

Island Archaeology in Cape Porpoise, Maine

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Cover Photograph: : Facing south. Archaeologist returns to mainland before incoming tide. Image: Elizabeth Kelley, Senior Artist, Cape Porpoise Archaeological Alliance.

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Island Archaeology in Cape Porpoise, Maine

The Cape Porpoise Archaeological Alliance (CPAA) was formed in 2016 as a professionally led citizen science initiative focused on the Archipelago of Cape Porpoise, Maine, USA. Due to the preservation of these islands, this coastal landscape is well-preserved which is unusual in the otherwise highly developed coast of southern Maine. Research conducted by CPAA archaeologists suggests at least 8,000 years of human activity. Global sea level rise is threatening the archaeology of these islands. It is therefore the mission of CPAA to document and contextualize the archaeology of the dynamic tidescap

Archaeological research in the archipelago of Cape Porpoise since 2016 has resulted in evidence that suggests 8,000 years of human occupation. On Stage, Little Stage and Trott Islands, rock features such as building footings and water wells as well as various artifacts are evidence that Historic Period (after Europeans arrived) land use by European Americans occurred during the seventeenth, eighteenth, and nineteenth centuries. Lithic flakes and projectile points reveal the island and associated intertidal zone were occupied by Native Americans from the Middle Archaic Period to the Contact Period, or about 8,000 to 400 years before present (BP). Neville and Stark style projectile points, diagnostic of the Middle Archaic Period in the region, have been found on the shores of the islands and in the intertidal zone between them (Dincauze 1976, Spahr et al. 2020) (see Image 1). The landscape during the Archaic period was very



Image 1. Areas of research since 2016. “The twelve islands of the Cape Porpoise Archipelago are an unusually well-preserved archaeological landscape along the heavily developed coast of southern Maine. A small archipelago of the sort that are often understudied archaeologically, in large part due to logistical difficulties” (Fitzpatrick et al. 2016; Spahr et al. 2020). Photo compilation: Al Hoisinger.

different than it is today, thus these artifacts probably represent a drowned or eroded Archaic Period site now located between Stage Island, Redin Island, and the mainland, though in the Archaic this setting would have been hills overlooking a river valley (Spahr et. al. 2020).

With this information, a multi-phased archaeological survey was conducted with fieldwork occurring every year from 2016 to present. Additional Historic Period stone features and artifacts, the probable remains of a Pre-Contact (before Europeans and Native Americans encountered each other) fish weir complex, and the remains of a dugout canoe and paddle, both radiocarbon dated to approximately 700 years BP, were located and their proveniences documented (see Image 2). The locations of these objects provide new information as to the Pre-Contact and Early Historic Period occupation and use of Stage Island Harbor.

While conducting an intertidal survey in 2017, two linear features of aligned rocks (see Images 3 and 4) were located by archaeologists on the west side of Redin Island. The shape and geographic location are similar to an Algonquin weir in Virginia illustrated by Governor John White circa 1585 and described by shipmate and fellow explorer Thomas Hariot in his 1590 publication *A Brief and True Report of the New Found Land of Virginia* (Spahr 2019).

In another surface survey of the intertidal area between Redin Island and the mainland in November of 2018, a large portion of worked wood was identified in the intertidal zone, recently exposed by tidal processes. This was consistent in size and shape to a partially exposed gunwale of a dugout canoe (see Image 5). CPAA monitored the area throughout the winter of 2018–2019, as strong winter tides shifted coastal sands and further exposed the area; this prehistoric wooden object increasingly appeared to be a dugout canoe. Because it was rapidly deteriorating due to tidal action and barnacle encrustation, CPAA archaeologists elected to attempt to excavate and conserve the canoe. In June of 2019, they along with the University of New Brunswick/University of New England Coastal Archaeological Field School excavated the canoe and begin conservation (Spahr et al. 2020) (see Images 6, 7 and 8).



Image 2. Artifacts recovered during archaeological research suggest Native American peoples occupied the coastal landscape of Cape Porpoise since the Middle Archaic Period, or for about 8,000 years. These artifacts are “diagnostic,” meaning their age is determined by shape, size, and style. Both Middle Archaic Period and Woodland/Ceramic Period (1500 BP – 500 BP) artifacts are shown here. Image: Tim Spahr

Test pit surveys on Stage Island were initiated in 2016, and produced a small collection of quartz debitage and some beach cobble hammerstones. More notably, test pit surveys of Redin Island that began in 2019 identified an intact subsurface with cultural deposits containing Pre-Contact artifacts. These artifacts were sealed beneath 70 centimeters of beach sands. After expanding to a unit excavation, it became apparent that this subsurface level represented a former living surface (see Images 9 and 10).

The buried surface yielded a broken projectile point (Kineo rhyolite) as well as a selection of lithic debitage of a variety of materials including variations of chert: Pennsylvania jasper (otherwise known as Vera Cruz chert), a red chert (occasionally white banded) visually and



Image 3. Redin Island linear rock features. Note author for scale. This feature consists of two assemblages of individual rocks arranged in straight lines that have distinct 90-degree angles. There are equal distances between the rocks that appear to have been stepped-off before being placed. Drone image: Aaron Shuffleburg.

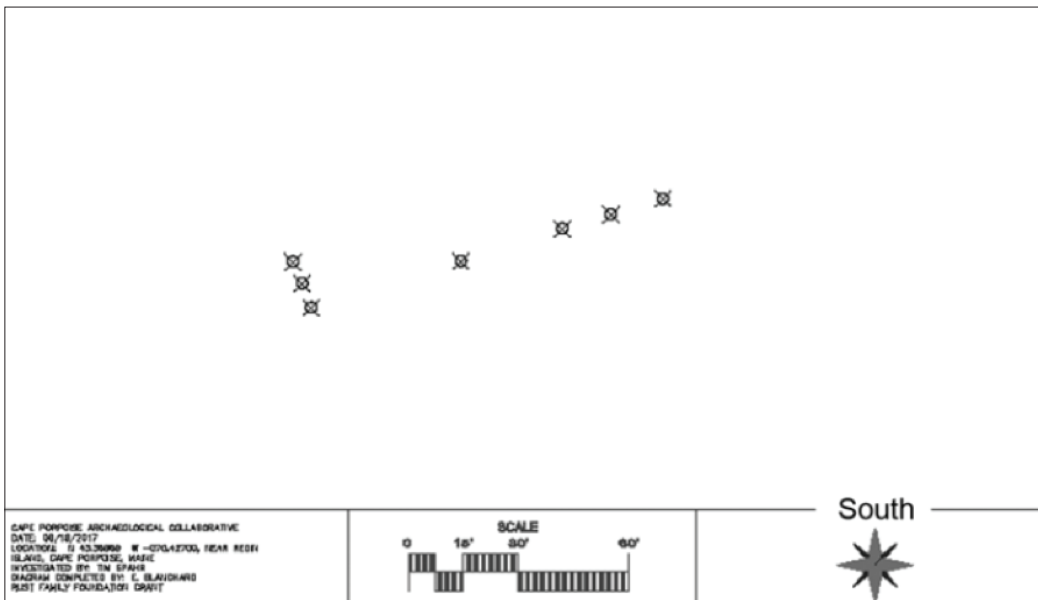


Image 4. Schematic plan view of the left-hand rock alignment seen in the above figure. Note evenly spaced rocks and right angle. View towards the south. Image: Eric Blanchard.

textually consistent with Munsungun chert, and black and gray variants of chert consistent with Maine and northeast sources such as those in northern New York State, the Champlain Valley and eastern Maine. The raw materials and non-diagnostic point fragment are suggestive of a Middle to Late Woodland/Ceramic period (1500 BP–500 BP) occupation (Spahr and Hudgell 2019) (see Image 11). This information was referred to the Maine Historic Preservation Commission and subsequently designated site 005.024 ME.

Additional excavation proceeded on a metric grid established off of the initial test unit and resulted in the identification of further site deposits including additional lithic debris as well as pottery fragments, calcined bone, and unburnt bone preserved in clam shell deposits. Dr. Arthur Spiess of the Maine Historic Preservation Commission identified the calcined bone as *Odocoileus virginianus* (White-tailed Deer) while the unburnt bones were identified as the metacarpal and mandible of a small dog, and the tooth also of a small dog.

The Cape Porpoise Archaeological Alliance (CPAA), established in 2016, is a professionally led citizen science initiative focused on the Archipelago of Cape Porpoise, Maine, which has seen at least 8,000 years of human activity. In partnership with the Kennebunkport Conservation Trust and the Brick Store Museum, CPAA archaeologists seek to document and contextualize the archaeology of the islands and intertidal zone threatened by global sea level rise. The urgency of climate change makes citizen scientist engagement vital to rescuing the archaeology of the dynamic tidescap before it is lost.



Image 5. Remains of a 700-year-old dugout canoe first observed in the fall of 2018 during an intertidal survey. Image: Tim Spahr.



Image 6. A sample of wood from the canoe was collected and identified as yellow birch, *Betula alleghaniensis* (N. Asch Sidell, archaeobotanical consulting correspondence to Arthur Spiess, January 13, 2019). This was subsequently submitted for radiocarbon assay, producing a date of roughly AD 1280 to 1400. This date confirms that this is the oldest archaeologically known watercraft from the area (Spahr et. al 2020: 2). Image: Elizabeth Kelley.



Image 7. Prior to the canoe entering a 1.5-year conservation process, it was photographed and drawn to scale as it was found in situ. Image: Gemma Jayne Hudgell.

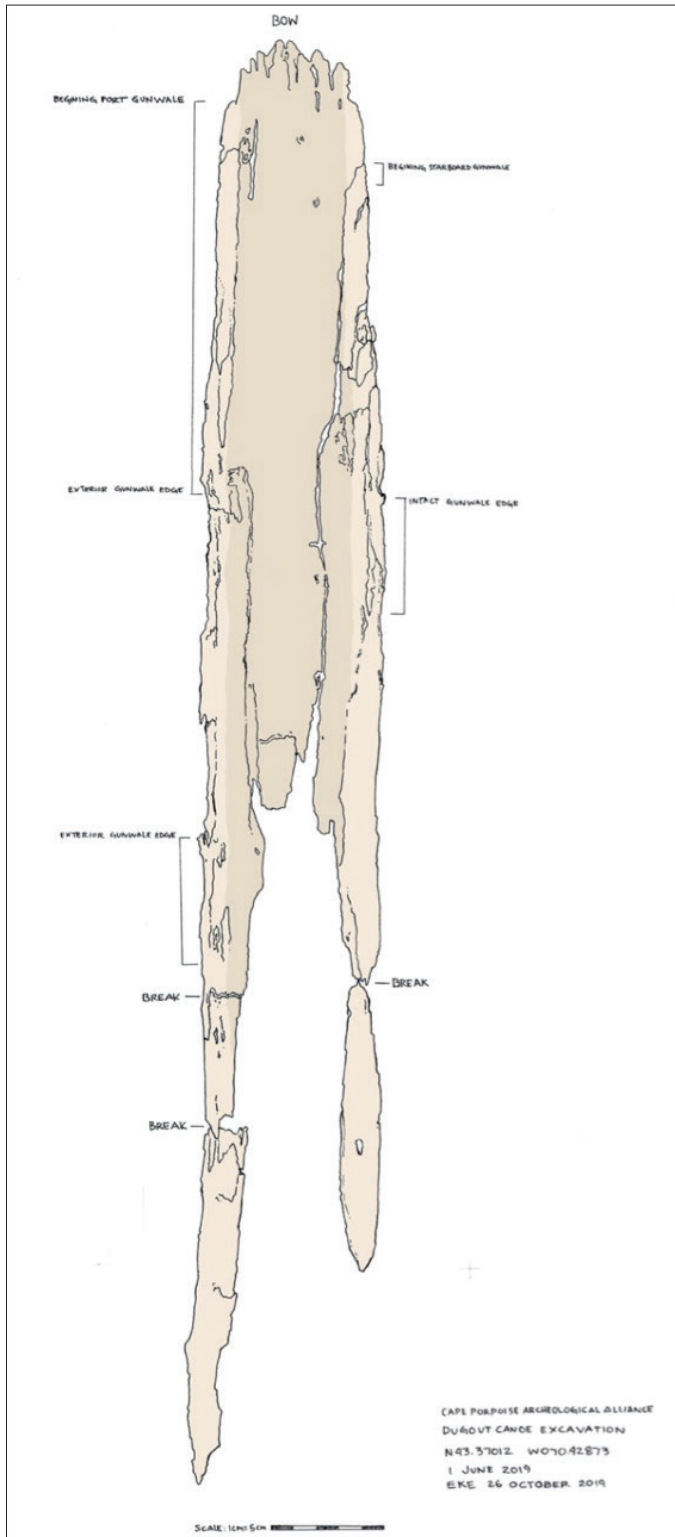


Image 8. Due to the vulnerability of the canoe and concern that it would not survive conservation, a technical drawing was completed as it was found in situ. Drawing: Elizabeth Kelley.



Image 9. A buried cultural layer 70 centimeters below wind-blown sand and storm surge layers. Image: Elizabeth Kelley.



Image 10. A metric grid was established off the original unit with coordinates running north-south. The original unit was expanded, and test pit excavation on-grid indicates the site continues in various directions around the original unit. Image: Elizabeth Kelley.



Image 11. In interpreting archaeological research conducted in the intertidal zone and on Redin Island, CPAA's Senior Artist produced the above drawing depicting the landscape as it might have looked during the Woodland/Ceramic period. The artists' advantage point was from the canoe excavation site, facing north with the weir site and Redin Island to the right. Stage Island Harbor, Stage, and Little Stage Islands are in the background. This pictorial reconstruction underwent peer review including that from the Historic Preservation Officer of the Penobscot Indian Nation. Drawing by Elizabeth Kelley. Brick Store Museum permanent collection.

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