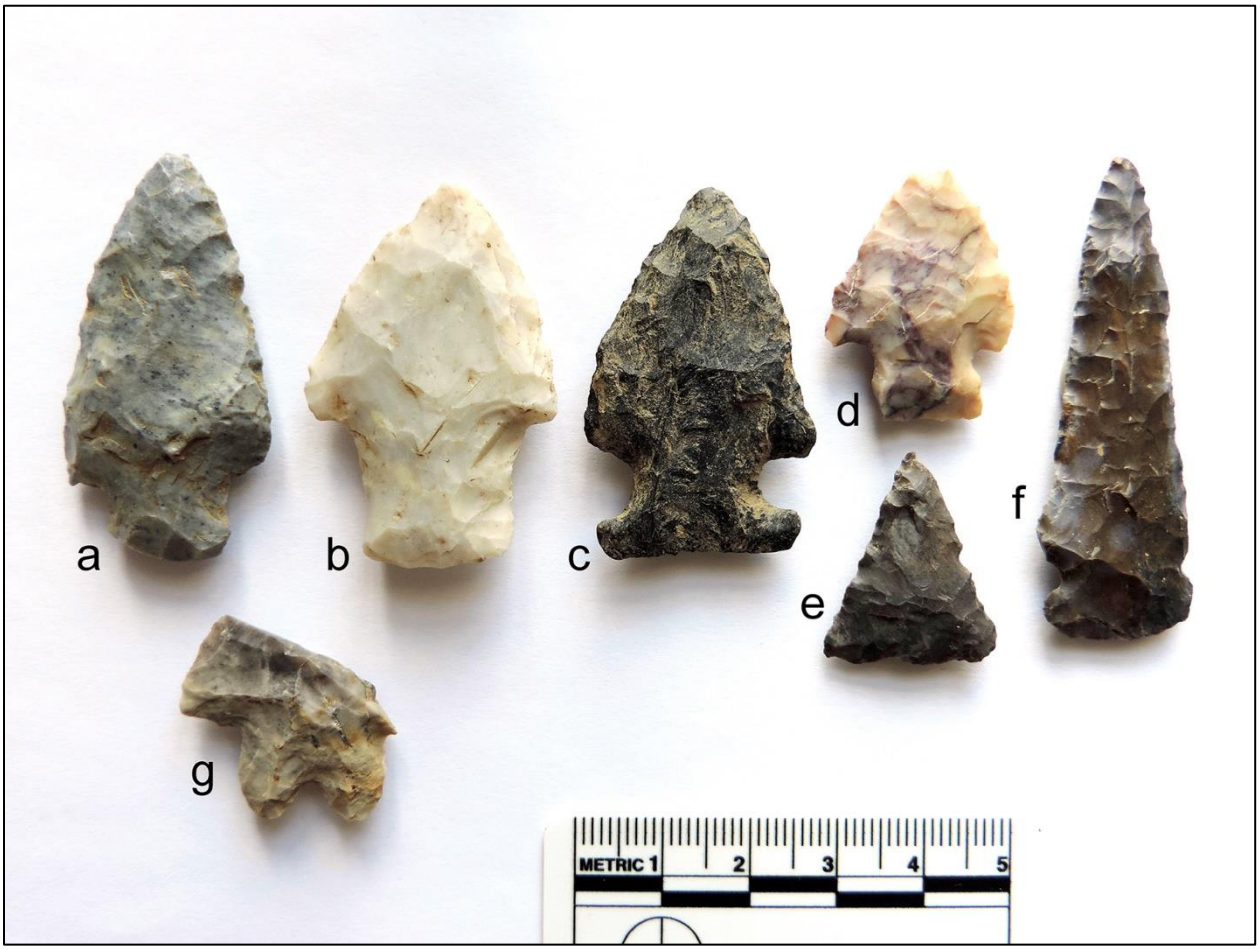


**Figure 1. Examples of point types found in the region near the Berlin Lake Reservoir: a. 33-PO-103, Genesee (Late Archaic); b. 33-PO-124, Kramer (Early Woodland); c. 33-PO-128, Jack's Reef (Middle-Late Woodland); d. 33-PO-83, Bottleneck (Late Archaic); e. 33-PO-80, Madison (Late Woodland); f. 33-PO-63, Meadowood (Early Woodland); g. 33-PO-122, LeCroy (Early Archaic).**

strategy" has proven to work well in previous projects (Eren et al. 2014) and was selected for this project for two practical reasons. First, a coastal focus provided maximum visibility of any buried archaeological deposits, since strata are visible at the water's edge. Second, a coastal focus allowed us to identify those cultural resources most in danger of being permanently lost via the very processes that expose them in the first place: flooding, erosion, freeze/thaw, or modern human activity.

The survey teams consisted of two to three members and a team leader who was either a faculty member or a graduate student with prior survey experience. All teams were given a GPS map with a designated "start" and "end" point for each day and were equipped with hand-held radios for communication among team leaders. The pedestrian survey proceeded along the coast as the terrain permitted. Upon encountering an artifact, walking survey was temporarily halted in order to focus efforts on the area surrounding the find-spot. All artifact locations were geo-

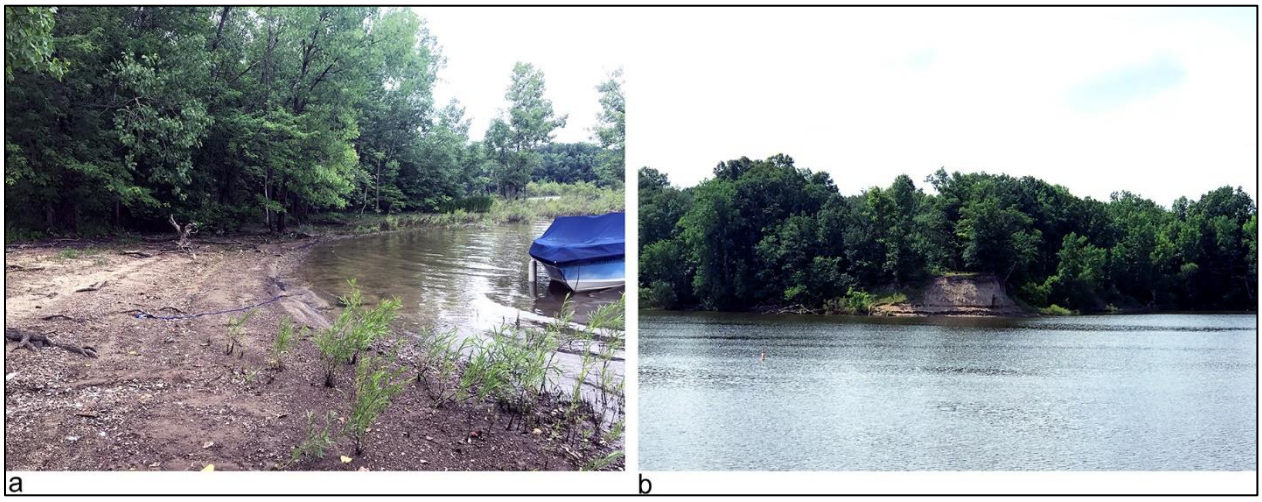


**Figure 2. Typical shoreline conditions: a. area of wash up and anthropogenic activity (boating and fishing); b. eroding bluff with walkable shoreline during low water levels.**

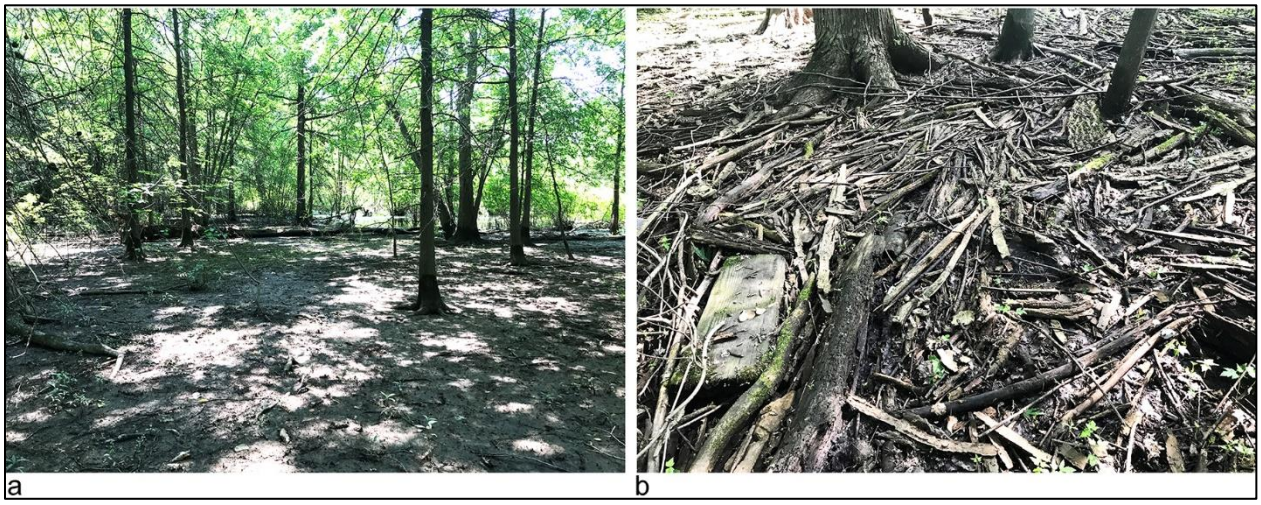


**Figure 3. Examples of areas that had limited to no visibility: a. mud covered woodland area subject to high water; b. accumulated woodland debris due to frequent flooding.**

located using a Garmin handheld Global Positioning System. Photos were taken of artifacts at their find location and of the surrounding area. All artifacts, geofacts, and potential artifacts were bagged and labeled on-site to ensure accurate find spot documentation. The collected artifacts were taken back to the lab at the end of each day and logged into the computer. During the survey all artifacts were collected from the find area in order to protect them from further environmental damage or the possibility of looting. All artifacts and associated data were systematically gathered and recorded as described above in accordance with the Standards for Archaeological Documentation set forth by the U.S. Secretary of the Interior.

Artifact processing and description took place during Fall of 2018 at KSU. When possible, artifacts were classified according to generalized type using morphological

characteristics. Artifacts were then photographed (**Figure 6**), accessioned, and recorded in a database. This phase provided hands-on learning for undergraduate students in archaeology who were interested in artifact processing and proper laboratory techniques.

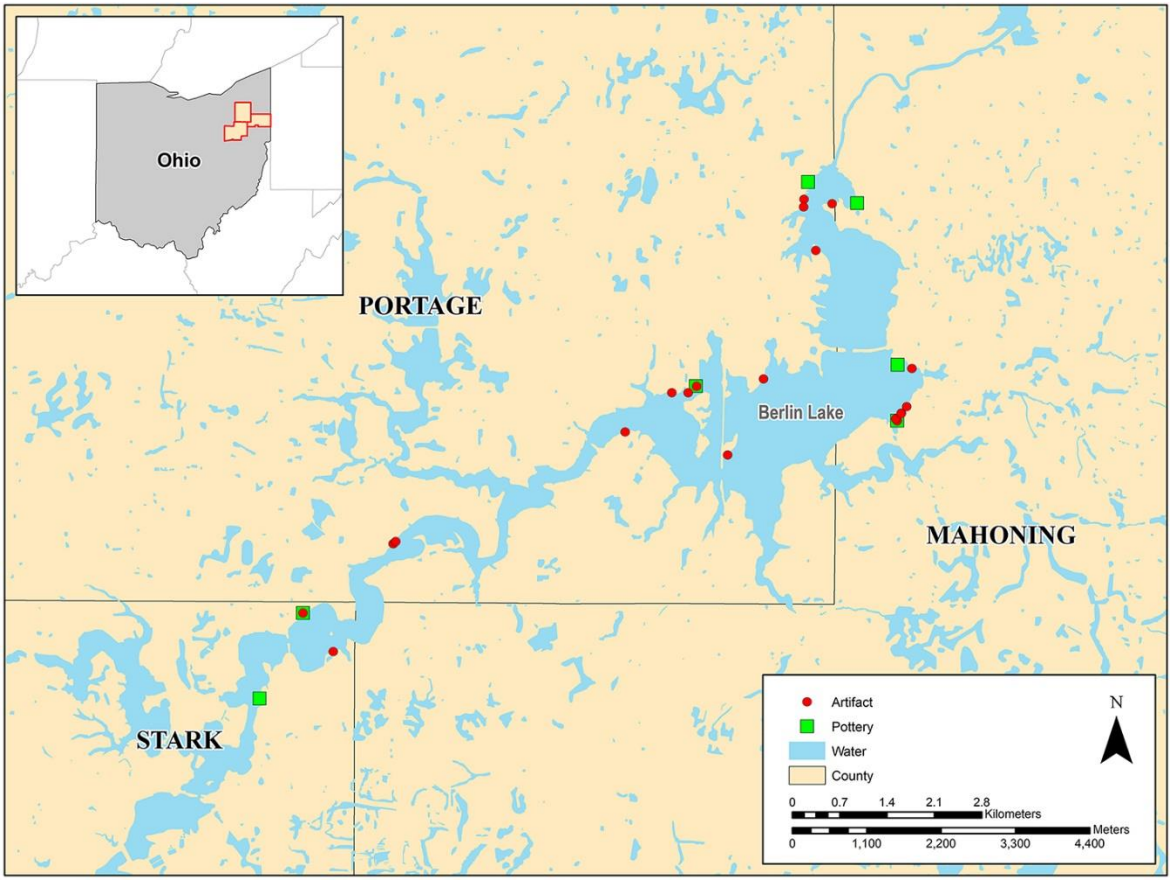


**Figure 4. Map of surveyed coastline with artifact locations.**

## Results

Although the survey recorded dozens of artifacts and find-spots, none were diagnostic to a specific time or culture. Most find-spots consisted of isolated flaked stone artifact or small scatters of lithic debitage on the coast. Given that we found no artifacts in the sediment walls directly above any of these coastal find-spots, we provisionally suggest that these artifacts washed onto shore, possibly during the peak wave action of the summer months, from inundated sites located along the Mahoning River. Overall, we did not find much evidence that would suggest cultural resources are being exposed, eroded, or lost along the Berlin Lake coast.

However, there is one instance where we feel further excavation is warranted to investigate a site that may be subject to deleterious erosional processes, and thus document its cultural resources. Site A-18 yielded bifacial tools (n = 3) (**Figure 6a-6c**) and a large amount of lithic debitage (n = 21) which appeared to be eroding out of the coastal floor itself. Test

**Figure 5. Team members survey the eroded coastline and shore areas in early Fall when water levels are lowered and there was greatest visibility and accessibility.**

excavations would hopefully uncover temporally diagnostic artifacts and help determine whether this site is a simple flint knapping locale or some sort of larger habitation.

As an addendum to our coastal survey, we assessed the condition of a previously excavated site: 33PO6, The Island Creek Burial Site (Fifer 1967). This site is located in an area

with high ATV and pedestrian traffic. There was concern that cultural materials had been exposed in this area and may require immediate intervention. Prior to the creation of the Berlin Lake Reservoir, archaeologists determined that the site occupied an upland glacial plain that

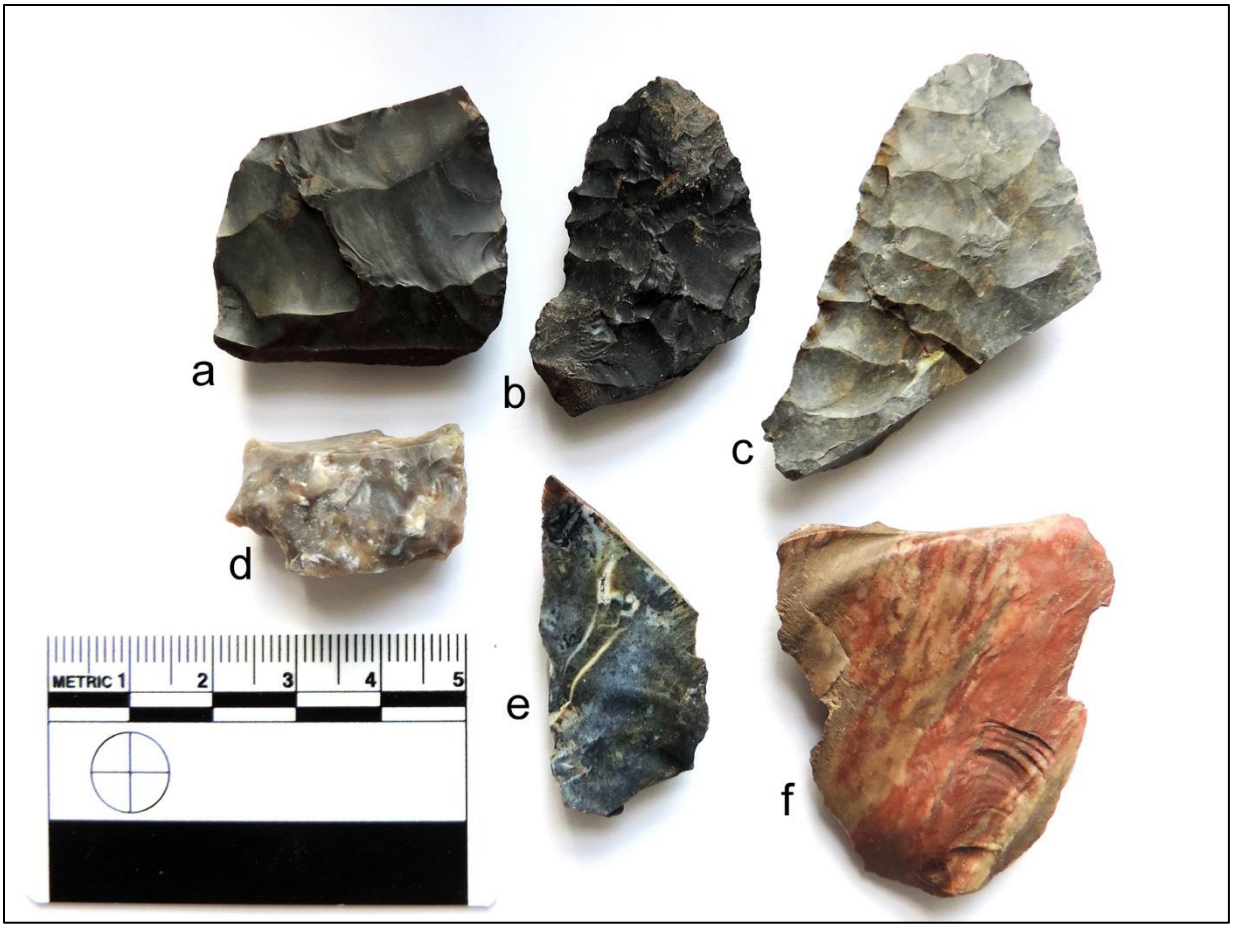


**Figure 6. Artifacts found during the survey: a. Site #A-18 biface; b. Site #A-18 biface; c. Site #A-18 biface; d. Site #A-06 point base; e. Site #BL-40 flake; f. Site #A-11 large flake.**

overlooked the confluence of Island Creek with the Mahoning River (Rue et al. 1987; Church 1990). The site was first recorded, and the kame area excavated in 1966 (Fifer 1967), then revisited in 1986 (Rue et al. 1987) and 1990 (Church 1990). A diagnostic Brewerton Side-Notched point and a Matanzas Side-notched point were used to place the temporal location of this site in the Late Archaic Period (5000-3000 BP) (Church 1990; Justice 1987; Lepper 2005). Church (1990) conducted a phase III excavation in which 754 artifacts were excavated from a 4% site sample. At that time the site was reported to be undisturbed.

M.R.B. and M.I.E. investigated this area and found no evidence of modern disturbance beyond a small pedestrian/ATV trail along the perimeter of the site. In earlier surveys, flint debitage was found along the bank and footpath; however, after a thorough survey of the eroded bank, no artifacts were found (**Figure 7a**). Additionally, we (likely) relocated the datum reference point used by Church (1990) – a double trunked tree (**Figure 7b**) –, and a visual survey

of the datum's immediate area revealed no exposed artifacts or disturbance. We suggest, following earlier researchers, that this site likely contains valuable information about the Late Archaic period in Ohio and should be frequently monitored to ensure its integrity until it can be more fully studied.

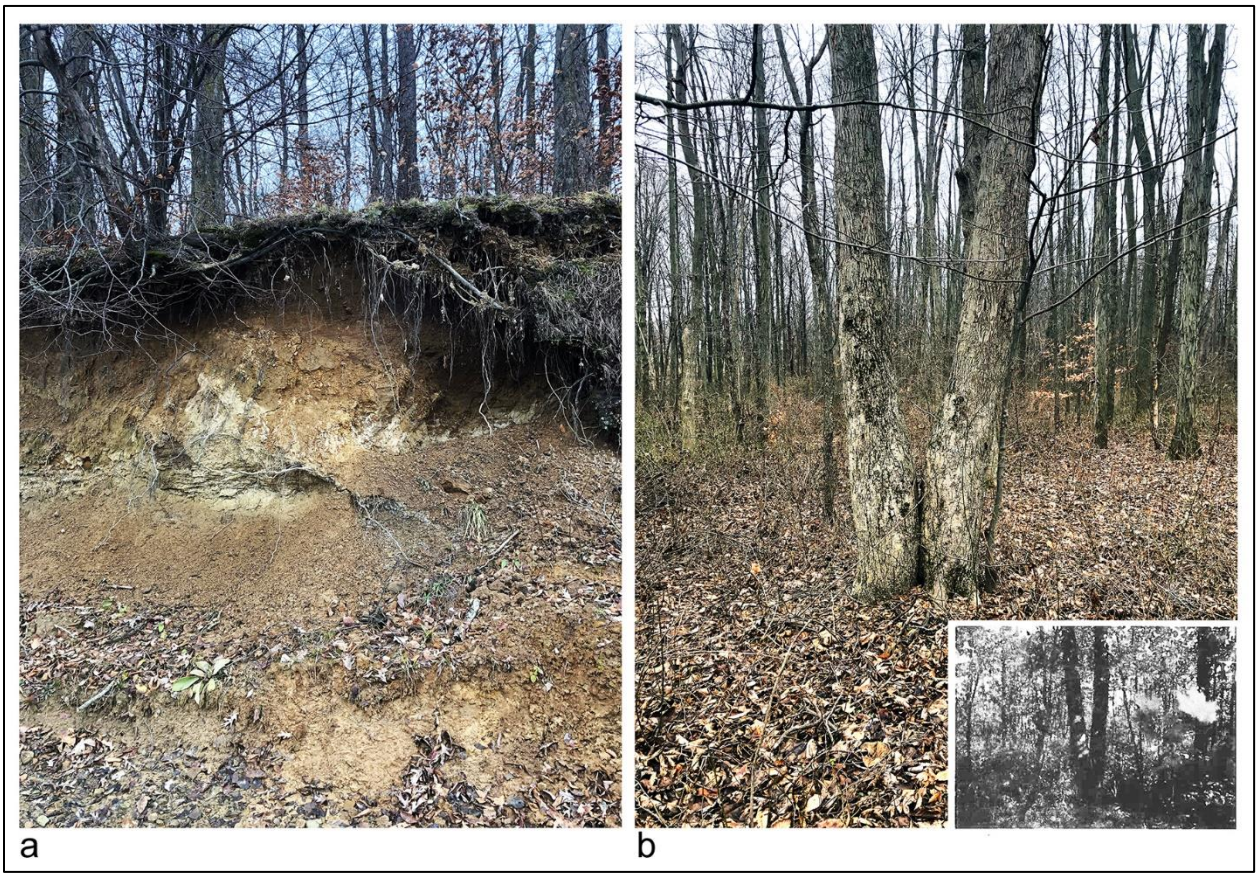


**Figure 7. Site 33-PO-6, The Island Creek Burial Site: a. view of eroding bluff face below the site; b. location of original datum (double tree) used by Church 1990** (inset is the original photo from the Church 1990 publication)**.**

## Discussion

Given the rich archaeological history of the area around the Berlin Lake reservoir (Church 1990; Rue et al. 1987), before our survey commenced we anticipated much different archaeological results than what ultimately was discovered. We expected much richer and much more frequent archaeological find-spots, and more than one site *in situ* (i.e. site A-18). It is entirely possible that our coastal survey results are "real", that is, our overall negative result is a true reflection of a lack of archaeological resources along the coastal perimeter of the reservoir. However, prodigious and regular illegal collection of artifacts and looting of sites may also potentially explain the contrast between our results and previous work. The Berlin Lake coast is highly traversed by people who are hiking, fishing, boating, and camping, among other activities, providing ample opportunity for site discovery and knowledge of sites to spread. Archaeological sites may thus be perpetually "picked clean" by collectors, in which case our results would be a

"false negative." One potential solution to this problem would be to educate local communities around Berlin Lake about the harm to history and archaeology that comes from illegal collection, and about the legal penalties that result from such activity. Other solutions include increased patrolling and personnel, dedicated to protecting sites in and around the reservoir. After a sustained effort at one or more of these solutions, we recommend that the Berlin Lake coast be surveyed again to assess the presence of cultural resources. Only then can we accurately and precisely determine the danger to archaeological sites due to natural, erosional processes along the coast.

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