

PROPOSAL

Reconnaissance Archaeological Survey

for a collaborative

Boston Harbor Islands Archaeological Climate Action Plan

in

Boston, Hingham, Weymouth, Quincy, Hull, and Winthrop, MA



2023

Joseph Bagley, Elizabeth Solomon, Holly Herbster, and Zoe Hughes

City of Boston
Massachusetts Tribe at Ponkapoag
Public Archaeology Laboratory, Inc.
Boston University

950 CMR: DEPARTMENT OF THE STATE SECRETARY

APPENDIX B

COMMONWEALTH OF MASSACHUSETTS

SECRETARY OF STATE: MASSACHUSETTS HISTORICAL COMMISSION

PERMIT APPLICATION: ARCHAEOLOGICAL FIELD INVESTIGATION

1. General Information

Pursuant to Section 27 (c) of Chapter 9 of the General Laws and according to the regulations outlined in 950 CMR 70.00, a permit to conduct a field investigation is hereby requested.

1. Name(s): Joseph Bagley, Elizabeth Solomon, Holly Herbster, and Zoe Hughes
2. Institution City of Boston Archaeology Program (lead), Massachusetts Tribe at Ponkapoag, PAL, inc., and Boston University
Address: 201 Rivermoor St.
Boston, MA 02132

3. Project Location: *See attached proposal*

4. Town(s): Boston, Hingham, Weymouth, Quincy, Hull, and Winthrop

5. Attach a copy of a USGS quadrangle with the project area clearly marked.

See attached

6. Property Owner(s): The Department of Conservation and Recreation (DCR), The City of Boston, the Town of Hingham, The U.S. Coast Guard, The Massachusetts Water Resources Authority (MWRA), Thompson Island Outward Bound Education Center, the Town of Winthrop

7. The applicant affirms that the owner has been notified and has agreed that the applicant may perform the proposed field investigation.

8. The proposed field investigation is for a(n):

Reconnaissance Archaeological Survey

9. Professional Qualifications

1. Attach a personal chart and project schedule as described in 950CMR70.11(b)

a. Personnel

Principal Investigator(s):	Joseph Bagley, Elizabeth Solomon, Holly Herbster, and Zoe Hughes
Project Archaeologist(s):	Joseph Bagley, Holly Herbster
Field Crew:	PAL staff archaeologists, Massachusetts People, City of Boston Archaeology Team

b. Schedule

Research: Spring and Summer 2023
 Fieldwork: Summer and Fall 2023
 Laboratory: Fall and Winter 2023
 Report: Winter 2023/24

2. Include copies of Curriculum vitae of key personnel (unless already on file with the State Archaeologist).

C. Research Design

1. Attach a narrative description of the proposed Research Design according to the requirements of 950 CMR 70.11.
2. The Applicant agrees to perform the field investigations according to the standards outlined in 950 CMR 70.13.
3. The Applicant agrees to submit a Summary Report, prepared according to the standards outline in 950 CMR 70.14 by: September 2024
4. The Specimens recovered during performance of the proposed field investigation will be curated at:

City Archaeology Laboratory
 201 Rivermoor St.
 Boston, MA 02132

SIGNATURE _____	_____
APPLICANT- Joseph Bagley	DATE
SIGNATURE _____	_____
APPLICANT- Elizabeth Solomon	DATE
SIGNATURE _____	_____
APPLICANT- Holly Herbster	DATE
SIGNATURE _____	_____
APPLICANT- Zoe Hughes	DATE

Reconnaissance Archaeological Survey for a collaborative Boston Harbor Islands Archaeological Climate Action Plan in Boston, Hingham, Weymouth, Quincy, Hull, and Winthrop, MA

Introduction

This is a proposal for a State Archaeological Permit to conduct a reconnaissance archaeological survey of 25 Boston Harbor Islands (Islands) to assess the risk to archaeological sites and cultural spaces due to erosion caused by climate change (Figure 1).

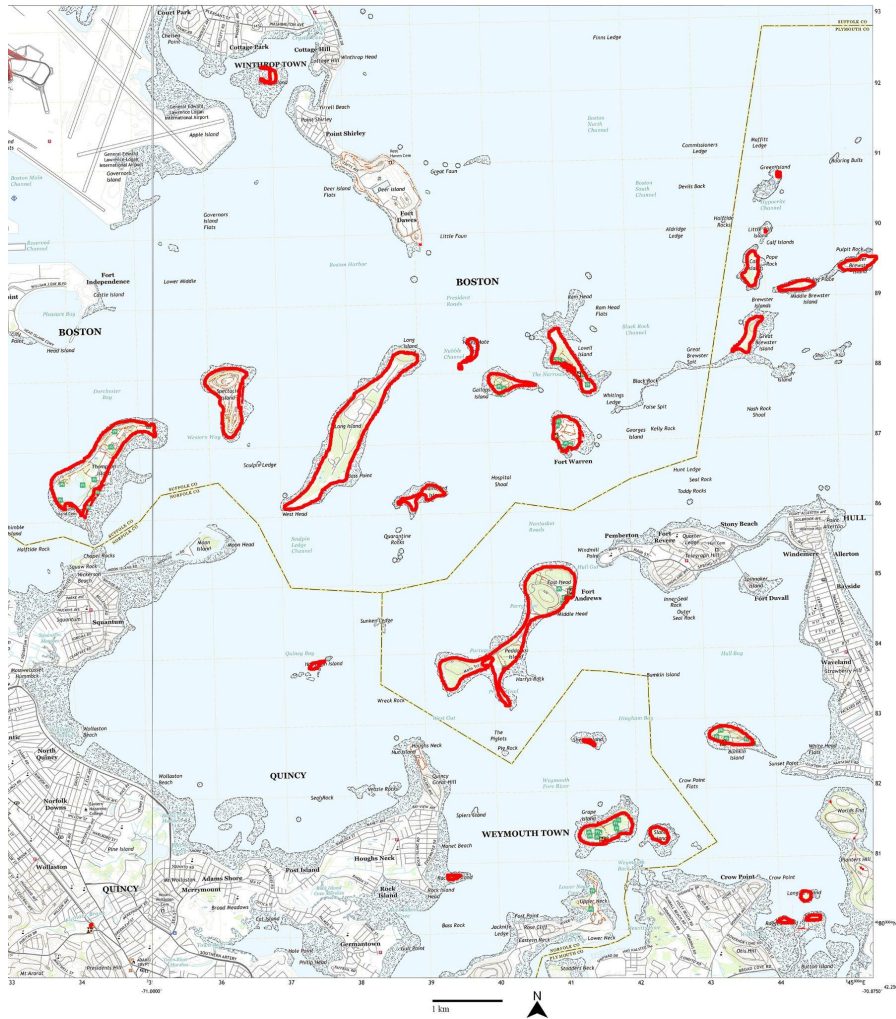


Figure 1- Map of project area on a USGS Boston South and Hull Map. Project area is the shoreline of all islands outlined in red.

This project represents a collaborative approach to a complex and significant cultural landscape. The project team of archaeologists, tribal members, and geomorphologists will wor

There are dozens of documented historical and ancient Native archaeological sites on the Islands, and many areas that may have archaeological sites, but have never been professionally surveyed. There is ongoing erosion on these islands, which has already significantly impacted these sites and will continue to do so at an increasing rate due to climate change.

To date, there has never been a systematic archaeological reconnaissance survey that combines the known geomorphological data of the Islands and Harbor with known archaeological data and direct Native community involvement. This project will conduct this survey in order to create a prioritized list of the most at risk known sites and unsurveyed archaeologically sensitive areas.

This project will produce this prioritized list of mitigation projects, estimated budgets and scopes of work for mitigation, and a set of best practices, terminology, and collaborative frameworks through which future Boston Harbor Islands archaeological surveys should be conducted. This collective result will be known as the Boston Harbor Islands Archaeological Climate Action Plan (Plan).

The project team consists of four co-equal Principal Investigators who will collaboratively share responsibilities for project design and execution. This team consists of:

- Joseph Bagley, City Archaeologist of Boston
- Elizabeth Solomon, Massachusetts Tribe at Ponkapoag
- Holly Herbster, Principal Investigator, Public Archaeology Lab, Inc.
- Dr. Zoe Hughes, Geomorphologist, Boston University Department of Earth Sciences

This project is supported by a team of project advisors including:

- Jonathan Patton, Archaeologist, Department of Conservation and Recreation
- Marc Albert, Director of Natural Resource Partnerships for the National Parks of Boston, National Park Service
- Dr. Catherine West, Research Associate Professor of Archaeology, Boston University
- Melissa Hurtado, Archaeologist, National Park Service
- Amira Madison, Supporting Indigenous Communities Fellow, City of Boston, and Councilwoman on Tribal Council, Wampanoag Tribe of Gay Head Aquinnah

The following islands and towns are included in this scope of work:

1. Bumpkin Island (Hingham)
2. Button Island (Hingham)
3. Calf Island (Boston)
4. Gallops Island (Boston)
5. Georges Island (Boston)
6. Grape Island (Weymouth)
7. Great Brewster Island (Boston)

8. Green Island (Boston)
9. Hangman Island (Quincy)
10. Langlee Island (Hingham)
11. Little Calf Island (Boston)
12. Long Island (Boston)
13. Lovells Island (Boston)
14. Middle Brewster Island (Boston)
15. Outer Brewster Island (Boston)
16. Peddocks Island (Hull)
17. Raccoon Island (Quincy)
18. Ragged Island (Hingham)
19. Rainsford Island (Boston)
20. Sarah Island (Hingham)
21. Sheep Island (Weymouth)
22. Slate Island (Weymouth)
23. Snake Island (Winthrop)
24. Spectacle Island (Boston)
25. Thompson Island (Boston)

Research Design

Statement of Purpose

This process will produce this prioritized list of mitigation projects, estimated budgets and scopes of work for mitigation, and a set of best practices, terminology, and collaborative frameworks through which future Boston Harbor Islands archaeological surveys should be conducted. This will be done as a collaborative project between archaeologists, geomorphologists, and members of the Massachusetts Tribe at Ponkapoag with co-equal leadership roles in the project.

This project has seven primary goals:

GOAL 1: Gather existing data on known site boundaries and areas that have not been surveyed on the Islands

GOAL 2: Determine the relative risk of erosion to land across the Islands

GOAL 3: Compile erosion and site data to determine which sites and unsurveyed areas are at greatest risk of erosion

GOAL 4: Collaboratively determine what aspects of a site increases or decreases its significance and need for mitigation when multiple sites are at equal risk factor

GOAL 5: Collaboratively determine best practices for archaeological mitigation of eroding sites

GOAL 6: To produce a document that prioritizes the most at-risk archaeological sites and unsurveyed areas along with estimated budgets based on Goal 5 so that managers of the islands can independently pursue mitigation efforts

GOAL 7: To produce a new best practices document for Native collaborative archaeology in Boston, including field and laboratory recommendations, which will be used for future Boston Harbor and City of Boston projects and aims to be a guide that can be used throughout the region.

Archaeologists and Massachusetts People will collaboratively conduct background research of relevant archaeological data including site locations, survey areas, reports, and walkover surveys to confirm sites are still present. This site and survey location data will be turned over to Zoe Hughes for the creation of a GIS archaeological base map.

The project team, including archaeologists, Native people, and geomorphologists will collaboratively determine what cultural factors and Tribal priorities and concerns increase or decrease the “rank” of an archaeological site on the Boston Harbor Islands prioritized in the Plan. This prioritization will serve as one of a series of project recommended best practices.

These project best practices will be one of the more unique aspects of this project, and it is our goal that these best practices will have long-serving impacts on how archaeology on Native sites is conducted in the future both in Boston Harbor and beyond.

The risk-ranking will identify sites for archaeological mitigation best practices with an associated approximate budget for mitigation at each site or unsurveyed area. The goal of this method and budget component will allow island managers and partners to be able to appropriately budget for archaeological mitigation recommended by the Plan and to know the technical and community requirements of these mitigations. All fieldwork and survey methods will conform to the language and definitions of 950 CMR 70 of the Code of Massachusetts Regulations under a State Archaeologist’s Permit.

PAL will summarize existing flora and pollen archaeological data to be used in a cultural landscape component of the report in consultation with the project team. This plan component will recommend appropriate native or culturally-significant plants to be used in future stabilization plantings at sites of archaeological excavation. These plantings will be done by a separate contractor using CPA funding.

Historical archaeological sites will be included in the list of prioritized archaeological mitigation projects and surveys; however, these surveys will be conducted using established historical archaeology survey methods and practices, unless they are also on Native archaeological sites or the Native community requests alternative survey techniques.

Additional project best practices will be defined in consultation with the Massachusetts Tribe and may include: A review of common archaeological terminology including but not limited to “artifact,” “site,” “positive,” “negative,” “dig,” “midden,” and other words to ensure that the Plan and other projects in the Harbor Islands uses culturally sensitive terminology; a list of contacts, and contact methodology, and consultation budgets, to ensure future projects are inclusive of Native community review, participation, and collaborative oversight; a list of best practices for curation of materials recovered during the archaeological surveys that follow this plan; and other practices that come out of this inclusive community archaeology project.

Archaeologists working on the project will address the concerns and requests of the Native community as co-equal to the concerns and requests of the other project team members in a collaborative manner.

Proposed Impacts

This project does not address proposed impacts; however, there is far greater loss to archaeological sites on Boston Harbor due to the ongoing impacts of climate change than development or other modifications.

This project will treat erosion as the significant risk that it is to Massachusetts archaeological site integrity, filling a “gap” in the review process. Archaeological mitigation is often triggered by proposed development or modification of spaces, but erosion and loss due to climate change are rarely triggers for archaeological mitigation allowing for unmitigated loss of coastal sites over time.

Project area

The project area consists of the shorelines and immediate upland areas of the 25 islands previously mentioned. Existing conditions range from rocky outcrops, beaches (both sand and cobble), cliffs, walls (stone and otherwise), and other landforms.

While the entire shoreline will be included in this project, the focus will be on the areas of shoreline where erosion is occurring or may soon occur. This project will not only map these areas, but show the relative rates of erosion in these areas as erosion is not consistent in all areas of the harbor or even within spans of individual shorelines.

Historical Background

The Boston Harbor Islands have only been islands for approximately 3,000 years. For over 12,000 years, the islands have witnessed massive changes in ecology, population, cultures, and

climate, and today they remain the most intact archaeological landscape in Boston and many of the other towns in which they reside.

Ancient Native History

One of the key goals of this project will be to work towards integrating the perspectives of Native people and archaeologists in the story of the Harbor Islands. This is ongoing, and will be represented in the final report's ancient Native history section, but because this is not yet complete, this historical narrative will be based primarily on the results of archaeological surveys and represents an archaeological-centric view of the past, with little or no consultation or collaboration with local Native perspectives or stories contributing to this narrative.

The earliest human occupation in southern New England (12,000-10,000 years before present [B.P.]) followed the retreat of thick glacial ice between 21,000 and 16,000 years ago. The people who utilized this newly formed landscape are collectively referred to as PaleoIndians. The timing of the initial population of the Eastern Seaboard is heavily debated by archeologists today based on the recent identification of apparent cultural strata and artifacts predating the PaleoIndian "Clovis Culture" or fluted point tradition that is one of the characteristic tool types for this period. In southern New England, the first occupation appears to have occurred roughly 12,500 years ago. Research utilizing fossil pollen from the region demonstrates that tundra-like environmental conditions followed the retreat of the ice sheet.

The first people to occupy the region saw a vastly different landscape than that present today. Rather than a well-protected harbor dotted with islands, indigenous people would have encountered a broad low plain dotted with elongated knolls and ridges. The coast would have been between 10 and 15 kilometers to the northeast of the present-day Harbor shoreline and while river and stream drainages were likely present the main river channels that feed into the Harbor today were not yet formed. Although no PaleoIndian sites or deposits have been identified on the Boston Harbor Islands or the surrounding shoreline to date, there is certainly the potential for these sites to be present on portions of the present-day or on former land surfaces that were submerged by rising sea levels. It is also possible that sites dating to these early periods have been lost to erosion, since this pattern has been documented at archeological sites that are much more recent in origin.

The Early Archaic Period (10,000-8,000 B.P.) was also characterized by changing environments and landscapes as sea levels began a slow rise and inundated coastal plain areas that had formerly been dry land. The climate became warmer and drier, and the ground was dominated by a mixed pine-hardwood forest. Like earlier PaleoIndian depositions, intact archeological sites dating to the Early Archaic Period are relatively rare in southern New England, and the social and technological adaptations devised by Native American groups during this period are not well understood. The locations of Early Archaic period sites across southern New England indicates

that groups of people moved within established territories focused around river and lake systems and other physiographic landmarks (Nicholas 1987; Tuck 1974). These types of wetland resources would have provided an array of plant and animal species as well as serving as transportation systems linking large territories.

The lithic technology of the Early Archaic Period reflects a more diversified subsistence strategy, and includes unifacial edge tools, cores, flakes, hammerstones, milling slabs, and notched pebble sinkers, which indicate an increased utilization of plant and fish resources (Robinson 1992). Corner-notched, stemmed, and bifurcate-based points serve as the diagnostic artifact class for the period. These stone tool assemblages are typically made from local lithic sources, although exceptions including the use of non-local cherts have been identified in some assemblages.

Limited archeological data on Early Archaic Period settlement and land use has been identified in the metropolitan Boston area, and most deposits are known through isolated diagnostic bifurcate base projectile points recovered at multi-component sites that were also occupied in more recent pre-contact periods. The identification of a diagnostic Early Archaic bifurcate base projectile point at the HL-11 Site (19-SU-39) on Long Island is significant and may represent the earliest documented use of the Boston Harbor Islands by Native Americans (Luedtke 1984). This projectile point was found as an isolated artifact within a site that also contained possible Middle Archaic and Late Archaic, Middle Woodland, and Late Woodland components (see below). Given a lack of additional deposits or radiocarbon dates, it is difficult to determine if the bifurcate point was deposited approximately 8,000 years ago or if the point was curated or recycled and brought to the site by a later occupant.

The Middle Archaic Period (8,000-6,000 B.P.) is marked by the end of the warm dry period and the return to wetter conditions, both in terms of increasing annual precipitation and soil moisture levels, suggesting cooler temperatures by ca. 6000 B.P. in the Northeast. The environmental changes that occurred during this period included the gradual inundation of the Boston Basin along the developing Mystic, Charles, and Neponset River systems and the early formation of a partially protected harbor. While shoreline conditions did not stabilize at approximately current levels until approximately 4,000 years ago, the people who utilized the Boston Harbor area in the Middle Archaic Period may have seen several large islands very close to the shoreline and made use of deepening river estuaries.

Dincauze's 1974 survey identified 29 sites with Middle Archaic components in the greater Boston area. These sites were identified in three general environmental settings: adjacent to rivers, near lakes and marshes, or adjacent to bogs (Dincauze 1974:45). Three possible Middle Archaic components have been identified on the Harbor Islands, one site has been identified on World's End, and four sites have been documented along the southern margins of the Harbor.

The available data on Late/Transitional Archaic Period (6,000-2,500 B.P.) sites are much more extensive than for previous periods. Not only are the relative densities of known sites much higher, but also the distribution of these sites indicates intensive exploitation of marine and terrestrial coastal zone resources (Braun 1974; Lavin 1988). The estuaries ringing Boston Harbor were nearing their present-day development during this period and provided a mixture of fresh and saltwater plant and animal resources that were certainly attractive to Native residents. The high density of Late Archaic sites in a range of habitats, coupled with the wide variety of artifact types attributed to this time period is suggestive of a large population exploiting an extremely broad spectrum of resources (Dincauze 1975).

Cultural materials recovered from archeological deposits dating from all three of the Late/Transitional Archaic Period traditions have been reported from the Boston Harbor drainage and are especially common along the Charles River estuary (Dincauze 1974; MHC 1982). In comparison to the single Early Archaic deposit and four Middle Archaic sites identified on the Harbor Islands, at least 16 sites or site components dating to the Late Archaic Period have been identified within this same zone.

In southeastern New England, the Woodland Period is defined by the manufacture and use of clay vessels, by the introduction of horticulture or crop-raising, and by an increasing trend toward semi-permanent or permanent settlement. Woodland Period coastal sites are also often characterized by shell midden deposits that are often highly visible indicators, especially in eroded or sandy areas. Individual Woodland Period temporal components (e.g., Early, Middle, or Late) are often difficult to identify given the similarity of cultural material types and the relative ubiquity of shell midden features throughout over more than one Woodland period. Identification is also hampered by the repeated use of many site areas throughout the entire Woodland Period. Diagnostic projectiles, specific pottery manufacture techniques and designs, and radiocarbon dates are the most reliable indicators of particular Early, Middle, or Late Woodland components. In the absence of specific diagnostic artifacts, many identified deposits are classified simply as "Woodland". This trend is apparent in the Boston Harbor Islands area, where at least a dozen sites cannot be associated with a specific Woodland temporal period.

Settlement patterns and land use during the Early Woodland Period (3,000-1,500 B.P.) apparently were characterized by the limited use of upland areas, and more intensive use of coastal and estuarine resources and settlement locations. As a result, large shell midden deposits often serve as hallmarks of Woodland Period archeological sites in coastal and near-interior areas. During the Early Woodland Period and first part of the Middle Woodland Period a major transition in settlement/subsistence patterns is identifiable in the archeological deposits within the Harbor district. The distribution of some diagnostic projectile point types (including Rossville and Meadowood styles) indicates continued use of the large estuary head and pond base camps in the Boston Basin region (Dincauze 1974). With the slowing of sea level rise and stabilization of shorelines after ca. 2500 B.P., settlement appears to have intensified in the coastal zone around

Boston Harbor (Dincauze 1974:50). Four potential Early Woodland sites have been identified on the Harbor Islands on Grape, Thompson, and Spectacle islands.

Middle Woodland (1,650- 1,000 B.P.) archeological sites seem to continue the focus on coastal resource adaptation. Artifacts that are considered to be diagnostic of this period include Jack's Reef Pentagonal, Jack's Reef Corner-Notched, and Fox Creek projectile points. More elaborate decorative motifs on Native American ceramics such as rocker and dentate-stamped patterns are also characteristic of the Middle Woodland Period. Subsistence patterns appear to be focused on the coast but hunting and gathering remained important sources of food. The late Middle Woodland Period is also marked by the addition of horticulture to the traditional subsistence practices of hunting and gathering. The earliest evidence of domesticated agricultural products in southern New England dates from around AD 1000 but is not well documented in the Boston Basin (Bendremer and Dewar 1994). As many as eight sites identified on Thompson Island may contain Middle Woodland assemblages (Luedtke 1996). Middle Woodland components have also been identified on Bumpkin, Grape, Long, and Peddocks islands.

The Late Woodland Period (1,000-450 B.P.) is associated with an increase in ceramic production following improvements in tempering and firing technology. Traditional archeological interpretations suggest that population growth, increased sedentism, and village formation followed the wide-spread adoption of horticulture during this period. Collective settlements such as villages, however, could have occurred independently of the adoption of horticulture, especially in coastal or estuarine environments that support a reliable fish and shellfish subsistence base (McBride and Dewar 1987). Others believe that village formation and intensive maize horticulture were essentially riverine developments during the Late Woodland Period (Bendremer 1993; Bendremer and Dewar 1993).

Sites appear more commonly on the outer Harbor islands for the first time during the Late Woodland Period. Luedtke (1975, 1980) linked the use of these outer islands, which are exposed to sea swells because they are located outside the protected Harbor, as most accessible by a stable dugout canoe, which may not have been in use in earlier periods. These outer island sites also contain higher densities of fish bone than the inner Harbor sites and there is more mussel shell than soft-shell clam shell; clam flats are not as common on the outer islands. Complex Late Woodland sites have been documented and investigated on Calf and Spectacle islands; sites have also been identified on Thompsons, Long, Gallops, and Grape islands.

Post-Contact History

Archaeological information suggests that the lifeways of Native people were not immediately or dramatically altered at the outset of the Contact Period (A.D. 1500-1620), when sporadic contact with European fishing fleets and explorers began in the sixteenth century. Non-Native visitors to the Massachusetts shore would have likely encountered large semi-permanent base camps

populated by kin-related groups, as well as smaller satellite hunting and fishing camps and special use areas. Large groups may have gathered together at certain times of the year for collective resource gathering activities as well as for social and ceremonial functions.

Some of the first to document their encounters with New England's Native American groups were Bartholomew Gosnold (1602), Samuel Champlain (1604-1606), and John Smith (1614). These men and others rarely ventured into the interior, and their impressions of Native people are limited to visual observations and brief interactions to trade goods. The accounts of these travelers and modern ethnohistorical sources attest to the extensive trade network in place during this period (Bragdon 1996; Brassler 1978:83; Kerr 1999; Loren 2008; Snow 1980:56; Winthrop 1996:224). European trade goods were circulating within and through Native American groups in New England especially during the early seventeenth century. The identification of trade goods including copper kettles, iron axes and hoes, glass beads, and fabric and cloth in archaeological deposits that also contain traditional pre-contact materials (e.g., stone tools and Native American-manufactured pottery) is usually considered to be a diagnostic indicator of a Contact Period site.

The Winthrop peninsula on the northern edge of Boston Harbor has been identified as a core area of Contact Period Native American settlement and ceremonialism based on the identification of numerous graves and the presence of a Native village described in nineteenth- and early-twentieth-century historical sources. Contact Period burials were also present in the Squantum section of Quincy, at Commercial Point in Dorchester, and at the Atlantic Hill Site in Hull.

The Native people in the area that would eventually become Boston and its environs were the Massachusetts; the Pokanoket lived to the south in what became Plymouth Colony and Cape Cod; and the Nipmuc lived to the west between the Massachusetts Bay area and present-day Worcester. Collectively, these groups and those to the south, north and west were known as the Algonquin or Algonkian people or Ninnimissinouk (Bragdon 1996; Gookin 1970; Trumbull 1903; Williams 1973).

Early-seventeenth century visitors documented several epidemics that decimated southern New England's Native population (Bragdon 1996:25-26; Cogley 1999:32). The first epidemic began around 1616, lasted through 1619, and appears to have originated in Massachusetts Bay. A second major epidemic occurred around 1633 in the Connecticut River region. While figures for this period are uncertain, it has been estimated that 90,000 Native people occupied southern New England in 1610, and that as much as 90 percent of this population died from epidemic diseases by 1640 (Cook 1976; Cronon 1983; Spiess and Speiss 1987). The mortality rate was especially high at and near the coast where Native people and colonists had earlier and more frequent contact. The Native people of the Massachusetts Bay area who had contact with European fishing fleets were likely among the most affected by these epidemics.

The staggering loss of Native lives over the 1616-1633 period coincided with the establishment of the first major Euro-American settlements in southern New England at the beginning of the First Settlement Period (1620-1675). As more and more settlers streamed into Boston Harbor, the colonial administrators of the Massachusetts General Court had two interrelated concerns with

regard to the area's Native American inhabitants: preventing hostile attacks and negotiating land transfers. Due to the prior epidemics of the seventeenth century, most of the coastal Native groups were quickly outnumbered by colonists who were eager to acquire land, especially land that had already been cleared by Native people. Native people who remained were pushed into the interior and away from their established settlements.

In 1634, Long Island (along with Deer, Hog, and later Spectacle islands) was granted to Boston and most of the Harbor islands were likely used for pasturage and as a raw materials (e.g. wood) resource base (Sweetser 1882). A fort was constructed on Castle Island in the same year (1634) to protect the new settlement from attack by sea and was the first of many defense works constructed and upgraded during the subsequent centuries. The earliest EuroAmerican homestead may have been located on Thompson Island (named for the colonist- David Thompson) who arrived in 1625 but died shortly thereafter. Seventeenth century tenant farmers lived on some of the islands including Thompson, Deer, Georges, Gallops, Long, Peddocks, and Bumpkin. Other islands, including Ransford, were primarily used for pasturing livestock in the seventeenth and early eighteenth centuries (Seasholes et al. 2007).

Growing tensions came to a head in 1675 with the devastating conflict known as King Philip's War. In October 1675, a group of Native Americans from Natick was accused of burning a house in Dedham, and the General Court acted quickly to control the movements of Native people. The residents were ordered to Deer Island in Boston Harbor, which was privately owned and had been kept as pasture land at that time (Gookin 1836: 472-474; Kales 2007). By December 1675, the Native residents in Christian communities at Ponkapoag (present-day Canton) and Nashoba (present-day Littleton) had also been forced to the Boston Harbor Islands. While most Native people were sent to Deer Island, colonial records identified captives on Long Island, Peddocks Island, and the Brewster Islands (Lepore 1998:19).

The Harbor Islands had sustained Native people for thousands of years, but the conditions under which people were forcibly confined in 1675 were incredibly different. Historian Lisa Brooks (2018: 225) described Deer Island as "long deforested and barren of shelter and resources. [Native captives] faced harsh ocean winds and nor'easters that covered the island with snow, which, combined with meager shelter, led inevitably to death by freezing. The deer for which the island had been named (by the English) were long gone, and the people could eat mainly what shellfish they could gather from the freezing sand and sea. The island had been planting places for their ancestors, not winter homes." Estimates are that between 750 and 1000 Native people were confined on the Harbor Islands between 1675 and 1676, and as many as half died while in captivity (Lepore 1998:27). The full extent of the Native American internment and the burial places of those who died on the Harbor Islands have not been fully documented.

The islands continued to be used as places of isolation and confinement after King Philip's War. In 1717, a quarantine hospital was built on Spectacle Island for mariners and incoming settlers suspected of having smallpox. The hospital was moved to Ransford Island in 1737, with an associated cemetery.

Defense works were expanded and added during this period and Revolutionary War engagements occurred on Grape Island, Peddocks Island, and a major battle at Noddles Island and Chelsea. In

1833, construction began on a “Third System” fort on Georges Island that became known as Fort Warren. During the construction, a large drumlin on neighboring Gallops Island was cut down to improve defensive sight lines. Lighthouses and navigation beacons included the Nixes Mate day-beacon in 1805-6 and 1832; Long Island Head Light built in 1819. Civil War troops were stationed on Georges, Long, Gallops, and Lovells islands, and Fort Warren served as a prison camp for Confederate soldiers. In 1867 Fort Strong was moved from Noddles Island (East Boston) to Long Island and a gun battery was built (Seasholes et al. 2007).

Nineteenth century fishermen built houses on islands, some continue to be farmed. An enclave of fishing cottages was built on Middle Brewster in the 1840s; several lobstermen and their families lived on Calf Island in the 1880s, and temporary fishing huts were present on several of the smaller islands. Recreational use of the islands for summer tourism began in the mid-to-late nineteenth century. Hotels were built on Deer, Rainsford, Spectacle, and Long islands. Wealthy Boston-area residents built summer estates on the Brewsters and Calf Island, and summer resort communities were partially developed on Peddocks and possibly Long islands. The nineteenth century also saw the intensive development of institutions on the Harbor Islands, which were considered to be an ideal location to isolate sick, indigent, and marginalized citizens away from the general population. The Boston Farm School was established on Thompson Island in 1833. The Boston Almshouse and House of Industry was relocated from South Boston to Deer Island in 1853. In 1866 the quarantine hospital on Deer Island was moved to Gallops, occupying the recently utilized Civil War barracks there. In the following decades, an almshouse and reformatory was built on Rainsford; Houses of Reformation and Correction were added to Deer Island, and in the 1880s all of these were consolidated into one facility on Long Island (Seasholes et al. 2007).

The islands’ locations near to but disconnected from Boston also led to their use for disposal. In 1857 a facility was built on Spectacle Island to render dead horses and was expanded in the 1870s to process cattle bones for tallow and suet. A garbage disposal plant was built on Moon Island in 1892, and the first sewage processing and disposal facilities were built on Deer Island in 1890s (Seasholes et al. 2007).

The first half of the twentieth century saw the consolidation and expansion of institutional activities on Long Island while military and defensive activities expanded on numerous islands. In the early decades, Endicott Period fortifications were built on George’s Island (which had already been used for defense, and new forts were built on Long, Peddocks, and Lovells. Troops were stationed and/or trained on all three islands (and on Bumpkins Island) during World War I, and these facilities were improved and used again during World War II. Deer, outer Brewster, and Gallops Island were also utilized during World War II. New and/or additional navigation beacons were placed on Spectacle and Lovells islands in 1903 and the Graves Lighthouse was built in 1905 (Seasholes et al. 2007).

Aside from military use and institutional use (which became limited to only Long Island after about 1920), the use of the Harbor Islands for summer tourism, farming, and as fishing stations decreased as the twentieth century wore on. Exceptions included small summer communities on

Pedlocks and Great Brewster islands and farming on Thompson Island. Spectacle Island continued to be used for disposal, transitioning to a trash dump in 1935 (Seasholes et al. 2007).

After World War II, the need for defensive works diminished and most of the active gun emplacements, munitions, and active troops were removed. The change in military technology led to the installation of short-lived Nike missile silos on Long, Deer, and Spinnaker islands in the 1950s. Also in the 1950s, the Metropolitan District Commission (now Massachusetts Department of Conservation and Recreation) took ownership of George's and Lovells islands, and in 1970 acquired Pedlocks. The Boston Harbor Islands State Park was created in 1970 and include 16 islands (George's; Lovells; Pedlocks; Gallops; Bumpkin; Grape; Great, Middle, and Outer Brewster; Calf and Little Calf; Green; Hangman; Racoon; Slate; and Sheep). With this transition the islands largely returned to use for passive recreation. Spectacle Island was used to deposit more than 3.5 million cubic yards of soil from the Big Dig, effectively capping the refuse that had been dumped there until 1959. In 1996 the Boston Harbor Islands National Recreation Area was created to include the 16 state park islands plus 18 others, for a total of 34 islands (Seasholes et al. 2007).

Field Methods

This project will be conducted in four general phases: data gathering, mapping, walkover survey, and report production.

Data Gathering

Holly Herbster and Elizabeth Solomon, representing the archaeological contractor and Massachusetts Tribe, respectively, will conduct background data gathering of site and survey data, with the specific goal of refining where site boundaries and survey boundaries have been located in the past. This will allow for more accurate predictive modeling when compared to erosional data.

The following institutions and data repositories to be reviewed include (but are not limited to):

- Massachusetts Historical Commission
 - Archaeological site forms
 - Archaeological Reports
 - Burial Files after further coordination with MHC staff
- MassDCR Archives and Archaeological files, Office of Cultural Resources
 - Archeological reporting, fieldnotes, and files
- Harvard Peabody Museum and Tozzer Library
 - Early collector and looted materials

- Harvard University archaeological surveys
- Burial/ancestor records
- Massachusetts Board of Underwater Archaeological Resources (MBUAR)
 - Submerged archaeological site forms and reports
- National Park Service- Boston Harbor Islands
 - Archival archaeological information and reports, including information on file at Northeast Archaeological Resources Program in Lowell, MA
- UMass Amherst/Archaeological Services
 - Archaeological reports and files
- Massachusetts Archaeological Society
 - Bulletin of the Massachusetts Archaeological Society (online)
 - Outreach on existing collections from the Harbor Islands
- UMass Boston
 - Barbara Luedtke original field notes and data

Mapping

The data collected during the background research will be plotted on topographic maps (or other base maps as determined by the project team) using GIS software and will include, wherever possible, specific locational information gathered from site forms and report. The GIS data will be provided to the project geomorphologist Zoe Hughes who will create a GIS archaeological base map.

Once the geomorphologist creates a map based on the erosional risk of each site and unsurveyed shoreline based strictly on its erosional risk factor, PAL will work with the Massachusetts Tribe and City Archaeologist to determine what cultural factors and Tribal priorities and concerns increase or decrease the “rank” of a Boston Harbor Island archaeological site for prioritization in the Climate Action Plan (Plan). This prioritization will serve as one of a series of project best practices. In consultation with the City Archaeologist and Native American partners, PAL will prepare a spreadsheet of archaeological sites and their prioritization.

Walkover Survey

Because much of the data from the Islands was gathered in the previous century, significant erosion has likely led to the loss of some sites and the exposure of new sites, specifically shell middens, which are highly visible and can be identified often without ground disturbances.

A walkover ground truthing of the islands is necessary to confirm if documented shell middens are still visible and if new shell middens have been exposed. Additional historical and ancient archaeological sites may also be documented during these walkovers, though no ground disturbance of any island is included in this project.

The walkover survey will include photodocumentation and recording of existing conditions. Current information about known site locations, including any visible materials and/or erosion, will be documented. Any new/unrecorded sites identified by visual inspection will be recorded with locational information and with photographs and GPS mapping.

No cultural materials will be collected during the walkover survey.

Report Production

The report phase of the project will begin with the creation of a Best Practices document created in collaboration between the project archaeologists and Native people that will include, at minimum:

- A review of common archaeological terminology including but not limited to “artifact,” “site,” “positive,” “negative,” “dig,” “midden,” and other words to ensure that the Plan and other projects in the Harbor Islands uses culturally sensitive terminology;
- A list of contacts, contact methodology, and consultation budgets, to ensure future projects are inclusive of Native community review, participation, and collaborative oversight;
- A list of best practices for curation of materials recovered during the archaeological surveys that follow this plan; and other practices that come out of this inclusive community archaeology project.

These Best Practices will be based on the MHC standards for archaeological survey set forth in Public Planning and Environmental Review: Archaeology and Historic Preservation, Massachusetts Historical Commission (MHC 1979) and 950 CMR 70, including the requirements to conduct survey under a State Archaeologist’s Permit issued by the MHC.

The spreadsheet data and Best Practices will be used to develop an associated approximate budget for mitigation at each site or unsurveyed area. The mitigation budgets will account for the Best Practices as well as Massachusetts archaeological survey standards and the State Archaeologist’s permit regulations.

The goal of the budget component will allow island managers and partners to be able to appropriately budget for archaeological mitigation recommended by the Plan and to know the technical and community requirements of these mitigations.

PAL will summarize existing flora and pollen archaeological data to be used in a cultural landscape component of the report in consultation with the project team. Using this data and information provided by Native American peoples, one section of the Plan will recommend appropriate native or culturally-significant plants to be used in future stabilization plantings at

sites of archaeological excavation. For purposes of this proposal PAL assumes that these plantings will be done by a separate contractor using separate funding.

The Plan will include a summary of the background site file and report research, results of the site reconnaissance survey, a summary of the cultural landscape floral and pollen research and recommendations, a listing and discussion of the Best Practices, the prioritized list of archaeological sites, budgets for site mitigation and survey, and a methodology/methodologies and permit requirements for completing surveys in Massachusetts.

The Plan will include graphics and maps, including the GIS maps of archaeological site and sensitivity areas, with confidentiality labels as appropriate to protect sensitive site locational data. The Plan will also include a complete list of References including a listing of all personal and informant communications. All written documents and digital map data will be submitted to the MHC.

The report will follow the guidelines established by the National Park Service in the Recovery of Scientific, Prehistoric, Historic, and Archaeological Data (36 CFR Part 66, Appendix A) and the MHC. Draft copies of the report will be submitted to the City Archaeologist and Native American partners for review and comment prior to submission to the MHC for review. New and/or updated MHC archaeological site forms will be completed and submitted to MHC as part of the project. The final report will follow the draft review. MHC archaeological site form(s) will be completed/updated and submitted to MHC, if necessary.

Public Outreach and Education

Because of the sensitive nature of the data gathered during this project and the visibility of many of the sites included, specifics of the project will not be accessible to the general public.

Due to publicity on the project related to the awarding of a competitive Community Preservation Committee grant and the listing of the Boston Harbor Islands as one of the top 11 most at risk historic places by the National Trust for Historic Preservation in 2022, this project has already attracted attention.

To date, the project leaders have been approached by multiple coastal municipalities, regulators, and community organizers who are interested in either the methods used for accessing the risk of sites due to erosion, our collaborative efforts with Native people, or both.

As such, the Plan document will be written in a way that will allow for significant components of it to be separated into a sharable public document that can be used by others seeking to do similar collaborative mitigation of climate change impacts on archaeological sites. This document will not discuss any site locational data.

It is also the hope of the project team that the staff of the MHC will find our project Best Practices transferable to other projects. The Best Practices should assist to facilitate change in collaborative archaeological research design and methodologies, as part of improving relationships among regulators, communities, contractors, and researchers.

Laboratory Methods

No materials will be collected during this phase of the project.

Curation

At the completion of the project, all associated records, photographs and maps will be curated at the Boston City Archaeological Laboratory in accordance with Secretary of Interior Standards (36 CFR 79) and MHC guidelines.

Schedule

The work will begin upon the receipt of the permit. Background will begin with permits and continue through the summer of 2023. Field walkovers will begin in the summer of 2023 and continue through the end of the year. The report will be produced in the winter of 2023/24

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