

The Falls Island Collection:

A Report on a Collection of Late Maritime Archaic through Protohistoric Period Artifacts from Falls Island in Cobscook Bay, Maine.

by

Joshua A. Cummings

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Supervisors: M. Gabriel Hrynicky, Ph.D., Anthropology
Arthur Anderson, Ph.D., Anthropology

Examining Board: Noah Pleshet, Ph.D., Anthropology, Chair
Kenneth Holyoke, Ph.D., Anthropology
Martin Willis Monroe, Ph.D., Classics and Ancient History

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Abstract

Falls Island is located in Cobscook Bay, Maine, in the western Quoddy Region. Between the 1930s and 1950s, local avocational archaeologists John and Douglas Knapton visited the island and collected artifacts from eroding shell middens and intertidal zones. Their collection was donated to the Robert S Peabody Institute, where they are currently curated. I analyzed the artifacts using a culture-historical approach. The collection suggests an extensive period of occupation from the Late Maritime Archaic through Late Maritime Woodland periods (ca. 5500-550 cal BP). In this thesis I place the artifacts chronologically using typology from the Quoddy Region, the Atlantic Northeast, and New England. I also conducted a pedestrian survey of Falls Island, which revealed two remaining archaeological sites, and two eroded sites. This thesis uses collections research and pedestrian survey to analyze coastal archaeological sites in the Quoddy Region.

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Chapter 1: Introduction to the Problem

In this thesis I examine the legacy collection from Falls Island, Maine, which was recovered by John and Douglas Knapton between 1934 and 1951. I analyzed the morphological and technological attributes of the artifacts in this assemblage and, when possible, placed them temporally within the archaeological record. Using these data, I then inferred settlement and subsistence strategies employed by Ancestral Wabanaki, providing insights into coastal hunter-fisher-gatherer use of space. I also conducted a pedestrian survey of Falls Island in an attempt to relocate the sites from which the artifacts were collected. This research is necessary as rising sea levels are rapidly eroding coastal archaeological sites.

Coastal hunter-gatherers have garnered the interest of archaeologists working in North America, especially on the Northwest and Northeast coasts (e.g., Ames 1994; Betts and Hrynck 2021; Coupland and Palmer 2009; Matson and Coupland 1995). In the Atlantic Northeast (Figure 1.1)—and around the world—rapidly rising sea levels, an increase in storm frequency and severity, and high tidal amplitudes have eroded and submerged coastlines and compromised archaeological sites. As a result, archaeological sites are eroded and washed onto intertidal beaches (e.g., Erlandson 2012). This process often involves “chronological shingling” (Belknap and Sanger 1993), which is the systematic destruction of coastal sites from oldest to youngest due to rising sea levels (Figure 1.2). Although chronological shingling is not a worldwide phenomenon, it is occurring rapidly in the Quoddy Region.

The Quoddy Region (Figure 1.1) is located in Charlotte County, New Brunswick and Washington County, Maine. The region extends from Point Lepreau, New Brunswick, to the tip of Grand Manan and across coastal waters to West Quoddy Head, Maine. The Quoddy Region sits at the confluence of the Bay of Fundy and Gulf of Maine. Two large bays, Passamaquoddy Bay and Cobscook Bay, are significant geographic features and both contain long stretches of coastline and several islands. The St. Croix, Magaguadavic, and Denny's Rivers, and many smaller waterbodies drain into the Quoddy Region.

In the Quoddy Region, coastal erosion has apparently destroyed most known coastal Maritime Archaic (9500–3500 cal BP) and Transitional Archaic (4000–3000 cal BP) period sites (Shaw et al. 2010). Therefore, legacy collections—like the Knapton's—are important for understanding coastal Maritime Archaic period (ca. 10000-3000 BP) through Early Maritime Woodland (ca. 3000–2200 BP) period sites in the Maritime Peninsula.



Figure 1.1: Map of the Atlantic Northeast with Quoddy Region shown in inset.

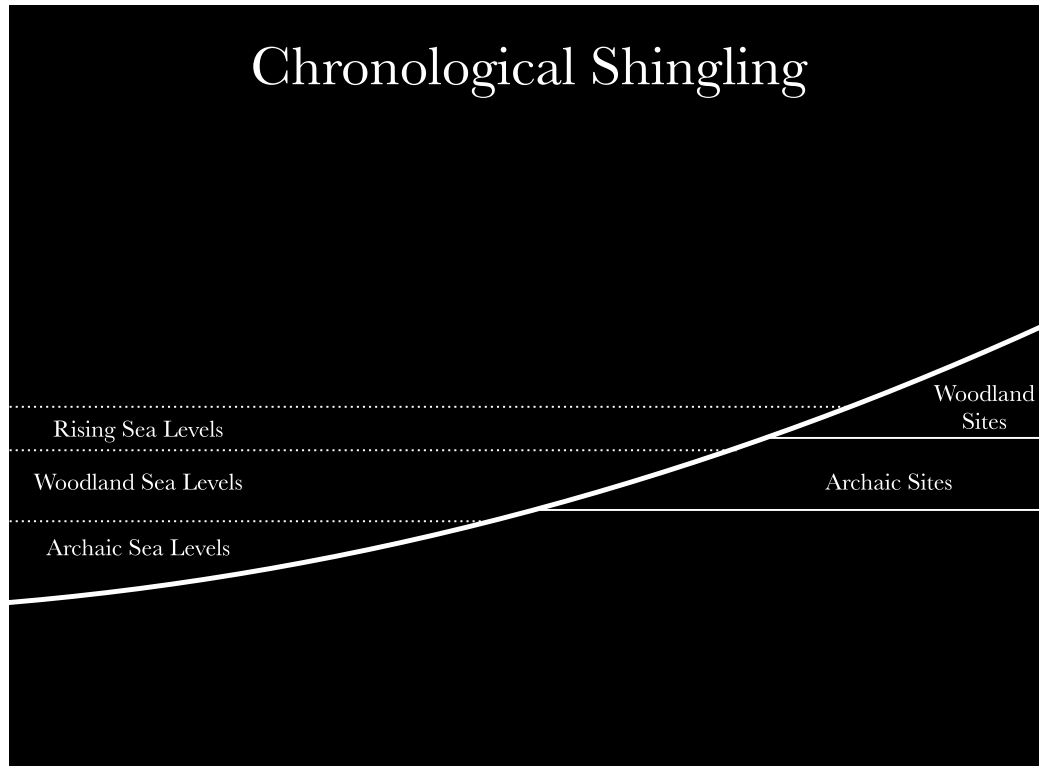


Figure 1.2: Schematic diagram showing the effects of chronological shingling in the Quoddy Region. The curved solid line represents the shoreline. On either side of the shoreline are sea-levels, and the sites they correspond with. The diagram shows that Maritime Archaic period sites are entirely submerged/eroded, while Maritime Woodland period sites are actively eroding. (Figure by Arthur Anderson.)

1.1 Theoretical Background

Avocational archaeological collections have been utilized by archaeologists working in the Maritime Peninsula for decades (e.g., Black 2000; Clarke 2016; Crock et al 1993; Price and Spiess 2007). Legacy collections and recent recoveries by contemporary avocational archaeologists are valuable contributions to the archaeological record. However, these collections have limitations. The artifacts are frequently collected from intertidal sites where erosion has led to deposition in the littoral zone. Organic artifacts are rarely preserved in these zones, and fragile artifacts are often obliterated in high

energy environments; as a result, many collections are composed solely of lithic artifacts. Moreover, stratigraphic information and radiocarbon dates are seldom obtainable from such collections. Inconsistent or incomplete contextual evidence is often characteristic of these collections. Further, the underexplored nature of the archaeological record in the Maritime Peninsula has historically made artifacts without provenience difficult to place in the archaeological record (see Robinson and Petersen 1993).

Falls Island, the focus of this thesis, is located in Cobscook Bay, in Washington County, Maine. The island has a roughly triangular shape with several narrow, deep embayments and peninsulas; it is approximately 1.4 km in length, while the maximum width is about 850 m. The island's close proximity to the mainland causes powerful tidal currents to be forced through narrow channels, which creates a violent tidal race, also known as a reversing falls. This tidal race makes the western channel of Falls Island dangerous for boaters, with the only calm periods occurring at slack tide, when the tide is neither rising nor falling.

The Quoddy Region's location on an international border has created a boundary overlap between two archaeological constructs (Holyoke & Hrynicky 2022; Sanger 2002:6). The first archaeological construct, the Maritime Peninsula (Hoffman 1955), consists of New Brunswick, Nova Scotia, Prince Edward Island, the Quebec Lower North Shore, and a large portion of Maine. The second jurisdiction, New England, includes Maine, New Hampshire, Massachusetts, Connecticut, Rhode Island, and Vermont (Figure 1.3). While New York is not one of the New England states, its culture history

(Ritchie 1961) will be considered in this thesis as it has been influential in the development of New England's culture history sequence. This discontinuity has complicated culture history in the Quoddy Region as archaeologists working in New Brunswick have tended to look to the Maritime Peninsula, while archaeologists in Maine have tended to look to New England for typological comparisons.

Work in the Quoddy Region during the latter part of the 20th century and beginning of the 21st century by Anderson and Hrynck (2023), Black (1992; 1994; 2000; 2017; 2018), Burke (2022), Davis (1978), and Sanger (1975; 1987; 1996; 2006; 2008) has brought some clarity to artifact typology in the Quoddy Region. Additional research by Allen (1994; 2005), Betts (2019), Blair (2004), Boudreau (2016), Bourque (1995; 2012), Campbell (2016), Cox (2021), Deal (1985) Foulkes (1987), Holyoke (2012), and Tuck (1976; 1991) has added continuity to the archaeological record of the Atlantic Northeast, and by extension, the Quoddy Region. This research has made it possible to use typology to glean useful information from archaeological collections that lack contextual evidence.

In my research, I deploy culture-historical methods to organize archaeological collections. Based on morphological and technological attributes, I analyze the artifacts to place them temporally in the archaeological record. Culture history can inform anthropological topics, such as rates of cultural change and interactions among people over extensive geographical distances. Moreover, culture change is in large part contextualized by historical context, which is reflected in the archaeological record. My use of a culture-historical approach does not accept controversial hyper-diffusionist

hypotheses for culture change. Ideas regarding population replacement and migration are significant claims and require substantial evidence to support them; population continuity in the archaeological record should be the default position (Betts and Hrynck 2021:22). This approach to culture history acknowledges the capacity of past cultures to generate their own histories and to engage in culturally generative ways with other peoples.

Culture history, because it defines cultural units based on “functional classes and styles of artifacts, or material signatures” (Robinson 1996b:1), is sometimes portrayed as an outmoded approach to archaeological research (e.g., Lyman et al. 1998; Trigger 2006). However, as Betts et al. (2023) note, a fundamental reason for the persistence of culture-historical approaches is their value to archaeological interpretation; thinking typologically about material culture can create meaningful temporal and interpretive frameworks. On the Maritime Peninsula (Figure 1.3), culture history was not set aside in the late 1960s as it was in other regions (e.g., Sanger 1973, 1987, 2008). Work by Robinson (1996a; 1996b; 2001) defends culture-historical approaches and is foundational to the resurgence of culture history.

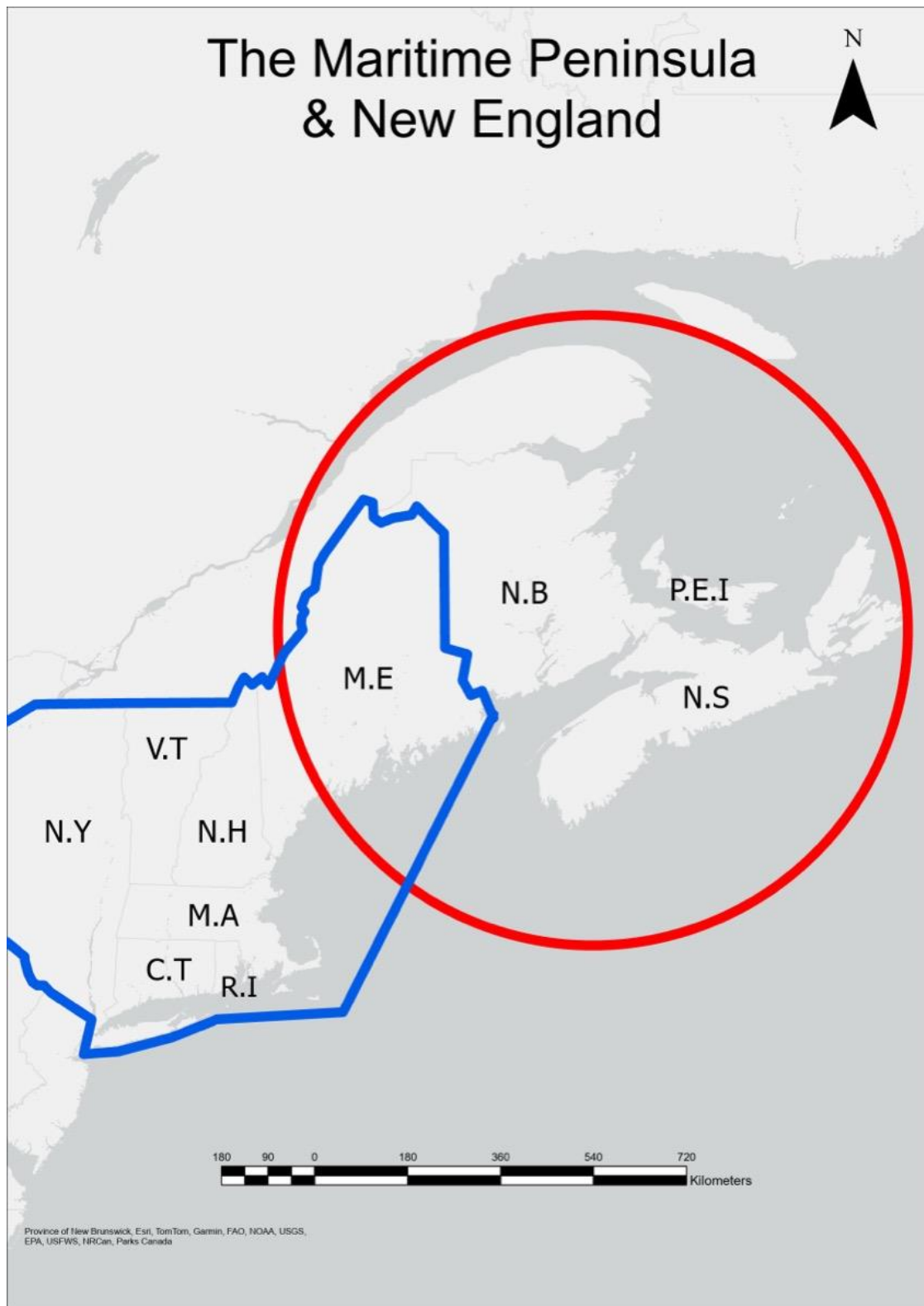


Figure 1.3: The approximate boundaries of the Maritime Peninsula (red) and New England (blue). The Quoddy Region lies in both constructs, while also being divided by an international border.

1.2 Terminology

Archaeological Typology

Archaeological typology is the systematic classification of artifacts based on their characteristics (Banning 2000:53–54). Renfrew and Bahn (2008:124) note that “artifacts of a given period and place have a recognizable style – distinctive of the culture that produced them,” and that in the absence of absolute dating methods, an artifact can be relatively dated by matching it “with an artifact already recognized within a well-established typological system” (Renfrew and Bahn 2008:125).

The Atlantic Northeast

An archaeological construct which includes the Canadian Maritime provinces (New Brunswick, Nova Scotia, Prince Edward Island, and Newfoundland and Labrador), Maine, and the Quebec Lower North Shore (Betts and Hrynich 2021:1)(see Figure 1.1). In this thesis the Atlantic Northeast is used exclusively when discussing the Late Maritime Archaic period. I utilize Tuck’s (1982) and Betts and Hrynich’s (2021:140-142) idea that the Late Maritime Archaic represented an interrelated cultural across the Atlantic Northeast.

Culture History

Culture history is an archaeological method which emphasizes the examination of material culture, specifically correlations among artifact types (e.g., projectile points, ceramic), to define archaeological cultures and place them in a historical sequence.

The Maritime Peninsula

The Maritime Peninsula is an archaeological construct which includes New Brunswick, Nova Scotia, Prince Edward Island, the Quebec Lower North Shore, and the majority of Maine, with the exception of the areas to the south of the Kennebec River (Hoffman 1955). Unlike the Atlantic Northeast, it does not include Newfoundland and Labrador.

1.3 Methods

In this thesis, my approach to collections analysis draws heavily on work by David Black. Methodologically, I situate my work regionally in Betts and Hrynich's (2021:285-286) call to revisit typology on the Maritime Peninsula. Recently, Black (2018) has analyzed Transitional Archaic collections amassed by avocational archaeologists in the eastern Quoddy Region. The artifacts in these collections are generally found in intertidal zones; often they are all that remain of eroded sites. Black's work has examined the morphological and technological attributes of these artifacts, followed by typological analysis and chronological placement in the archaeological record.

Black (2018) sought to interpret site usage and placement by examining site structure, orientation, and exposure, which allowed him to create models for Transitional Archaic settlement patterns (Black 2018:67). The Transitional Archaic settlement pattern model was then compared to those of the Maritime Woodland period (Black 2018:67). The contrast between the two periods was substantial,

specifically in terms of site orientation and preferred landforms, which suggests coastal settlement and subsistence patterns differed temporally (Black 2018:67-68).

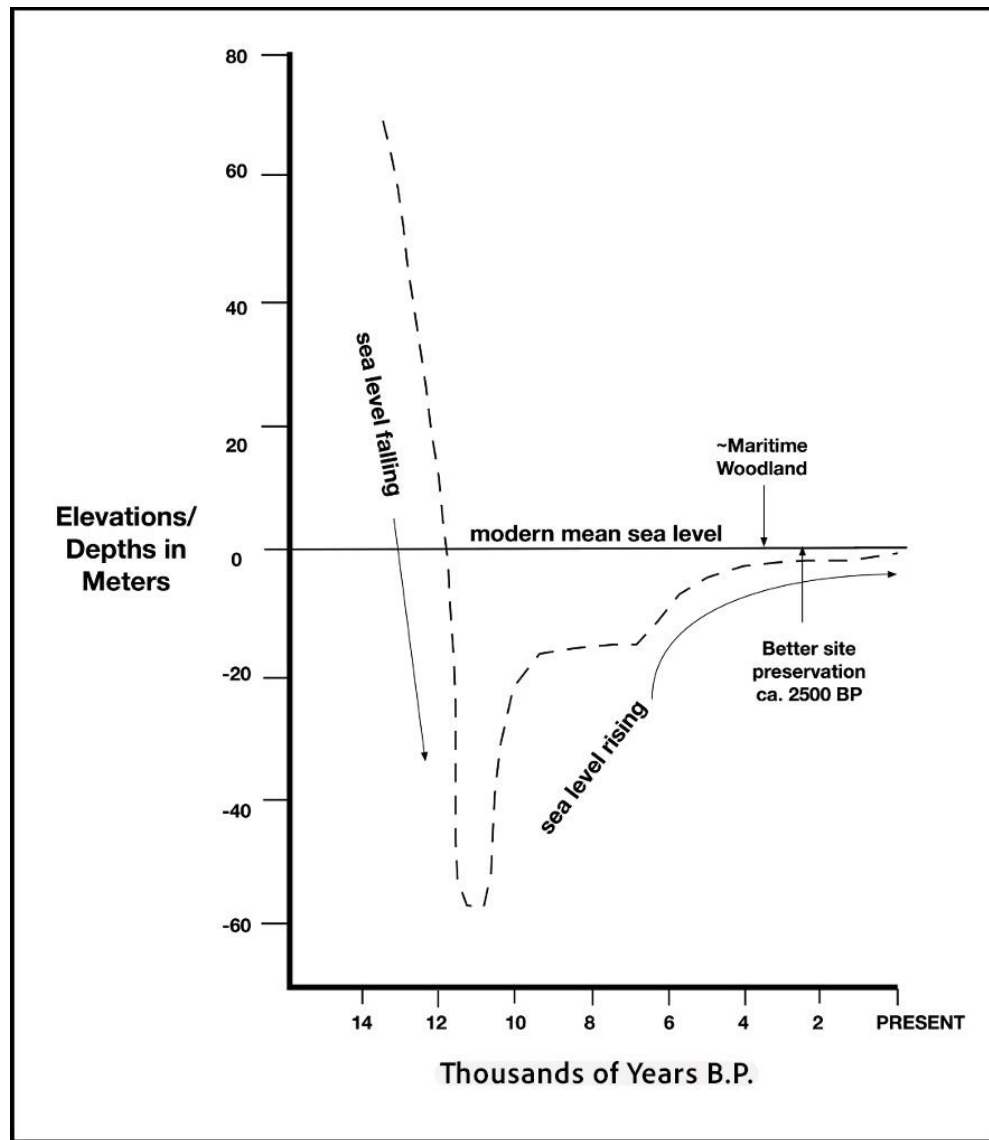


Figure 1.4: Diagram showing sea-levels in the Quoddy Region over the past 14,000 years. (After Kelley et al. 1992, modified by Black and Spiess.)

Black's methods are particularly important in the Quoddy Region where rising sea levels and storms have eroded much of the coastal archaeological record (Figure 1.4). He believes that even though site structure and context is eroded, the material culture assemblages, patterning and associations, as well as spatial, temporal and

cultural contexts of these collections and intertidal sites should be recorded (Black 2018:6).

The Falls Island collection presents many of the challenges met by Black (2018), including inconsistent contextual evidence (e.g., lack of radiocarbon dates, stratigraphy, and artifact provenience). Therefore, his methods provided a template for my research. Following Black's (2018) approach, I examined morphological and technological attributes of the artifacts in the Falls Island collection, followed by typological analysis; if possible, temporal affiliations were made. Regional comparisons of site placement and usage, and Black's (2002, 2004, 2018) models for coastal settlement, facilitated my inferences about cultural affiliations and settlement and subsistence patterns.

I analyze the Falls Island collection based on morphological and technological attributes. Morphological attributes are shape, size, and characteristics of use, while technological attributes are characteristics of manufacture. Both morphological and technological attributes are used to determine typological assignment of artifacts. Temporally diagnostic artifacts are attributed to identifiable archaeological time periods. I use a hierarchical classification system commonly used by Northeastern archaeologists to further categorize the artifacts by type, e.g., flaked stone, ground stone, faunal, and ceramic (e.g., Bourque 1995; Carignan 1975; Cox 2021; Dincauze 1968). Artifacts that are unable to be placed in a specified time period are categorized as temporally non-diagnostic.

The most prolific collectors of Falls Island favoured collecting complete, or partially complete artifacts (e.g., projectile points, ground stone tools, bone tools),

which made typological analysis possible on a large portion of the collection. Lithic debitage (e.g., unmodified flakes), which is difficult to place typologically, was not collected. This combination allowed for a high degree of confidence in the current typological analysis.

Due to the difficulty associated with identifying lithic materials using photographs, my identification of lithic types from Falls Island is conservative. Only flaked stone tools which have been attributed to a culture period have been included. Categories for lithic materials include local, probably local, and exotic.

In addition to my collections work, an archaeological survey of Falls Island provided a field component for this thesis. The goal of the survey was to relocate, assess and accurately record previously registered archaeological sites on Falls Island. Intertidal surveys of previously registered sites were planned as erosion was expected. Data from this survey was used to update the Maine Historic Preservation Commission archaeological site database. It also provided useful information about site location and orientation in conjunction with the collections analysis.

Collectively, this research broadens the understanding of Late Maritime Archaic and Maritime Woodland period hunter-gatherer settlement and subsistence strategies in a coastal milieu. It also provides insight into pre-Contact use of islands in the western Quoddy Region, which have been understudied in comparison with the eastern Quoddy Region (Sanger 2008:5). This research also develops approaches for using avocational archival collections in conjunction with fieldwork to access information from eroded sites.

Chapter 2: Quoddy Region Culture Historical Overview

Although Indigenous people have occupied the Atlantic Northeast for nearly 13,000 years, my thesis research only considers the last ca. 5500 years of occupation. Five cultural periods are discussed in this thesis: the Late Maritime Archaic period, Transitional Archaic period, and the Early, Middle and Late Maritime Woodland periods. The date ranges are based on calibrated radiocarbon dates (in Betts and Hrynck 2021), and are shown in Table 2.1.

Table 2.1: Archaeological Periods of the Maritime Peninsula.

Period	Date Range
Palaeoindian	13,000–000 cal BP
Early Maritime Archaic	9500–5500 cal BP
Late Maritime Archaic	5500–3500 cal BP
Transitional Archaic	4000–3000 cal BP
Early Maritime Woodland	3000–2200 cal BP
Middle Maritime Woodland	2200–1300 cal BP
Late Maritime Woodland	1300–550 cal BP
Protohistoric	550–350 cal BP

2.1 Late Maritime Archaic (5500–3500 cal BP)

Two distinct Late Archaic traditions are recognized in the Atlantic Northeast. The first is an interior tradition, known as the Laurentian tradition, which was oriented towards inland riverine and lacustrine environments (Deal 2023:147). The Laurentian

tradition has been documented at the Bob Site (Mack et al.2002), the Sharrow site (Petersen 1991), and site 95.20 (Cox 1991), all in Maine. Diagnostic artifacts from the Laurentian tradition include large side notched projectile points (Otter Creek), eared triangular projectile points (Brewerton), and semilunar knives (Bourque 1995:4; Deal 2023:147-148). Site placement and the few existing faunal remains suggest anadromous fish, white-tailed deer, beaver, and rabbit were important species to Laurentian tradition subsistence (Deal 2023:150).

The second tradition was oriented towards littoral and insular environments. Erosion has destroyed much of the coastal archaeological record in the Atlantic Northeast, making this tradition difficult to parse, and archaeologists continue to debate its extent and placement. North of the Gulf of St. Lawrence, archaeologists accept that the Late Maritime Archaic tradition occurred along the coastlines of Labrador, Newfoundland, and the Quebec Lower North Shore (Tuck 1971; Fitzhugh 1972). South of the Gulf of St. Lawrence there is more ambiguity surrounding this coastal tradition. In both areas this tradition was geared towards hunting large marine species (swordfish in the south and marine mammals in the north), and both groups practiced burial ritualism by interring their dead in red ochre cemeteries with elaborate grave goods.

Archaeological work on the Late Maritime Archaic (LMA) period began with the excavation of red ochre cemeteries in Maine by Charles Willoughby in the summers of 1892 and 1894 (Willoughby 1898). Willoughby (1898:5) excavated graves “of great antiquity . . . unlike any heretofore described.” His work at the Orland and Ellsworth

cemeteries in Maine uncovered red ochre burials and grave goods including bayonets, gouges, adzes, and projectile points (Willoughby 1898).

In the early 20th century, Warren K. Moorehead traveled around Maine and New Brunswick with his crew, which he labelled “The Force,” and dug about 350–400 red ochre burials (Jelsma 2000:9; Moorehead 1922). Moorehead (1913) coined the term “Red Paint People” in recognition of the extensive use of red ochre in the cemeteries. Based on the almost complete absence of bone in these cemeteries, Moorehead concluded that red ochre graves were older than other known archaeological sites in Maine at that time. Subsequently, Sanger (2000:150) was concerned that naming a culture after a burial tradition could lead archaeologists to overlook regional differences. He rejected the term “Red Paint People,” and instead referred to these cemeteries as the Moorehead Burial Tradition (or MBT).

There are two distinct views on the geographic continuity of the LMA period. Douglas Byers (1959:255) recognized differences between interior and coastal Archaic period traditions in the Northeast and was the first archaeologist to introduce the concept of a broad Maritime Archaic tradition. James Tuck (1971:343) noted the similarities between coastal Archaic period assemblages in Newfoundland, Quebec, Maine, New Brunswick, and Nova Scotia, and further supported the interpretation of a broad Maritime Archaic tradition. William Fitzhugh (1972:129) working in Labrador, also recognized broad similarities in the LMA period artifact assemblages from Labrador to the Gulf of Maine. Fitzhugh (1972:129) concluded that there were “several regionally

distinct variants,” that shared similar technology including stemmed points, ground stone tools (adzes, gouges, and polished slate), and “an elaborate bone industry.”

Bruce Bourque, who worked on central Maine coast LMA sites (Bourque 1975, 1995, 2012), rejected Tuck’s idea of an expansive LMA culture, and instead suggested an in situ development for Maine’s LMA period, which he termed the “Moorehead Phase.” Bourque (2012:150) suggests a lack of LMA sites in the Canadian Maritimes insulated the Moorehead phase in the Gulf of Maine from the LMA of Newfoundland and Labrador. He argues that this insulation, coupled with different climates and subsistence strategies, constituted enough evidence to prove that the Moorehead phase should not be considered part of Tuck’s (1970) broad LMA culture (Bourque 2012:144). Bourque also supported his argument on stratigraphic grounds. He noted, for example the presence of a Small Stemmed Point (SSP) tradition “palimpsest” stratified below a Moorehead phase component at the Turner Farm site in mid-coast Maine (Bourque 2012:33, 150-151). At the Davis-Tobie site on the Sheepscot River, Bourque noted a similar pattern of SSP tradition artifacts (Figure 2.1) stratified below a Moorehead phase component (Bourque 1995:234). Based on this stratigraphic relationship, and similarities in projectile points, Bourque believes the SSP tradition is ancestral to the Moorehead phase and indicates an in situ, and localized development.

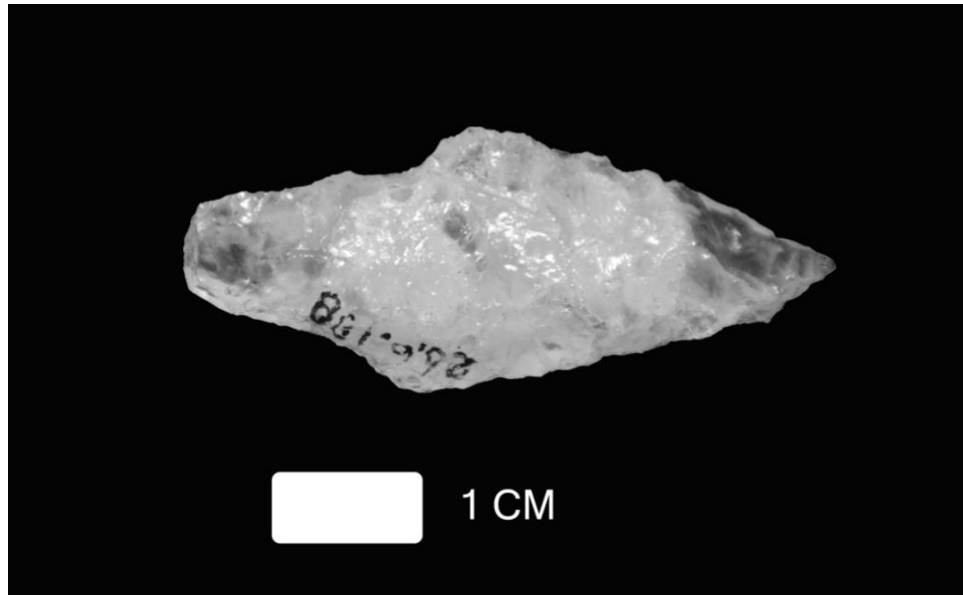


Figure 2.1: A quartz Small Stemmed Point from the Davis-Tobie site (ME 26.6), located on the Sheepscot River in Maine. (Courtesy of the Maine State Museum.)

Brian Robinson's (1985) work at the Seabrook Marsh site in New Hampshire (NH-47-22) uncovered a SSP tradition component which Bourque (1995:235) recognized as closely resembling Moorehead phase sites on the central Maine coast. Robinson (1985) documented swordfish (*Xiphias gladius*) rostrum, cod (*Gadus morhua*) bones, plummets, and gouges, which suggested a maritime orientation for the SSP tradition (Bourque 1995:235). Radiocarbon dates of 4780 ± 185 BP and 4310 ± 255 BP imply the site is pre-Moorehead phase. Bourque (1995:235) believes the SSP tradition component at Seabrook Marsh correlates with the SSP tradition palimpsest at Turner Farm, and suggests it is further evidence of in situ development of the Moorehead phase.

In contrast, Betts and Hrynck (2021:142) accept Tuck's (1975, 1976, 1991) concept of a broad LMA period culture spanning the entire Atlantic Northeast. However, they split the LMA into three distinct regional traditions: the Northern Branch (northern to central Labrador coast), Southern Branch (southern Labrador coast and

Newfoundland) and Moorehead Tradition (Maine, New Brunswick and Nova Scotia). Within these regional traditions they recognize local complexes (Betts and Hrynicky 2021:142). Betts and Hrynicky (2021:134-137) note that recent research has revealed the presence of LMA sites and artifacts in the Canadian Maritimes (e.g., Deal 2016; Deal et al. 2006; Deal and Rutherford 2001; Murphy 1998; Pentz 2013; Sanders et al. 2004;), which suggests the Moorehead phase in Maine was not insulated from the broader LMA tradition.

LMA period coastal habitation sites are rare in the Atlantic Northeast, particularly in the Gulf of Maine and Bay of Fundy, where rising sea levels have inundated or eroded most of the shorelines occupied during this period. This dearth of sites makes the identification of sites with LMA components, such as Falls Island, crucial for understanding the nature and distribution of the LMA period cultural phenomenon.

2.2 Transitional Archaic (4000–3000 cal BP)

The Transitional Archaic period marked the beginning of a new cultural phenomenon, known as the Broad Point Archaic tradition (Ellis et al. 1991). This tradition witnessed changes in lithic technology, mortuary ceremonialism, and subsistence patterns. In the Atlantic Northeast, this cultural phenomenon has been referred to as “the Susquehanna tradition” (Bourque 1995), the Broadspear tradition (Borstel 1982), and the Broad Point Archaic (Black 2018; Ellis et al. 1990). I use Broad Point Archaic to keep consistent terminology with previous work in the Quoddy Region.

During the Transitional Archaic period there was a decreased emphasis on ground stone technology, and flaked lithic technology shifted from thick and narrow

contracting-stemmed points to exceptionally crafted, broad-bladed, stemmed projectile points (Black 2000). Cremation burials, often associated with ritually broken or “killed” grave goods, replaced red ochre interments (Snow 1980:243). Bourque (1995:145) noted subsistence patterns were less focused on large marine prey, which coincided with a steep decline in the abundance of bone weaponry. Isotopic data suggests the Broad Point Archaic population “consumed markedly less marine protein than both earlier and later coastal dwellers” (Bourque 1995:145).

The Broad Point Archaic is best documented in New England, where it is most commonly known as the Susquehanna Tradition. There, it is split into three phases: Atlantic (4000–3600 cal BP), Watertown (3600–3200 cal BP), and Orient (3200–2700 cal BP), and some archaeologists postulate that a Coburn phase existed between the Watertown and Orient phases (see Betts and Hrynck 2021:146). These phases are primarily recognized by projectile point typology (Betts and Hrynck 2021:146). The Atlantic phase is known for large, broad-bladed, stemmed projectile points, often referred to as Atlantic implement blades (Dincauze 1972:40). Groups during the Watertown phase utilized large, corner-removed bifaces, known as Mansion Inn blades (Black 2000:90). The enigmatic Coburn phase is associated with flare-tang and crude wide side-notch projectile points (Boudreau 2016:107; Dincauze 1968:28). The Orient phase, the final phase of the Transitional Archaic period, is characterized by slender, wide side-notched projectile points, often referred to as Orient Fishtail points (Boudreau 2016:107).

In the Quoddy Region, David Sanger (2008:35) proposes that the Broad Point Archaic tradition was a “localized cultural expression” by a regionally distinct group of people. He suggests that the Quoddy Region was isolated from the Gulf of Maine by a 30 km stretch of steep rocky shoreline known as the “bold coast” (Sanger 2008:34). In the material culture, Sanger recognized influences from the south, but also noted similarities with Saint John River assemblages, such as distinctive large scrapers and lithic materials local to the Saint John River drainage (Sanger 2008:32-34). David Black’s (2018:65) work with avocational archaeologists has led to the identification of several Broad Point Archaic intertidal sites in the eastern Quoddy Region (Figure 2.2), leading him to believe that the Quoddy Region was “fully integrated” within the Broad Point Archaic tradition. Like Sanger, Black acknowledges subtle differences between these assemblages and those to the south and argues that the Quoddy Region was inhabited by a regional population participating in a “larger cultural phenomenon” (Black 2018:65).

Black’s (2023) research in the eastern Quoddy Region has begun to elucidate Transitional Archaic coastal settlement patterns. Black (2023:66) observed that Transitional Archaic sites commonly consist of intertidal lithic scatters located on low, elongated landforms which are frequently covered by salt marsh (Black 2018:66). These sites are commonly located on islands or peninsulas and exposed to the west-northwest or northeast (Black 2018:66). Black (2023:66) has used these attributes to create a predictive model for locating Transitional Archaic sites in the Quoddy Region.

In the western Quoddy Region, Anderson and Hrynck (2023) have observed the presence of artifacts conforming to the Broad Point Archaic tradition in legacy collections held at the Robert S. Peabody Institute. So far, Anderson and Hrynck (2023:7) have found plausible Broad Spear Archaic tradition artifacts in each of the five collections they examined from the Quoddy Region.

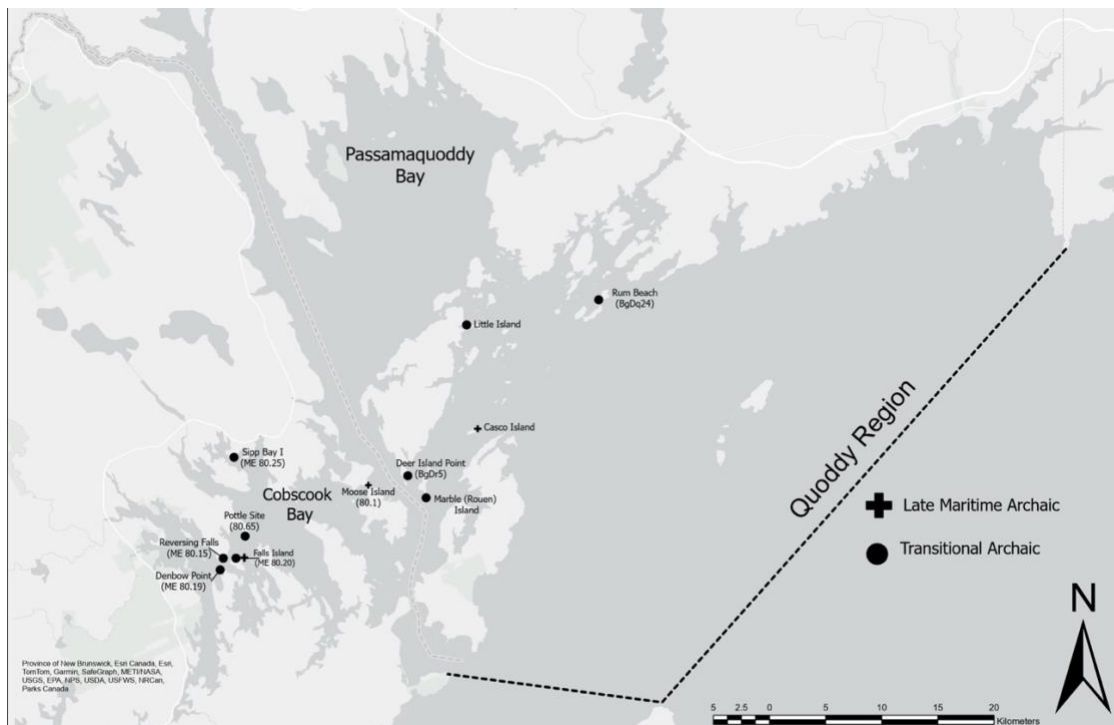


Figure 2.2: A map showing sites with Transitional Archaic components in the Quoddy Region.

2.3 Early Maritime Woodland (3000–2200 cal BP)

The shift from the Transitional Archaic period to the Early Maritime Woodland period was marked by changes in settlement patterns, lithic technology, and ceremonialism, as well as the introduction of ceramic vessels (Betts and Hrynck 2021; Black 2000:98-99; Deal 2023; Petersen and Sanger 1993). A dearth of Early Maritime Woodland sites in the Atlantic Northeast has limited understanding of this period. Some

archaeologists attribute the lack of sites to a depopulation in the region, while others suggest changes in settlement patterns have obstructed site visibility (see Turnbull 1990:15).

Much of the material culture attributed to the Early Maritime Woodland period is associated with the Early Woodland interaction sphere (Betts and Hrynck 2021:158). This interaction sphere is frequently assigned to a number of different phases, which research has begun to suggest overlap in time and space (e.g., Robinson 2015). In the Maritime Peninsula it has been conventional to conceive of the Early Maritime Woodland in terms of two loosely defined suites of material culture, Adena and Meadowood, which imply shared ideas regarding burial practices and exchanges of artifacts over a broad region. Archaeologically, the Meadowood phase usually appears as ceremonial caches and burials which include box-based projectile points, bird stones, and Vinette 1 ceramics (Betts and Hrynck 2021:159). Blair (2004b:256-261; 2004c:246-248) also reasoned that the Earlier Early Maritime Woodland component at Jemseg was consistent with the Meadowood phase based on bifacial lithic technology which included bifacial scrapers and projectile points with “narrow, carefully made side-notches.” Toward the end of the Early Maritime Woodland period, people in the Maritime Peninsula began participating in the Adena phase interaction sphere, which utilized burial mounds and ceremonial objects, such as native copper beads, blocked-end-tubular pipes, flaked and ground adzes, slate gorgets, and distinctive large bifacial artifacts (Betts and Hrynck 2021:159; Blair and Rooney 2022; Turnbull 1976).

In the Atlantic Northeast, material culture attributed to Early Woodland habitation sites is not well defined. The leading diagnostic artifact for this period is Vinette 1 pottery, usually represented by ceramic sherds with fabric impressed surfaces (Deal 2023:185). Projectile point typology is regionally discrete. Point styles include narrow stemmed, straight stemmed, side notched, lobate stemmed, and box-based points (Betts and Hrynck 2021:159; Burke 2022; Deal 2023:188). The diversity of projectile point styles and the paucity of material culture recovered to date makes utilizing typological methods difficult for the Early Maritime Woodland period.

In the Quoddy Region, the deficiency of data led Black (2000:100) to label the Early Maritime Woodland period as “the most controversial in Maine/Maritimes prehistory.” Despite these challenges, Black has introduced some clarity to the period. At the Weir site on the Bliss Islands, Black (2000:99) uncovered an Early Maritime Woodland period black soil midden beneath a Middle Maritime Woodland period shell midden. Within the black soil midden, Black identified a wide side-notched projectile point (Figure 2.3), which was recovered within 5 cm of charcoal dating to 2360 ± 80 BP. He noted similarities between these wide side-notched points and Orient Fishtail points, and suggested the points show cultural continuity from the Transitional Archaic period to the Early Woodland period (Black 2000:100). Also, in the Quoddy Region, Sanger (1987:37) uncovered two widely side-notched projectile points from a black soil midden at the base of a multicomponent shell midden at the Carson site. Sanger noted that these points (1987:38, Plate 10 K–M) differed from the usual Maritime Woodland period

points, and based on their stratigraphic position, suggested they may date to around 3000 BP.



Figure 2.3: Wide side-notched projectile point from the Weir site in the eastern Quoddy Region. Note wide side-notching, which is similar to Orient Fishtail like projectile points. (Photographed with permission of David W. Black.)

2.4 Middle Maritime Woodland (2200–1300 cal BP)

On the Maritime Peninsula, the Middle Maritime Woodland period is associated with population growth and intensified economic activities (MacInnes 2021). These changes were concomitant with a cultural and technological florescence.

Coastal Middle Maritime Woodland period sites in the Maritime Peninsula are associated with large, dense shell middens. Soft-shelled clams (*Mya arenaria*) are typically the most numerous species found in these middens (Betts and Hrynicky 2021:191–195). The middens are often located in sheltered coastal inlets and coves in close proximity to clam flats. These large middens are an indicator of intensification in resource procurement. Ceramic technology was used extensively in this period and featured pseudo scallop shell, dentate, and simple linear tool decoration motifs (Petersen and Sanger 1991). Lithic technology is not well defined during this period; projectile point styles are believed to include stemmed, side-notched, bi-pointed, contracting-stemmed, and Jacks Reef style corner notched (Burke 2022:199).

In the Quoddy Region, Black (2002:309) studied Middle Maritime Woodland period sites in both mainland and insular settings. The hallmark of these sites, like elsewhere on the Maritime Peninsula, is deep shell middens, which occasionally overlay Early Maritime Woodland period components and are often capped by Late Maritime Woodland components (Black 2002:311). Flaked stone tools are relatively rare in these shell middens, while ceramic sherds are relatively common (Pers. Comm. David Black, Feb 2024). The scarcity of flaked stone artifacts makes typological analysis for Middle Maritime Woodland period projectile points challenging.

The faunal remains in these sites imply a heavy reliance on marine resources (Black 2002:311). Seasonal indicators, including season of death analysis on soft shell clams, and the probable season of capture of some vertebrate fish, suggest insular and mainland sites were occupied during both warm and cold seasons. These data led Black

(2002:305, 311) to believe that people were utilizing “a pattern of residential mobility in which small groups of people moved seasonally within the Quoddy Region.”

2.5 Late Maritime Woodland Period (1300–550 cal BP)

The Late Maritime Woodland period in the Maritime Peninsula experienced a growth in population, changing settlement and subsistence patterns, increased territoriality, and expanding interaction spheres (Betts and Hrynck 2021:216). Increased cultural complexity is believed to be linked with these changes (Hrynck and Betts 2023:8-9).

During the Late Maritime Woodland period, settlement and subsistence patterns shifted from residential mobility toward logistical mobility, a pattern first noted by Black (2004) in the Quoddy Region. Large, primary sites were occupied for long periods. Increased house size, which requires “a larger initial investment of labour” at these primary sites, suggests increased sedentism (Hrynck and Betts 2023:8). These primary sites are contemporaneous with small, ephemeral satellite sites which were utilized for specialized economic tasks that supported the population of the primary site (Betts and Hrynck 2021:216). For instance, Jesse Webb (2018) completed a faunal analysis on a small Late Maritime Woodland period satellite site in the eastern Quoddy Region and noted a large number of Tom Cod (*Microgadus tomcod*) bones. Webb (2018) inferred that the site was task specific and exhibited an intensification of resources. Betts and Hrynck (2023:7) note that evidence of botanical intensification also exists in the Atlantic Northeast in the form of ground nuts (*Apios americana*) and burnt plum pits found at Late Maritime Woodland sites (Leonard 1996:132).

Exotic lithic materials are more common in Late Maritime Woodland period than Middle Maritime Woodland period archaeological assemblages; this exotic lithic material was usually in the form of brightly coloured cherts and is evidence of widespread interaction spheres (Black 2022:102–103; Bourque 1994:34–35; Holyoke 2012:49; Hrynck and Betts 2023:9). These exchange patterns suggest that meaningful exchange or economic relationships with neighbouring groups expanded or intensified during this period.

During the Late Maritime Woodland period, sub-regional distinctions in projectile point forms developed. Robinson (1996:11) notes triangular projectile points, known as Levanna points (*sensu* Boudreau 2016:122–123), are common south of Penobscot Bay but are rare around Penobscot Bay and further north. Bourque and Cox (1981:17) report that side-notched projectile points are prevalent around Penobscot Bay. Bourque and Cox (1981:17) suggest that corner-notched points are common north of Penobscot Bay. Some archaeologists (Bourque and Cox 1981; Burke 2022; Robinson 1996) suggest that these differences in projectile point morphology may imply increased territoriality among Late Maritime Woodland groups.

In the Quoddy Region, Black (2002:304) splits the Late Maritime Woodland into two categories: the early Late Maritime Woodland (A.D. 650–1000) and the later Late Maritime Woodland (A.D. 1000–1400). Black (2002:313) notes that early Late Maritime Woodland mainland sites were occupied in the cold season, while insular sites, were occupied in the warm season. He suggests that this may be due to larger populations moving seasonally (Black 2002:313). Early Late Maritime Woodland sites generally

consist of large black soil middens with living floors and pits (Black 2002:312). In the later Late Maritime Woodland period, Black (2002:313) notes the presence of large residential village sites and small ephemeral satellite sites. The satellite sites are typically small black soil middens with shell admixture (Black 2002:313). Black noted small numbers of artifacts and faunal remains which he suggests show that these sites represent short-term logistical forays for specific species (Black 2002:313).

Chapter 3: Falls Island, the Collectors, and the RSPI

The entirety of the Falls Island legacy collection is from Falls Island. It was accumulated between 1934–1951 by local avocational archaeologists John and Douglas Knapton. The collection is currently curated by the Robert S Peabody Institute (RSPI) in Andover, Massachusetts.

3.1 The Collectors

There are several avocational archaeologists who are essential to understanding the genesis of the Falls Island collection. The foremost collectors were Douglas and John Knapton, who were active in Cobscook Bay in the Quoddy Region between at least the 1930s and the 1950s. Douglas was born in England in 1879; the family immigrated to the United States in 1882, and John (Figure 3.1) was born in Massachusetts in 1883 (Anderson and Hrynick 2023:8). According to census records, the brothers were in Edmunds, Maine by 1930 (United States Federal Census 1940 for Washington Co. Edmunds, Maine).

The 1940 census survey indicates that John and Douglas remained on the family farm, with John listed as head of the household (United States Federal Census 1940 for Washington Co. Edmunds, Maine). John's education is listed as one year of high school, while Douglas has no listed education. John's occupation was classified as a steam fitter, while Douglas was a locomotive engineer for the railway. Besides their listed occupations, both brothers likely worked the family farm. In an email, Ted Stoddard (Pers. comm. May 8, 2023) stated that John lived at the family farm with two brothers and two sisters, none of whom ever married. Stoddard (Pers. comm. May 8, 2023) went

on to say that John was a “very bright, charming, shy old man” and that he “amused the locals by walking about with a pigeon perched on his head.”

It is not known what sparked the Knaptons' interest in archaeology and artifact collecting. It is possible that their interest developed early as there was an eroding archaeological site located on the Knapton farm (ME 80.11). The brothers would have encountered artifacts while working in the fields and walking on the beach, which may have developed into a lifelong interest in archaeology. The earliest date we have on record for Knapton collecting is 1934 (from Falls Island), at which time both Douglas and John were in their fifties. The brothers became well known for exploring the archaeological sites of Cobscook Bay in their skiff (Sanger 2008; Figure 3.1). Ted Stoddard (Pers. comm. May 8, 2023) wrote that John “had a keen naturalist’s eye and a great ‘feel’ for finding sites and artifacts.” Over the course of 25 years the Knaptons collected a total of 1810 artifacts from 27 sites (T. Stoddard to D. Byers, memorandum, 14 September 1954, Stoddard Archives, Robert S. Peabody Institute).

The Knaptons were part of a larger network of avocational archaeologists operating in the Quoddy Region. Isaac W. Kingsbury (1872–1961), a physician from Connecticut who spent his summers in Perry, Maine, had a passion for archaeology and was an avid collector (Anderson and Hryn timer 2023:1). Kingsbury had connections (e.g. Kingsbury and Hadlock 1951) with professional archaeologists such as Douglas Byers, Theodore Stoddard and Wendell Hadlock, and a network of avocational archaeologists working in the Quoddy Region (Anderson and Hryn timer 2023; Stoddard Archives, Robert S. Peabody Institute). Kingsbury acted as an intermediary between avocational and

professional archaeologists (Stoddard Archives, Robert S. Peabody Institute). He became friends with the Knaptons and introduced them to Douglas Byers and Theodore Stoddard. Kingsbury's interests were focused on the Archaic and Transitional Archaic period, or as he termed it, "earlier" sites in the Quoddy Region, and he co-authored a report on the Eastport site with Wendell Hadlock. Kingsbury recognized older sites "based on the absence of shell, bone, pottery, and any evidence of European contact" (Kingsbury and Hadlock 1951:22). In a letter dated July 3, 1954, to Ted, Kingsbury wrote, "I have been puzzling over where another Eastport Site might be for a long time" (l. Kingsbury to T. Stoddard, 3 July 1954, letter, Stoddard Archive, Robert S. Peabody Institute). This suggests that Kingsbury had been unsuccessfully looking for the aforementioned "earlier" sites.

Like many avocational archaeologists, the Knapton brothers had a collector's bias, which is visible in the Falls Island collection. They did not collect debitage or faunal remains unless they were utilized. If they had collected non-utilized debitage and faunal remains, their collection, which consisted of 1810 artifacts from 24 sites in the Quoddy Region, would have become unmanageable. Anderson and Hrynck (2023:9) noted the same pattern in the Knapton collection from Denbow Point. The Knapton brothers had refined archaeological eyes, and often collected artifacts overlooked by many avocational archaeologists, such as hammerstones and abraders.

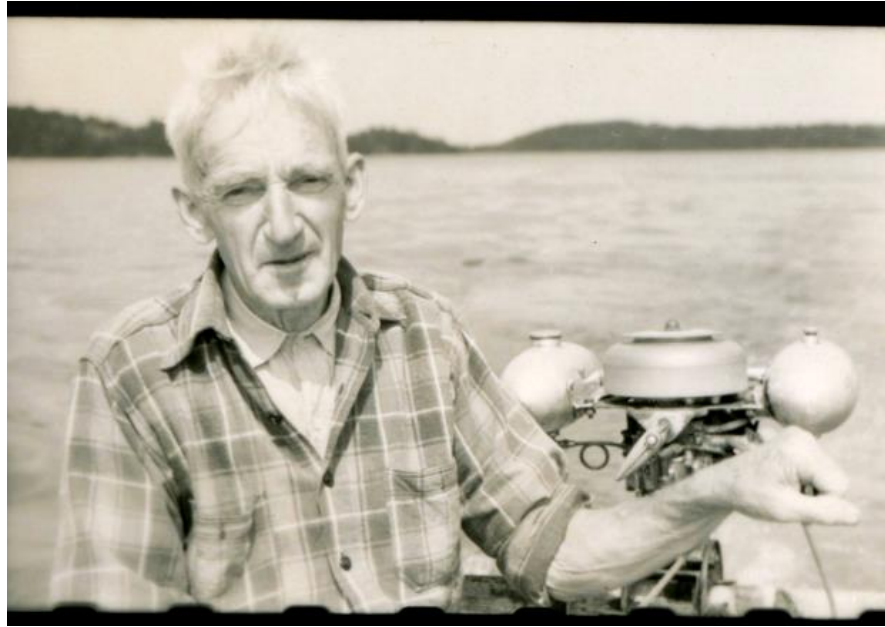


Figure 3.1: Avocational archaeologist John Knapton. This photo was likely taken by Theodore Stoddard during his survey of Cobscook Bay. Circa 1950's. (Curated at the RSPI.)

Although the Knaptons seem to have often collected from surface and erosional contexts, they may also have occasionally dug into sites. The artifacts collected from Falls Island are not water-rolled; furthermore, a large portion of the collection is comprised of faunal artifacts, suggesting that many of the artifacts were recovered from midden contexts and not the intertidal zone. Calcium carbonate from shells neutralizes acidic soil and aids in bone preservation; if bone is not in a shell midden context it quickly deteriorates. Consequently, the large bone collection from Falls Island bolsters the hypothesis that the Knaptons were not only collecting artifacts from eroding sites, but were actively digging in these sites. A passage in a letter from Stoddard to Byers also indicates that the Knaptons were digging in archaeological sites. Stoddard writes, “A day was spent in Edmunds at the Knapton Farm where John Knapton has been digging up bits of glass together with stone tools and chips” (T. Stoddard to D. Byers, letter, 14

September 1954, Stoddard Archives, Robert S. Peabody Institute). Carleton Hayward, who was also an avid collector, was also known to collect with John and Douglas. Hayward used a potato digger when collecting from archaeological sites. In a July 10, 1954, letter to Byers, Kingsbury wrote, "Carleton pulled it out with his hands after having struck it with his potato digger, in removing the turf" (I. Kingsbury to D. Byers, letter, 10 July 1954, letter, Stoddard Archive, Robert S. Peabody Institute). It is possible that the Knaptons used similar tools while exploring archaeological sites. The Byers-Kingsbury correspondence offers a glimpse of how avocational archaeologists operated in the Quoddy Region.

An inventory of the Knapton collection shows a total of 157 artifacts from Falls Island (Knapton Collection, August 1954, Stoddard Archive, Robert S. Peabody Institute). These artifacts are split into four categories according to RSPI records: stone (137), bone (20), pottery (2), and other (1). Falls Island is the fifth largest collection of the 27 Knapton sites and has the largest number of bone artifacts of any of the Knapton sites (Knapton Collection, August 1954, Robert S. Peabody Institute). Based on the RSPI ledger, the collecting at Falls Island began in 1934 and lasted until 1951. In September of 1954, Ted Stoddard began a survey of Cobscook Bay as part of his Northeastern Archaeological Survey Project. Stoddard (Pers. comm. April 28, 2023) recruited John Knapton to show him some of the archaeological sites in the area and notes that John "skipped Falls Island as being non-productive." This suggests that the sites on Falls Island were either eroded, depleted by the Knaptons, or a combination of both by the early 1950s.

Falls Island is seldom mentioned in the archived letters among Kingsbury, Byers, and Stoddard. The likely reason is that correspondence began in 1953, two years after the last artifact from Falls Island was collected by the Knaptons. However, Falls Island material, including a walrus tusk, is alluded to in the letters. For example, Kingsbury, writing to Byers on July 10, 1954, questioned, “was there walrus bone in Passamaquoddy Bay as well as Cobscook Bay?” (I. Kingsbury to D. Byers, 10 July 1954, letter, Stoddard Archive, Robert S. Peabody Institute). In another letter to Byers on July 28, 1954, Kingsbury wrote, “I would also like to know about the tusk of the female walrus” (I. Kingsbury to D. Byers, letter, 28 July 1954, Stoddard Archive, Robert S. Peabody Institute). This suggests that Kingsbury was becoming curious about the Knapton collection from Falls Island, as Falls Island is the only site in the Quoddy Region with a documented walrus tusk. The date of Kingsbury’s letters (July 1954) suggests he was helping the Knaptons prepare their collection for donation to the Robert S. Peabody Institute. It is not known why Kingsbury did not pursue the Falls Island collection as it lined up well with his research interests. An explanation is that Kingsbury was accustomed to studying flaked stone tools, like those recovered from the Eastport site, and did not recognize the Maritime Archaic period age of the bone and ground stone tool collection. It is also possible that Kingsbury was unaware of the Falls Island collection until helping the Knaptons prepare their collection for donation.

In a letter to Douglas Byers, September 14, 1954, Stoddard wrote, “Our major objective was to pick up the Knapton collection which is so important to Passamaquoddy Bay archaeology” (T. Stoddard to D. Byers, letter, 14 September 1954,

Stoddard Archive, Robert S. Peabody Institute). Stoddard was impressed by the “quality and size” of the Knapton collection and recognized that “comparative studies” could lead to the “definition of archaeological complexes in the area it represents” (T. Stoddard to D. Byers, memorandum, 14 September 1954, Stoddard Archives, Robert S. Peabody Institute). Stoddard (Pers. comm. May. 8, 2023) noted that the Knaptons donated the entirety of their collection in August 1954.

There are multiple archaeological sites on the island, as I discuss below, but the majority of the artifacts are not associated with a specific site in the ledger; instead, they are listed as “Falls Island General” (RSPI Ledger). The Knaptons marked the site location as Falls Island on each artifact, using a lead pencil and their own code (for example, F.I. was used for Falls Island). It is unclear if they kept more detailed notes, and if they did, where they are located. There is some evidence that notes may have been kept as in a letter to Stoddard on July 25, 1953, Kingsbury wrote, “I gave you, at the museum, John Knapton’s beveled adze and all subsequent findings with their notes” (I. Kingsbury to T. Stoddard, letter, 25 July 1953, Stoddard Archive, Robert S. Peabody Institute). If the Knaptons kept notes for the Falls Island collection, this information could provide valuable insights into site locations in the Quoddy Region.

3.2 Site Locations

A challenge in working with RSPI collections is that they were recorded using a different number system than the modern Maine Historic Preservation Commission system. The former was based on Warren K. Moorehead’s site designation system, while the latter is based on arbitrarily numbered UTM grids. This has led to a disparity in

site placement and nomenclature between RSPI and Maine Historic Preservation Commission (MHPC) maps (Figure 3.3). The RSPI site database for the area in which Falls Island is located uses 126/x numbers, while the current MHPC database uses 80.x numbers. The RSPI map of Falls Island (Figure 3.2) lists two sites, 126/20 and 126/43, in the same area on the northeastern side of the island. This may be due to a misunderstanding that occurred between the Knaptons, Theodore Stoddard, and RSPI about site placement on Falls Island. Stoddard never visited Falls Island, and presumably relied on the Knapton brothers' accounts in order to mark sites on RSPI maps. It is possible that during this process site locations became confused. In 1969, when Dean Snow created the MHPC site registry, he likely realized the mistake and split the sites (Figure 3.3). Therefore, 126/20 became 80.20 and moved to the north, while site 126/43 became 80.43 and remained in the same location. Our work (see chapter 6 below) indicates that Snow properly separated the sites. The Knaptons list several artifacts as having a provenience of 126/20, which they referred to as the "Eastern Beach." Site 126/20 (80.20) is the only site on Falls Island that has a gravel/sand beach.

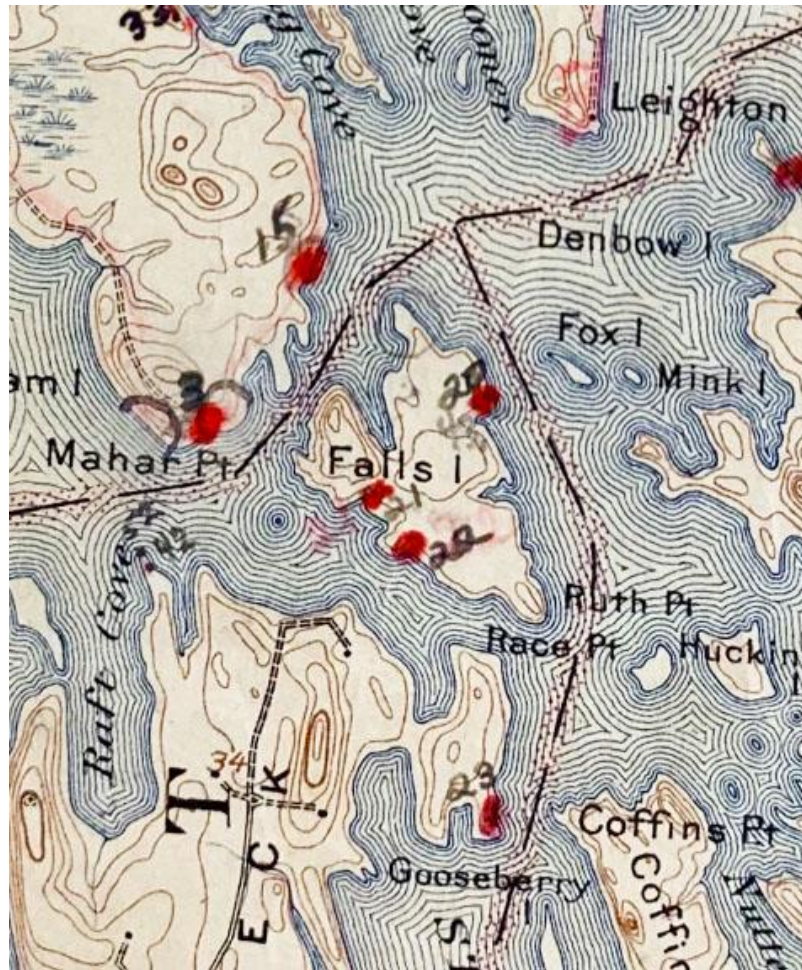


Figure 3.2: Robert S. Peabody Institute map showing the location of sites on Falls Island. Note the position of site 20, with “43” written faintly below it. (Curated at the RSPI.)

A midden associated with site 126/20 (80.20) was described as “6-8in. fire dirt & broken shell” (RSPI Ledger). Fire dirt was a common archaeological term used in the early and mid-20th century in the Gulf of Maine to describe greasy black organic soil. At the Moose Island site, Kingsbury and Hadlock (1951:23) described the remnants of a black soil midden (*sensu* Black 2004), stating, “its dirt blackened the hands. (Fire-dirt is an appropriate term.)” At the Taft’s Point midden, the basal stratum was referred to as shell-free “fire dirt” (Hadlock 1939:7; Robinson 2005:31). At the base of the Tranquility

Farm midden in Frenchmen's Bay, Hadlock (1943:343) observed "beach gravel, *fire dirt*, and crushed shells, about a circular pattern of fireplaces, the rocks of which were set in the glacial clay at the bottom of the shell heap" (Hadlock 1943:343, emphasis added).

The sites on the northeastern side of the island (80.20 and 80.43) were probably visited more frequently by the Knaptons than those on the western side (80.21 and 80.22). The northeastern sites have less treacherous currents, and would be easy to land and launch a small skiff from. The sites on the western side would require overland travel across the island, or, proper timing with the tides to avoid the violent currents of the Reversing Falls. Artifact provenience information also supports this theory, as eight artifacts are associated with the northeastern sites, while only one is associated with the western sites. The full extent of these sites prior to erosion is difficult to judge. Between 1934 and 1950 the Knaptons note finding artifacts from site 126/20 (80.20) "½ in shell, ½ on shore" indicating that the midden was actively eroding. By the 1950s the northeastern sites were nearly gone, as the Knapton's reported to Stoddard that Falls Island was "non-productive" (Pers Comm. T. Stoddard, April 28, 2023).

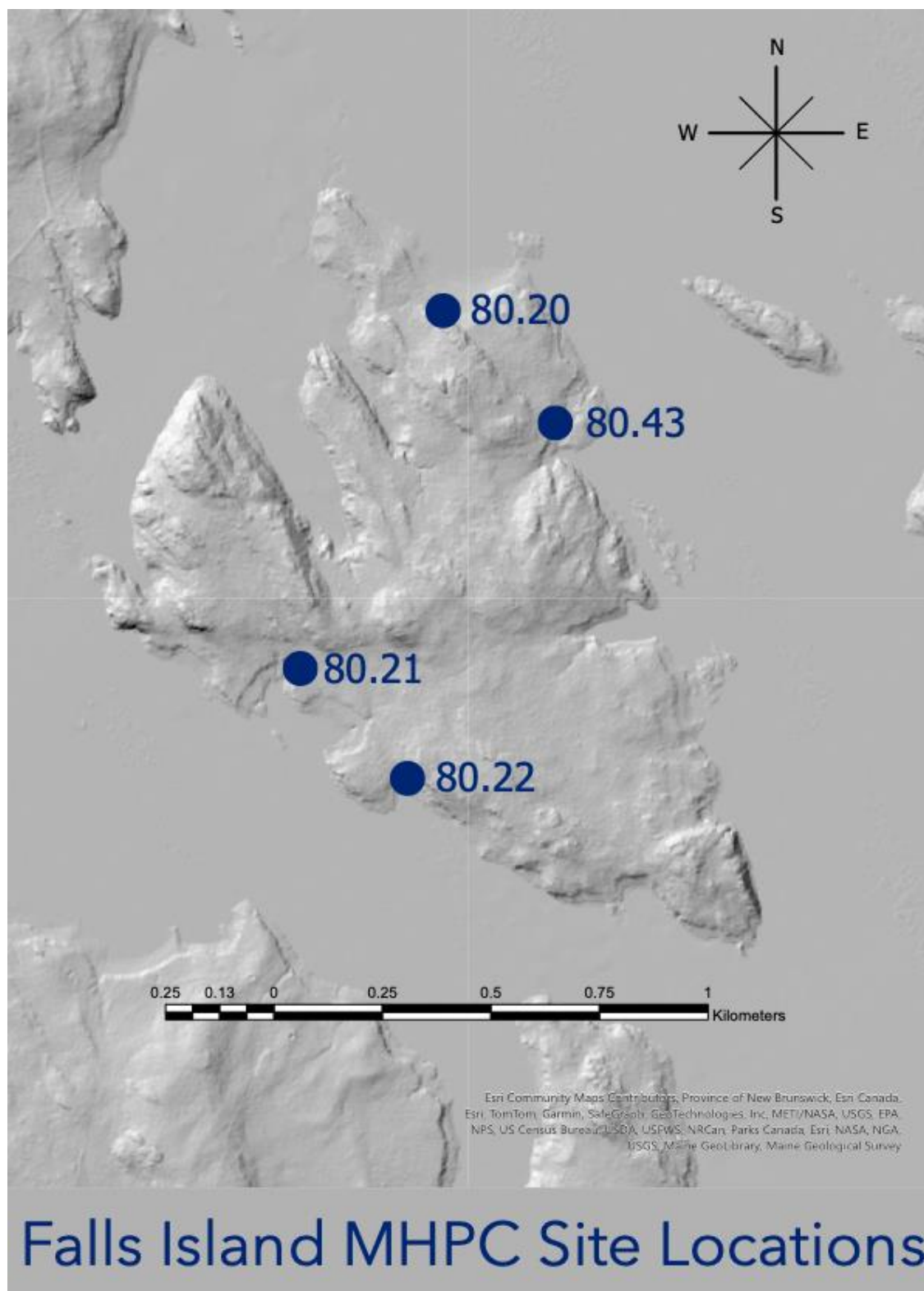


Figure 3.3: Location of archaeological sites on Falls Island as listed by the MHPC. Note the northeast-facing location of sites 80.20 and 80.43.

3.3 Robert S. Peabody Institute Visit

From December 12–16, 2022, Gabe Hrynick, Arthur Anderson, and I visited the Robert S. Peabody Institute (RSPI), in Andover, Massachusetts catalogued and photographed the Falls Island collection. Our time was limited to five days as the RSPI was closing for renovations and the collections were being transferred into storage immediately after our visit. The time constraint meant we had to work quickly, and thus restricted our detailed measurements to diagnostic artifacts (e.g., projectile points). In total we photographed all 112 artifacts in the current Falls Island collection. Subsequent research was conducted using the data gathered during our visit.

During the cataloguing process, we used the RSPI artifact accession numbers. Our catalogue consisted of applicable data from the RSPI artifact ledger, which included accession number, site and site number, collector, date collected, and remarks. We also added artifact description, measurements, artifact label, additional notes, and photo numbers. Our artifact description was general (e.g., adze, projectile point), while additional notes recorded more detailed information (e.g., lithic material, wear patterns) that may not be visible in photos. Measurements were taken using a digital vernier caliper and due to time constraints, were generally limited to the longest axis. If the artifact was considered diagnostic (e.g., projectile point) multiple measurements were taken. Each artifact was photographed on the dorsal and ventral surfaces. We used a photography station using a black velvet backdrop, lighting stands, archaeological scale, and mounted mirrorless camera.

Chapter 4: Artifact Analysis

The artifacts I describe in this thesis are referred to according to their RSPI accession number, which is an arbitrary number based on date of receipt. There is a disparity between some of the RSPI accession numbers and the original accession numbers within the “148/” range; additional Falls Island artifacts were located during collection re-evaluations in the 1990s and are identified within the “90.” range. Attributes are described, and provenience information, if provided, is considered. Artifacts are assigned temporally based on cultural affiliations and comparisons with sites exhibiting good provenience in the Maritime Peninsula, Atlantic Northeast and New England.

4.1 Late Maritime Archaic Period (5500–3500 Cal BP) Artifacts

The Late Maritime Archaic period collection is extensive, including 20 flaked-stone, ground stone, and bone tools. Much of the collection shows evidence of use-wear, suggesting Falls Island was an occupation or utilitarian site. The scarcity of LMA period sites in the region makes this collection a valuable addition to the archaeological record.

Table 4.1: *Artifacts associated with the Late Maritime Archaic Period.*

Catalogue Number	Artifact Description	Category
137/13357	Massive utilized/retouched flake	Flaked stone
148/20299F	Massive utilized/retouched flake	Flaked stone
148/20299G	Massive utilized/retouched flake	Flaked stone
148/20299I	Massive utilized/retouched flake	Flaked stone
148/20308	Massive utilized/retouched flake	Flaked stone
148/20309	Massive utilized/retouched flake	Flaked stone
148/20255	Massive utilized/retouched flake	Flaked stone
148/20290	Massive bifacial utilized/retouched flake	Flaked stone
148/20239	Contracting-stemmed projectile point	Flaked stone
148/20211	Large ovate biface	Flaked stone
148/20318	Bone foreshaft	Faunal
148/20321	Walrus tusk	Faunal
148/20317	Adze	Ground stone
148/20314	Adze	Ground stone
148/20313	Adze	Ground stone
148/20312	Adze bit	Ground stone
148/20305	Large hammer stone	Ground stone
148/20303	Bevelled pecking stone	Ground stone

4.11 Flaked Stone

The flaked stone collection attributed to the Late Maritime Archaic period includes seven massive/utilized or retouched flakes, one massive bifacial utilized or retouched flake, a contracting-stemmed projectile point, and a large ovate biface. It is noteworthy that flaked stone does not appear to be a common artifact class in LMA period middens (e.g., Rowe 1940:10; Spiess et al. 1983:94). This lack of lithic material insinuates that a bone industry may have been preferred during LMA period, which is supported by the large bone assemblages and comparatively small lithic assemblages at LMA sites with faunal preservation (Bourque 1995; Byers 1979 ; Tuck 1976 ; Will 1981).

4.11.1 Massive Utilized or Retouched Flakes

There are seven massive utilized or retouched flakes in the Falls Island collection (137/13357; 148/20299F; 148/20299G; 148/20299I; 148/20308; 148/20309; 148/20255). These flakes have thick platforms and retouch and/or use wear on at least one margin (Figure 4.1). The spatial relationship between the thick platform and utilized or retouched edges suggests the platforms may have functioned as hand grips. Only one of these flakes has provenience information, which indicates it was collected from “beach of east side; and broken shell” (RSPI ledger).

Artifact 148/20290 is similar to the massive utilized or retouched flakes; however, it is bifacially thinned and retouched. It exhibits the same massive structure, with a thick platform, and a retouched blade margin that is somewhat straight.

Technologically and morphologically, these massive flakes closely resemble the massive utilized and/or retouched flakes from the LMA component of the Beaches site

in Newfoundland (Carignan 1975:44). Carignan (1975:55) suggests these flakes may have functioned as choppers, cutting tools or scrapers. Similar to the flakes from Falls Island, the Beaches site flakes were made on massive flakes with utilization and/or retouch typically occurring along the lateral edge (Carignan 1975:124).

Carignan (1975:124) believed that LMA flaked stone technology was characterized by the use of large, expanding flakes as the main tool blank. Similar massive flakes are visible in Kingsbury and Hadlock's (1951:25) report on the Moose Island site, which is less than 10 km from Falls Island, and directly facing it across open water. The Knaptons also visited and collected from the Moose Island site, which yielded a large collection of LMA artifacts. The flakes are similar to those from the Beaches site and Falls Island; unfortunately, the photos in Kingsbury and Hadlock's report do not provide enough detail to view utilization or retouch. It is possible, as Carignan suggests, that these massive expanding flakes are a staple of the LMA period lithic industry.

At N'tolonpemk (ME 96.02) Brigham et al. (2005:151) recovered 107 choppers, which have several commonalities with the massive utilized or retouched flakes from Falls Island. The choppers typically had an irregular outline, and deliberate modification was generally limited to "some shaping and varying degrees of thinning along working edges" (Brigham et al. 2005:151). Of the 39 choppers recovered from dateable features, 30 are attributed to the Maritime Archaic period, while nine are attributed to the Maritime Woodland (Brigham et al. 2005:153).

Due to the absence of these massive utilized/retouched flakes from coastal Maritime Woodland period sites in the Quoddy Region, and the presence of these massive flakes or choppers at LMA sites in the Atlantic Northeast, I am associating the same tools from Falls Island with the LMA period.

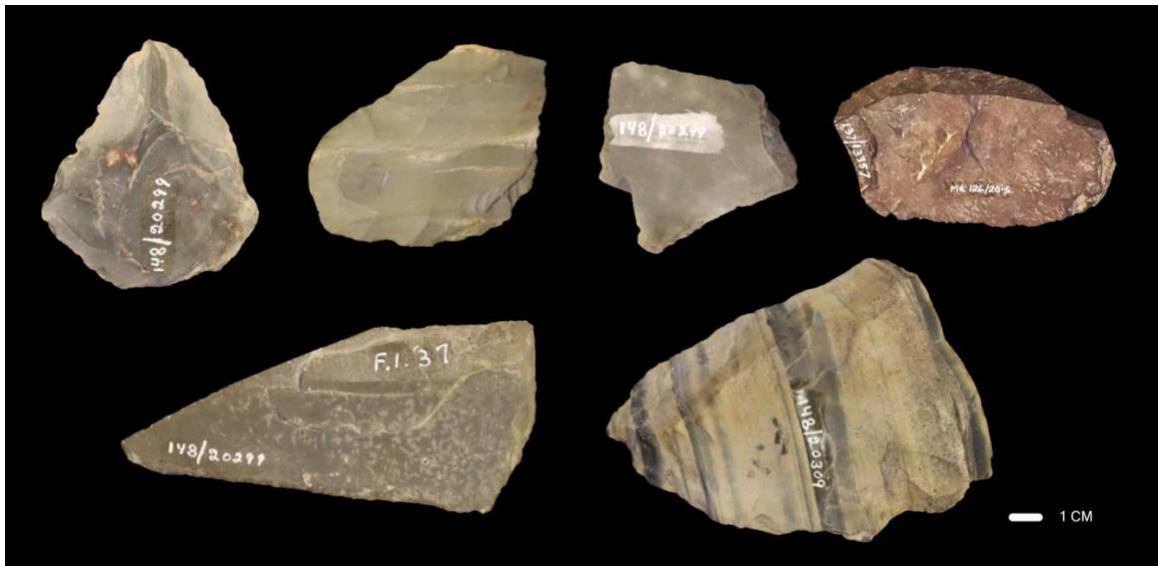


Figure 4.1: Massive expanding or utilized flakes recovered from Falls Island. Top, left to right, 148/20299I, 148/20308, 148/20299F, 148/13357. Bottom left to right, 148/20299G, 148/20309. (Curated at the RSPI.)

4.11.2 Contracting-Stemmed Projectile Point

Artifact 148/20239 is a large, contracting-stemmed projectile point which is morphologically consistent with the LMA period (Figure 4.2). The stem retains a remnant striking platform at its base, which is an indication that the projectile point was made from a large flake. The flake was bifacially worked at approximately right angles along the margins until the desired shape and thickness were achieved. Flakes from the margins did not travel to the midline, and subsequently, stacking fractures were created along the midline of both dorsal and ventral surfaces, which caused an asymmetrical biconvex cross section. The blade margins are straight to slightly convex and exhibit an

undulating edge. There is pronounced stem-shoulder asymmetry; the stem is not positioned centrally between the shoulders, making the shoulder lengths dissimilar. The long shoulder forms an approximate right angle, while the short shoulder forms an obtuse angle. The projectile point is transversely fractured in the medial section of the blade, approximately 3 cm above the shoulders. The mean thickness/width ratio is 0.37, which is identical to the mean thickness/width ratio for Late Maritime Archaic projectile points from Turner Farm. Provenience records are limited; it is cataloged as a Falls Island general find, meaning it was found on Falls Island, but it is not linked to a particular site. The biface is not water rolled, which suggests that it may have been recovered in situ or shortly after it had eroded.

Contracting-stemmed projectile points are associated with the LMA period. These points are characterized by straight parallel to contracting stems, which regularly remain unthinned, and tend to have remnant striking platforms at the base (Bourque 1995:44). Bourque (1995:44) states that these points tend to be narrow and thick. The shoulders on these points can be symmetrical or asymmetrical. Davis (1978:20) recognizes a unique lithic reduction technique used to make these projectile points. He states, "bifacial flaking is at oblique or at right angles along the margins, which tends to leave ridges on the dorsal and ventral surfaces . . . making most specimens asymmetrically biconvex in cross section." At Turner Farm, Bourque (1995:44) associated Late Maritime Archaic contracting-stemmed projectile points with a radiocarbon date of 4390 ± 55 BP. Similar projectile points have been recovered from LMA contexts throughout the Atlantic Northeast (Bourque 1995; Carignan 1975; Cox

2021; Hadlock 1939; Kingsbury and Hadlock 1951; Moorehead 1922; Sanger 1973).

These projectile points generally share the traits listed above, which suggests a shared lithic technology throughout the Atlantic Northeast during the LMA period.

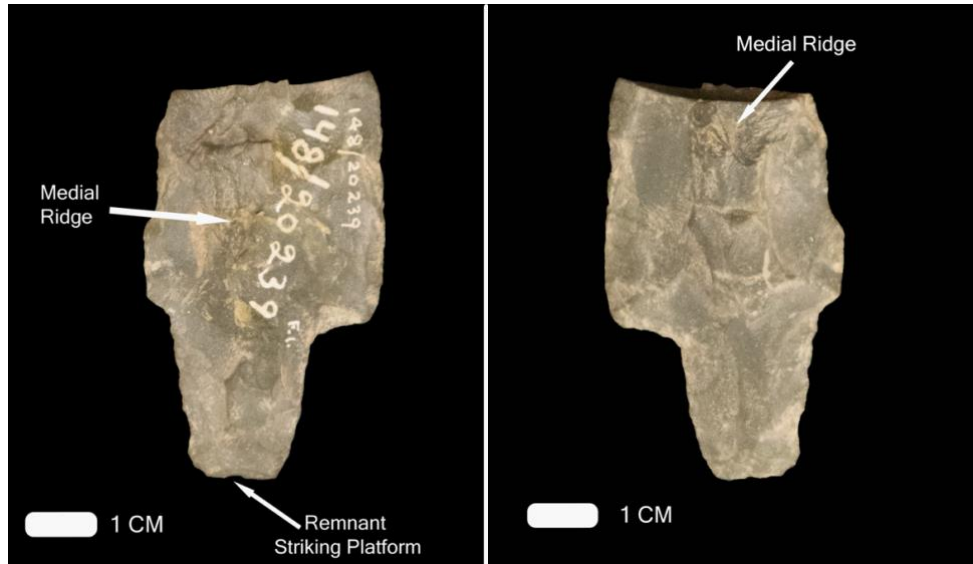


Figure 4.2: Obverse and reverse sides of artifact 148/20239, a contracting-stemmed projectile point from Falls Island. Note the contracting stem, remnant striking platform at the base of the stem on the obverse side, and medial ridge on the midline of both faces created by stacked step fractures. (Curated at the RSPI.)

4.11.3 Large Ovate Biface

Artifact 148/20211 is a large, ovate biface. It may have functioned as a scraper or chopper (Figure 4.3). In the Atlantic Northeast these bifaces have been attributed to the LMA period (Leonard 2002:7; Tuck 1991). It may have functioned as a knife or scraper for butchering game.



Figure 4.3: Artifact 148/20211, the large Ovate Biface from Falls Island. (Curated at the RSPI.)

Leonard (2002:7, Figure 15) documented a similar large ovate biface made from Ramah Quartzite, which was recovered from a sandbar in Robichaud, New Brunswick. Leonard (2002:7) suggested the biface was a “flensing knife ideal for processing sea mammals.” Similar large ovate bifaces have been documented in the Maritime provinces and associated with LMA period marine mammal processing (Leonard 2002:7; Tuck 1976, 1991).

4.12 Bone Foreshaft

Artifact 148/20318 is a large bone foreshaft (21 cm in length) and likely made from deer (*Odocoileus virginianus*) or moose (*Alces alces*) long bone (Figure 4.4). It has two bilateral lugs at its distal end, and a long groove runs down the center of the entire

reverse face. The foreshaft is transversely fractured and refit with glue approximately 3 cm below the bilateral lugs. The proximal end appears to be concave with two ears, one of which is broken. The foreshaft widens towards the proximal end, which differs from the typical foreshaft design where the shaft narrows to a point that fits into socket. The broken condition of the foreshaft likely led to its disposal in a shell midden.

Bone foreshafts are common at LMA sites in the Atlantic Northeast where good faunal preservation is present. They are generally associated with marine hunting (see Bourque 1995; Byers 1979; Hadlock 1939; Tuck 1976), and their absence from Maritime Woodland period sites makes foreshafts an index fossil for the LMA period. Tuck (1976:38) and Byers (1979:70) suggested that the bilateral lugs on foreshafts were used to hold barbed harpoons in place. Bourque (1995:67) hypothesized a different use, suggesting that the lugs were attached to a wooden shaft, while the harpoons would be set into a socket in the opposite end. Bourque (1995:67) based his hypothesis on post-contact Innu foreshafts and one specimen from Turner Farm which had the remnants of a socket.

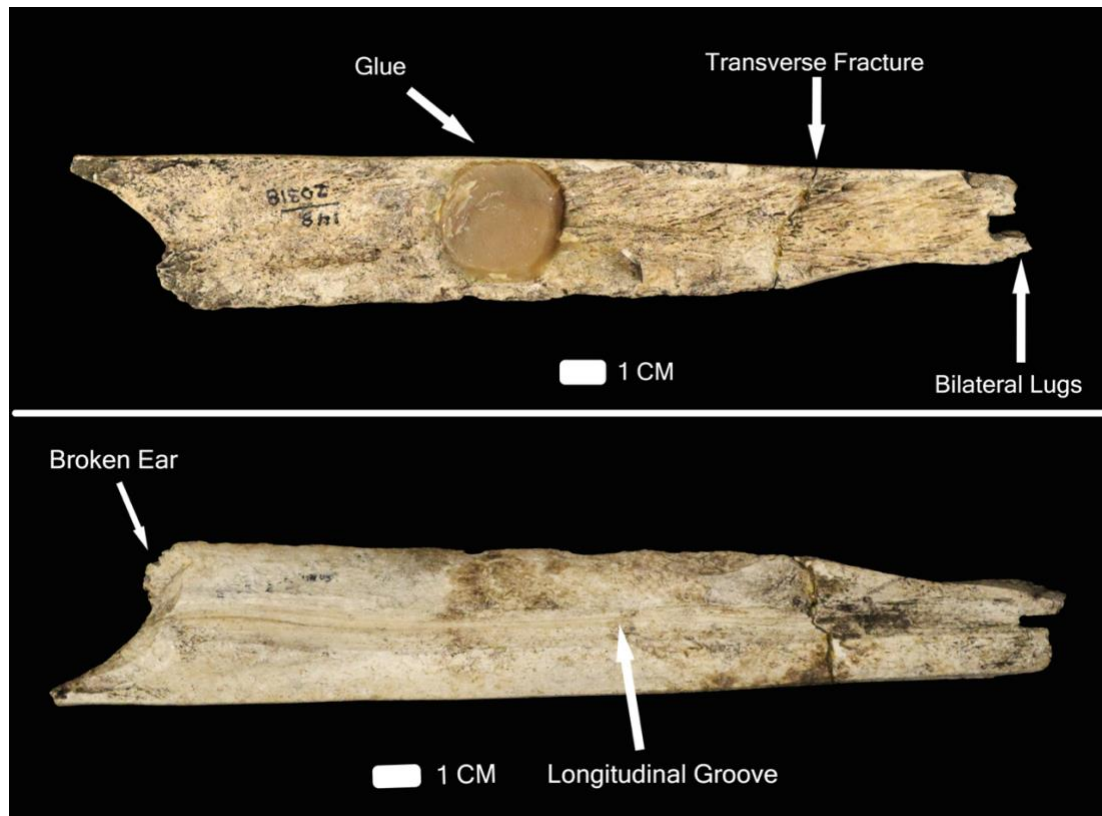


Figure 4.4: Obverse (top) and reverse (bottom) faces of artifact 148/20318, the bone foreshaft from Falls Island. Note the broken bilateral lugs on distal end of foreshaft, transverse fracture in the upper medial foreshaft which has been refit with glue, and broken ear on the proximal haft. (Curated at the RSPI.)

4.12 Faunal Remains

A single walrus (*Odobenus rosmarus*) tusk was documented in the Falls Island collection (Figure 4.5). Due to its length of 18 cm, which is relatively small, Art Spiess and Matthew Betts proposed the tusk is from a juvenile or female walrus (Pers Comm. Art Spiess & Matthew Betts, April 2023). The well-preserved condition of the tusk implies that it was recently eroded at the time it was collected or was recovered directly from a shell midden. One end of the tusk is split and incised lines are visible on the tusk.

it is unclear whether these lines are anthropogenic or if they are caused from natural wear during the walrus's lifetime.

Although uncommon, several walrus tusks have been recovered from LMA sites in the Atlantic Northeast. A small juvenile or female walrus tusk was attributed to Occupation 2 at Turner Farm (Bourque 1995:88). The tusk was radiocarbon dated to 3920 ± 25 BP (Bourque 1995:88). Using OxCal I calibrated that date using a marine reservoir correction and determined the corrected date to be 4422–4249 BP (2σ calibration using Oxcal 4.4) using a ΔR of -78 ± 17 from Eastport, which suggests Bourque's uncalibrated radiocarbon date appears too recent. Bourque suggests that the waters in the Gulf of Maine during the LMA period were too warm to support walrus, and therefore the tusk may have been traded from a more northern climate (Bourque 1995:88). A cut walrus tusk was also recovered from the Basin site in midcoast Maine, which Bourque attributes to the LMA period (Bourque 1992:108).

In Newfoundland walrus tusks have been excavated at Port au Choix, while in New Brunswick a walrus baculum was recovered from the intertidal zone near Beausejour. At Port au Choix, Tuck (1976:32, 45) noted a split and grooved walrus tusk dagger, and two walrus tusk adzes from burial contexts. Size measurements for these tusks are difficult to determine as the tusks have been altered significantly from their original form. At Beausejour, Colin Mackinnon recovered a walrus baculum eroding from a sunken forest (c. 4000 BP) in the intertidal zone. The baculum was found in the same vicinity and context as forty-eight plummets, and therefore associated with the LMA period (Mackinnon 2003).

Keenlyside (1999:56) suspects that walrus was an important resource in the Maritime Provinces dating back to the Late Paleoindian period, noting that walrus was an important “source of oil, food and raw materials (bone, ivory and hides).” Based on evidence from the L’Anse Amour and Port au Choix burials where walrus tusks were used as grave offerings, Keenlyside (1999:59–60) also proposed that walrus were a spiritually significant animal.



Figure 4.5: Artifact 148/20321, a walrus tusk from Falls Island. Note the split end and incised lines. (Curated at the RSPI.)

4.13 Ground Stone

Ground stone is well represented in the LMA period collection from Falls Island. The most common forms are large pecked and ground adzes with asymmetrically beveled bits. The bit ends tend to be damaged, while poll ends are typically battered. The damaged state of most adzes from Falls Island suggests they were utilized for heavy woodworking; this is in contrast to mortuary sites which typically feature finally crafted,

intact, adzes and gouges. Thus, the damaged condition of the Falls Island ground stone implies the island was an occupation or utilitarian site during the LMA period.

4.13.1 Adzes

Artifact 148/20317 is a large adze made from dark igneous material (Figure 4.6). It is pecked, ground, and polished. The bit displays a high degree of polish, with negligible use wear present on the bit. The thickest point of the adze is near the mid-section; from the mid-section the body tapers towards the poll and narrows only slightly towards the bit. The cross section is plano-convex, with a flat ventral surface and rounded dorsal. The poll end is rounded and does not show evidence of battering. The bit is beveled from both dorsal and ventral sides; however, the bevel is more pronounced on the dorsal side, placing the bit below the midpoint. There is no hafting element. Pecking is visible on the central body of the adze, while the poll and bit are ground and polished.

Similar adzes were recovered from Taft's Point (Hadlock 1939:9, Plate 5a). These adzes were also made of "dark basic, igneous rock" and created by pecking, grinding and polishing (Hadlock 1939:8). It is notable that some of the adzes from Taft Point had highly polished bits that lacked use-wear (Hadlock 1939:8). At the Curtis Site, a LMA period site, in Twillingate, Newfoundland, Thibaudeau (1993:9–10) noted pecked and ground stone adzes with similar half circular cross sections. Moorehead (1922:Figures 42, 51) recovered morphologically similar adzes from LMA period cemeteries in Haskell and Emerson, Maine. Benjamin Smith (1948:38–40) analyzed many of the adzes recovered by Moorehead, including those from Haskell and Emerson, and classified

them morphologically. In Smith's (1948:38) classification, the Falls Island adze fits well with type 3, profile C, which he suggests was conducive to heavy woodworking as the center of gravity is near the bit. Smith (1948:38) noted that this type of adze was well documented at LMA period sites throughout Maine.

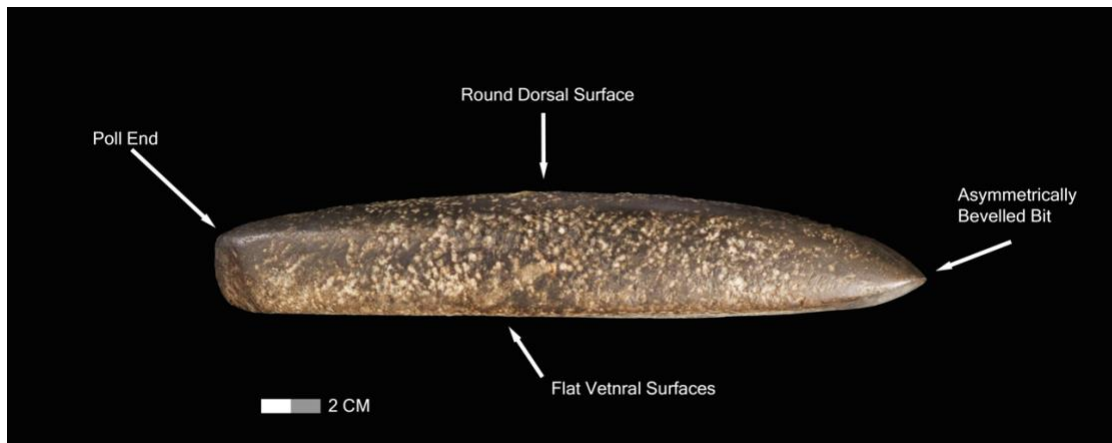


Figure 4.6: Profile view of ground stone adze 148/20317. Note the plano-convex cross section and asymmetrically beveled bit. (Curated at the RSPI.)

Artifact 148/20314 is the largest adze in the collection (Figure 4.7). It is made on a felsic volcanic stone by pecking, grinding, and polishing. It has a rectangular outline with straight parallel sides, straight poll end, and asymmetric bit. Heavy battering is visible on the poll element and a corner has been broken, which suggests that the adze was struck with a maul or club. The bit element is similar to 148/20317 as it is beveled from both dorsal and ventral sides, but the bevel is greater on the dorsal side, positioning the bit below the midline. There is no hafting element. The dorsal surface is heavily bleached, while the ventral surface shows minor bleaching. This differential bleaching may indicate that the adze was recovered from a black soil midden, with the heavily bleached dorsal surface exposed to acidic ground water (Pers Comm. David

Black, September 2023). There is a provenience of “Falls Island Beach 7-38” associated with the adze, suggesting it was found at the eastern beach site 80.20.



Figure 4.7: Dorsal outline (top), and profile (bottom) views of adze 148/20314. Note the sticker which suggests the adze was recovered from Falls Island beach in 1938. Also note the rectangular outline, bleaching, and asymmetrically beveled bit. (Curated at the RSPI.)

Artifact 148/20313 is an adze made from a greyish slate material. It is pecked, ground and polished. The cross-section is plano-convex, while the poll element is angular and shows evidence of battering. The bit is beveled from the dorsal side and is in line with the ventral surface. The bit is severely damaged; however, a small undamaged area shows evidence of grinding and polishing. There is no hafting element. A similar adze has been recovered from a shell midden on Great Mosher Island Site B and was associated with the LMA period based on the morphology (Doyle et al. 1985:46, Figure 5).

Artifact 148/20312 is an adze which is transversely fractured below the bit. The adze was made by pecking and grinding. The bit is damaged and worn asymmetrically. The material is unknown, but is possibly a volcanic groundmass.

4.13.2 Hammer stones and Pecking Stones

Artifact 148/20305 is a large, cudgel shaped hammer stone. It is transversely fractured in the medial section (Figure 4.8). Written on the tool is, “ $\frac{1}{2}$ in shell, $\frac{1}{2}$ on shore” indicating that the shell midden was actively eroding at the time of collection. There are pecking marks along the margins of the thicker end. Suttie (2005:202) identified similar hammer stones in New Brunswick collections and suggested they were used in the production of ground stone tools.

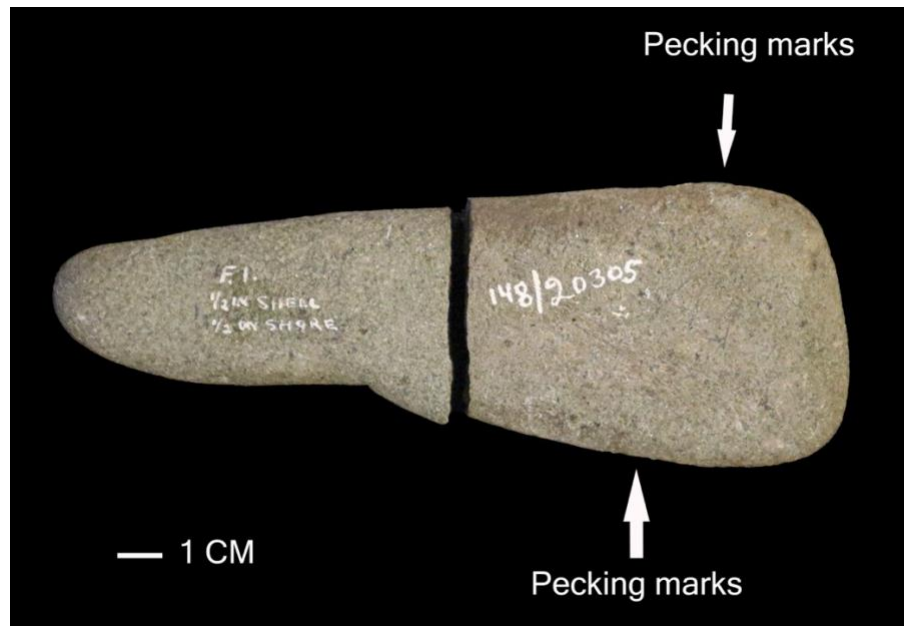


Figure 4.8: Artifact 148/20305, a large hammer stone with evidence of pecking around its margins. Note the writing which states “ $\frac{1}{2}$ in shell $\frac{1}{2}$ on shore” which suggests the sites the Knaptons were collecting from were actively eroding. (Curated at the RSPI.)

Artifact 148/20303 is a beveled pecking stone (Figure 4.9). The margins are asymmetrical and show evidence of pecking, grinding, and polishing, while the faces are flat with grinding and polishing wear present. A large portion of the margins show wear from pecking. An attribute that stands out on this artifact is a margin that retains three distinct bevels (Figure 4.9). These well-defined bevels suggest that this is a fragment of a beveled ground stone tool that was repurposed into a pecking stone.

John Cross, of Bowdoin College, (Pers Comm. October 2023) examined photographs of the tool and noted that small circular pits visible on the stones margins are likely from the shaping of a ground stone tool through repetitive pecking motions. Cross suggested that the majority of the pecking took place along the central mass of the margins, which created small pits from vertical impact. Cross stated that this type of wear is typical of pecking stones which are used in the manufacture of ground stone tools. Cross also noted three deep parallel grooves on the face of the pecking stone, which he suggested could be from possible use as an anvil stone, with slight position shifts of the material being worked against the anvil. Cross agreed that this pecking stone was likely a reworked fragment of a ground stone tool as he noted fine striations on the faces of the stone, which are likely from the grinding and polishing of the original tool.

The beveled pecking stone offers a unique window into the life-history of a tool, first as a beveled ground stone adze or gouge preform, then a ground stone fragment that was repurposed into a pecking stone used in the manufacture of large ground stone tools by repeated pecking, and as a curated object that was continually modified until

entering the archaeological record. It is noteworthy that the user of this pecking stone deemed the bevels important enough to keep them intact, suggesting the user appreciated the aesthetic of the bevels, or valued the previous version of the tool, which the bevels may have represented.

According to a letter from Isaac Kingsbury to Theodore Stoddard, John Knapton recovered a beveled adze from Cobscook Bay; unfortunately, Kingsbury does not mention a specific site (RSPI Archives). At the Eastport site, Hadlock and Kingsbury (1951:25, Plate 1, b 3) recovered a fragment of a beveled adze which was highly polished and made from “fine-grained light-coloured rock like argillite (Hadlock and Kingsbury 1951:25). Moorehead (1913:41, Figure 13) illustrates a beveled gouge from the Emerson cemetery. Eldridge (2007:9, Figure 9) illustrates a beveled gouge fragment from a LMA period site at Monhegan Island, Maine; the bevels on this gouge are morphologically similar to the bevels on the pecking stone from Falls Island.

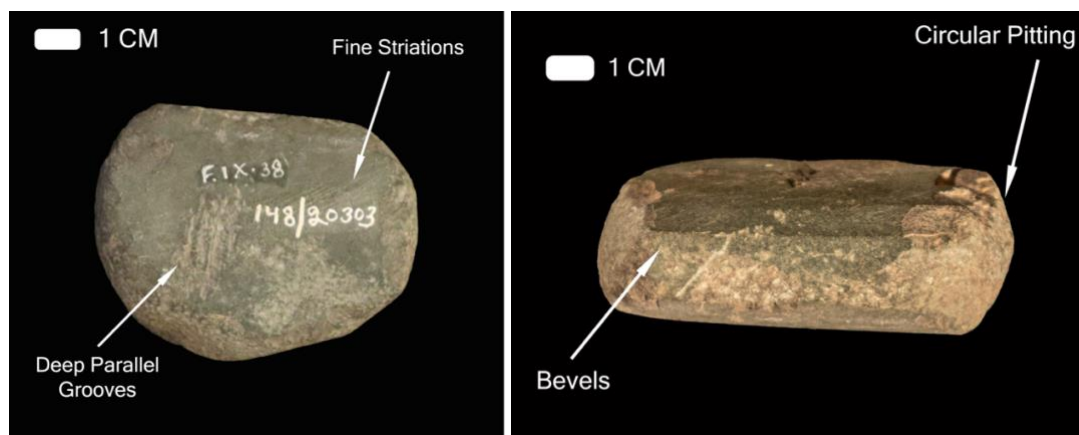


Figure 4.9: Artifact 148/20303, a beveled pecking stone. Note the margin retaining three distinct bevels and pecking marks along the remaining margins. (Curated at the RSPI.)

4.2 Transitional Archaic Period Artifacts (4000–2700)

There are twelve artifacts assigned to the Transitional Archaic period from the Falls Island collection. The collection consists of nine flaked stone artifacts, as well as two ground stone and one faunal artifact.

Table 4.2: Artifacts associated with the Transitional Archaic occupation of Falls Island.

Catalogue Number	Artifact Description	Category
148/20248	Orient Fishtail-like projectile point	Flaked stone
148/20228	Wayland notched-like projectile point	Flaked stone
148/20238	Expanding-stemmed projectile point	Flaked stone
148/20245	Flare-stemmed projectile point	Flaked stone
148/20299A	Cortical spall tool	Flaked stone
148/20273	Thick unifacial scraper	Flaked stone
148/20256	Thick unifacial scraper	Flaked stone
148/20249	Thick unifacial scraper	Flaked stone
148/20259	Thick unifacial scraper	Flaked stone
148/20315	Adze	Flaked and ground
148/20320	Bone gouge	Faunal

4.21 Flaked Stone

The flaked stone collection from Falls Island consists of four projectile points, four thick unifacial scrapers, and one cortical spall tool. Similar artifact forms have been

recovered from sites within the Maritime Peninsula and dated to the Transitional Archaic period.

4.21.1 Projectile Points

Artifact 148/20248 is projectile point with a slender expanding stem, slightly concave base, rounded asymmetrical shoulders, and narrow blade margins that form a lanceolate shape (Figure 4.10 left). It resembles Orient Fishtail projectile points described by Ritchie (1961:39), and the metrics fit those listed by Boudreau (2016:109) for Orient Fishtail projectile points. Orient Fishtail points are associated with the Transitional Archaic and Early Maritime Woodland periods in the Quoddy Region (Black 2018:21), and the Maritime Peninsula more broadly (Boudreau 2016:107–109). An Orient Fishtail projectile point from Rum Beach on the Bliss Islands is tentatively dated to 3300–3000 BP based on artifact typology and site formation processes (Black 2000:98), and several Orient Fishtail-like projectile points have been collected from the intertidal zones of the Eastern Quoddy Region (Abbott 2020; Black 2018:21–23).

Artifact 148/20228 is a projectile point with wide asymmetrical side notches that sit low on the blade margins (Figure 4.10 right). The base is convex, and the blade margins are straight. One blade margin exhibits retouch, suggesting use as a knife. In morphology it closely resembles Wayland Notched projectile points as defined by Dincauze (1968:23–24, Plate 20). The metrics of the point fit best with Boudreau's (2016:105) Wayland Notched Dudley variety. Dincauze (1968:24) suggests that Wayland Notched points likely functioned as projectile points, with larger variants possibly employed as knives.

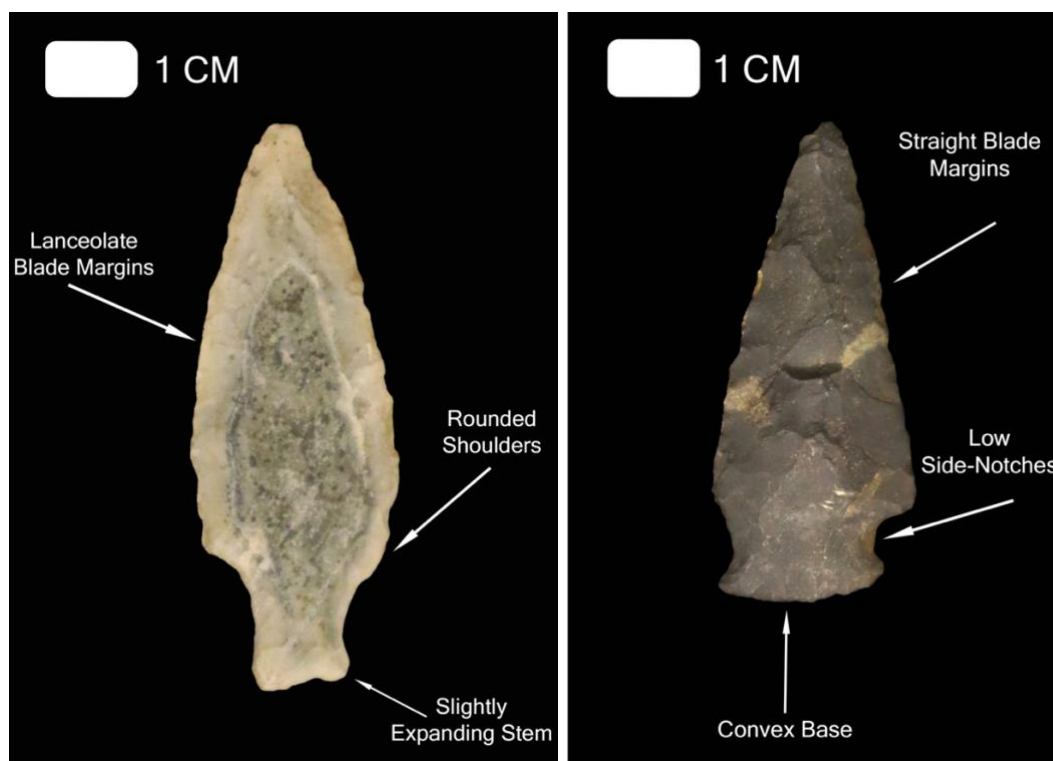


Figure 4.10: Left artifact 148/20248, Orient Fishtail-like projectile point. Note the lanceolate blade, rounded shoulders and expanding stem. Right artifact 148/20228, a Coburn-like projectile point right. Note the straight blade margins, low side-notches, and convex base. (Curated at the RSPI.)

Artifact 148/20238 and 148/20245 are projectile points that do not fit neatly into established Transitional Archaic typologies. 148/20238 has an expanding stem with straight, prominent shoulders. The stem-shoulder angle is acute and the base of the stem and blade margins are straight. This specimen has a fractured shoulder, and the stem is partially broken.

148/20245 also features an expanding stem with a straight base, straight pronounced shoulders, and an acute stem-shoulder angle (Figure 4.11). The blade margins are straight, and the tip of the blade is transversely fractured.

Dincauze (1968:Plate 20) illustrates a similar projectile point from the Coburn site, which she describes as a “flared-tang point.” This point has an expanding stem with a straight base, acute stem-shoulder angles, and straight blade margins . Dincauze (1968:28) suggests that similar points have been found at the Ellsworth Cemetery in Maine, and the Hawes site in Massachusetts. In Robbins’ report on the Hawes site (Robbins 1963:30–33), Dincauze (1968:87) recognized two “right-angle-shouldered flared-tang points.” These projectile points were found in a cremation burial pit in association with fragments of calcined bone, chipped stone projectile points and a ritually killed steatite vessel (Robbins 1968:32–33). Dincauze suggests that the site post-dates the Coburn phase of the Susquehanna tradition and is likely contemporary with the Orient phase of the Transitional Archaic period (Dincauze 1968:87–88).

Similar flare-tang projectile points have been identified and associated with the Transitional Archaic period in the Gulf of Maine and Eastern Quoddy region by Bourque (1995:111), Cox (2021:31, Figure 27), Betts and Hrynick (2021:151, Figure 7.5) and David Black (Pers Comm. October 2023).

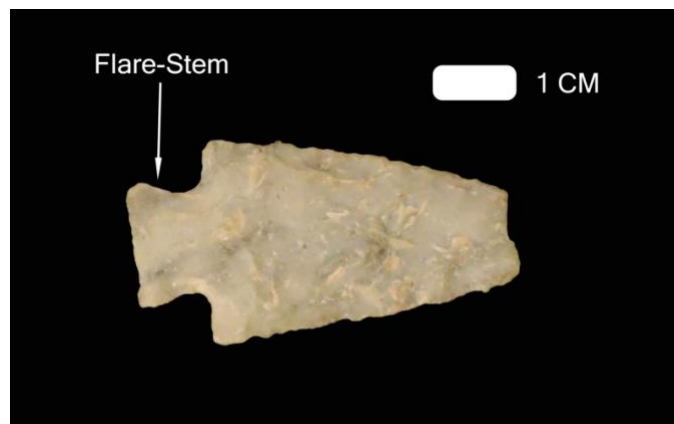


Figure 4.11: Artifact 148/20245, a flare-stemmed projectile point from Falls Island. Note the flaring stem and broken tip. (Curated at the RSPI.)

Table 4.3: Metrics for Transitional Archaic points from Falls Island.

Transitional Bifaces	Length (mm)	Width (mm)	Thickness (mm)	Basal Width
148/20228	50.72	21.85	8.78	17.80
148/20240	55.12	25.14	9.16	13.56
148/20248	59.25	21.25	7.05	10.29
148/20245	45.03	24.72	6.49	14.60

4.21.2 Cortical Spall

Artifact 148/20299A is a large cortical spall struck from a quartz cobble. The spall retains almost the entirety of its cortex on the dorsal surface. It closely resembles cortical spall tools which Black (2018:29) associates with the Transitional Archaic period in the eastern Quoddy Region. Black (2018:29–30) identified similar cortical spalls made from quartzites and rhyolite from the Rum Beach site, and states that, in the eastern Quoddy region, these spalls “only appear associated with Terminal Archaic-Early Maritime Woodland tools.”

4.21.3 Thick Unifacial Scrapers

Artifacts 148/20273, 148/20256, 148/20249 and 148/20259 are thick unifacial scrapers (Figure 12). All four are technologically and morphologically similar. They are all made on thick flakes with a flat ventral and rounded dorsal surface, which gives them a plano-convex cross section. The working edges exhibit steep retouch, with flakes

traveling from the ventral surface over the dorsal. The scrapers tend to be widest just behind the bit and taper towards the proximal end.

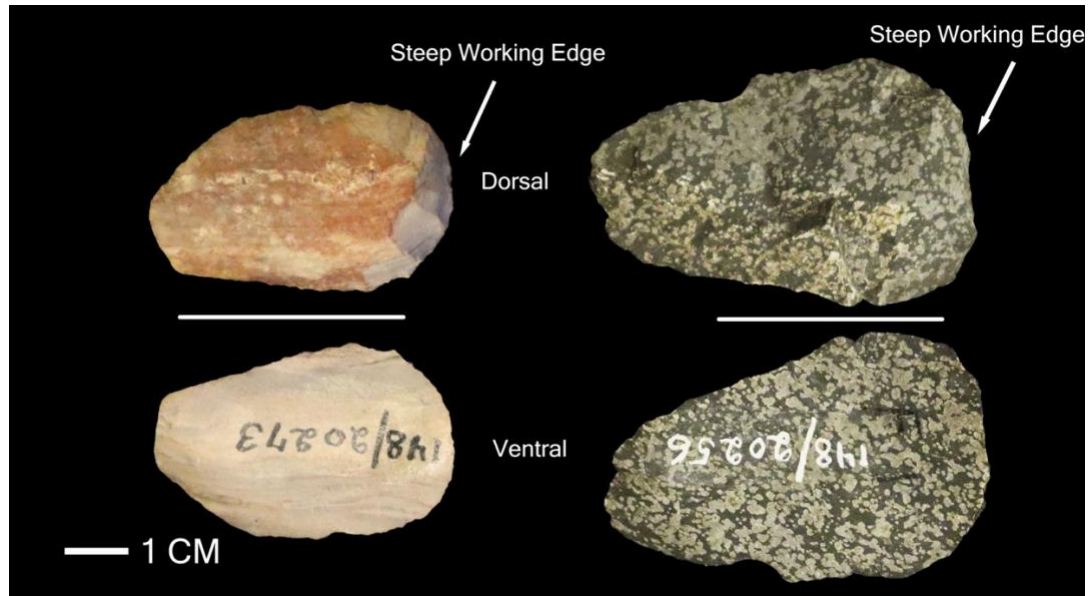


Figure 4.12: Artifacts 148/20273 (left) and 148/20256 (right) are thick unifacial scrapers. Note the reddish cortex on the dorsal surface of 148/20273. Also note the steep working edges, and flat ventral surfaces on both scrapers. (Curated at the RSPI.)

Black identified two remarkably similar thick unifacial scrapers from Deer Island Point (BfDr-5) (Figure 4.13). The two scrapers were manufactured on thick flakes of light grey banded volcanic material, one of which retains a portion of red cortex resembling that of 148/20273. Both ventral surfaces are flat, with rounded dorsal surfaces, and steep working edges. These scrapers are also thickest around the bit and taper to the proximal end. Deer Island Point is believed to temporally span the Transitional Archaic through Late Maritime Woodland periods (Gilbert 2011; Pers Comm. David Black, October 2023).

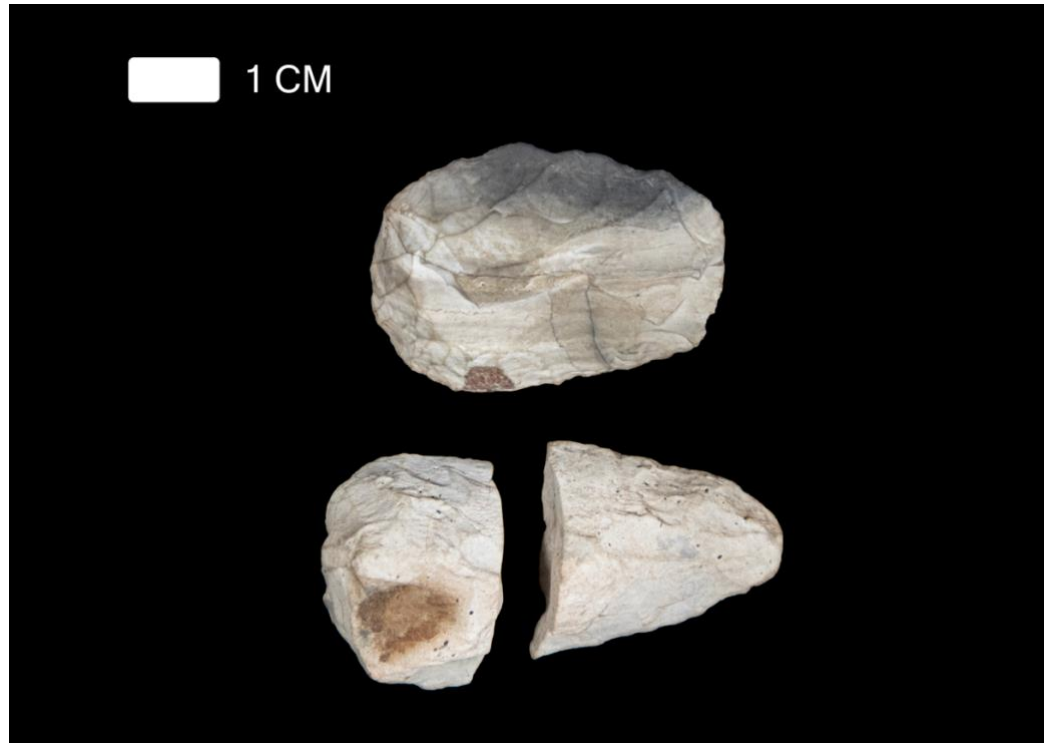


Figure 4.13: Thick unifacial scrapers from Deer Island Point (BfDg-5), which morphologically and technologically resemble the thick unifacial scrapers from Falls Island. (Photographed with permission of David W. Black.)

Sanger (2008:15) has suggested that these scrapers may be part of a distinctive Quoddy Region Transitional Archaic-Early Woodland tradition. He notes that similar scrapers were recovered from several sites around the Quoddy Region including Teachers Cove (BgDr-11) (Davis 1978), St. Croix Island (Sanger 2012), Moose Island (Hadlock and Byers 1951), and N'tolonapemk (Brigham et al 2001).

These scrapers also occur outside the Quoddy Region. At Jemseg Crossing (BkDm-14), Blair (2004b:235) recovered similar scrapers which she described as “large, thick unifacial scrapers.” Three of these scrapers were in association with charcoal that dated to 3000 ± 90 BP (Blair 2004b:232, 235). Blair believes a specialized lithic technology involving purposely prepared cores was used to create these scrapers and

noted that they are markedly different from scrapers associated with later Maritime Woodland period assemblages (Blair 2004b:236).

The radiocarbon dates reported by Blair, and the recovery of similar scrapers from sites with Transitional Archaic and Early Maritime Woodland components, suggest that these thick unifacial scrapers from Falls Island are likely associated with the Transitional Archaic-Early Woodland periods. Their presence to the north of the Quoddy Region suggests that this was not a specialized Quoddy Region technology as suggested by Sanger.

4.22 Ground Stone

Artifact 148/20315 is a flaked and ground adze made of igneous material (Figure 4.14). The shape was achieved by flaking, and there is minor grinding on the body to flatten flake ridges. The maximum width is near the centre of the adze and tapers toward the poll element, while remaining relatively straight toward the bit. The bit is the only area which shows significant grinding and polishing, and while it has remained relatively sharp, there is evidence of use wear in the form of chipping. There is no hafting element.

Dincauze (1968:34) notes flaked and ground adzes from Transitional Archaic sites in New England. These adzes are flaked into shape and have their bits ground, with minor grinding to smooth flake crests (Dincauze 1968:34). In the Quoddy Region, Black (2018:27) has observed a flaked and ground adze that only has the bit end ground smooth and associated it with the Transitional Archaic or Early Woodland period.



Figure 4.14: Obverse (top) and reverse (bottom) view of artifact 148/20315, a flaked and ground adze recovered from Falls Island. Note the ground and polished bit. (Curated at the RSPI.)

4.23 Bone Tools

Artifact 148/20320 is a bone gouge likely made from split moose long bone. The body is slightly dished, resembling the shape of a gouge, and the bit is wide and shows evidence of polish. The body contracts from the bit and also exhibits polish.

Bourque (1995:128, Plate 6.22) recovered similar bone gouges from Occupation 3 at Turner Farm. These bone gouges were associated with burials and all but one was calcined. Based on the amount of polish on the bit, Bourque (1995:128) suggested that bone gouges were used for scraping hides.

4.3 Early Maritime Woodland Artifacts (3300–2200 cal BP)

Four artifacts are attributed to the Early Maritime Woodland Period, all of which are flaked stone projectile points.

Table 4.4: Early Maritime Woodland period artifacts.

Catalogue Number	Artifact Description	Category
148/20240	Projectile point	Flaked stone
148/20244	Projectile point	Flaked stone
148/20227	Projectile point	Flaked stone
148/20237	Projectile point	Flaked stone

4.31 Projectile Points

Artifact 148/20240 is a projectile point that best fits Adena projectile points as defined by Boudreau (2016:111-112) and Ritchie (1961:12-13). It has a contracting stem with an ovate base. The shoulders are asymmetric due to the retouching of the blade margins. One margin has been retouched to the stem, suggesting utilization as a knife. The blade margins are straight to slightly convex.

Artifact 148/20237 is a large stemmed projectile point (Figure 4.15). The stem is short and wide, the blade margins are excurvate, and the tip is broken. The faces are broad with wide, shallow flake removals that often traveled to the midline or greater on both faces. Differential weathering is evident; the obverse face is not significantly weathered, while the reverse face is heavily bleached. Black has suggested that this

differential weathering could be caused by the acidic soils and ground water in black soil middens (Pers Comm. David Black, September 2023).

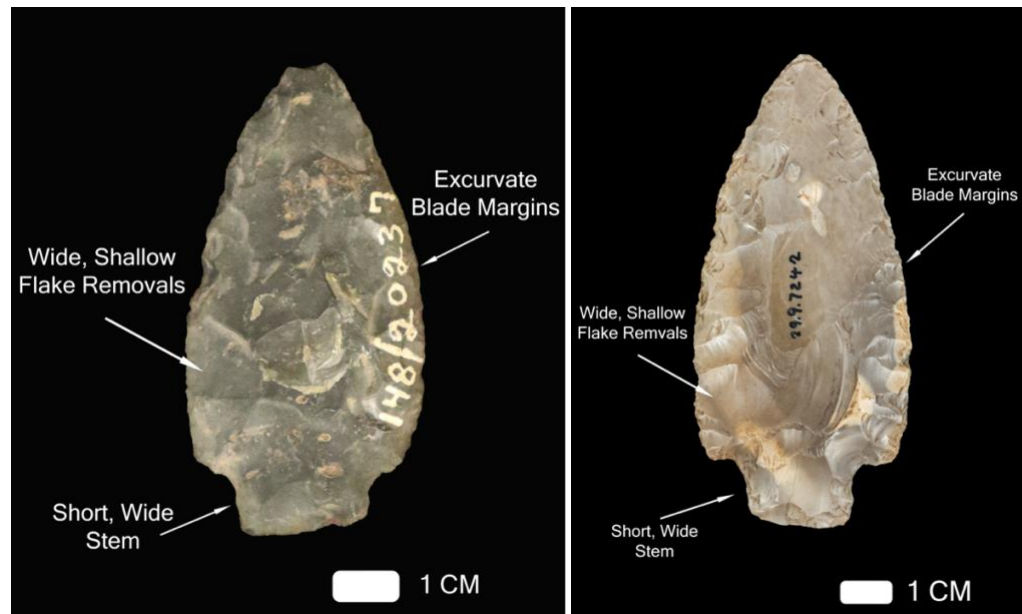


Figure 4.15: Left, artifact 148/20237, an Adena-like projectile point from Falls Island. Note the wide, shallow flakes, excurve blade margins, and short stem (Curated at the RSPI.) Right, a similar Adena-like projectile point recovered from Turner Farm. (Photo courtesy of the Maine State Museum.)

At Turner Farm, Bourque (1995:184) identified a similar projectile point which he attributed to the Adena/Middlesex phase. The blade from Turner Farm was part of the Turner Family collection. Bourque (1995:184) associated this point with a steatite gorget and a tubular pipe made from “Ohio pipestone.” The tubular pipe was associated with a house floor feature that produced a date of 1995 ± 50 BP (Bourque 1995:184).

In New Brunswick, Christopher Turnbull (1976) excavated the Augustine burial mound in central New Brunswick, which he associated with the Adena Phase/Early Maritime Woodland Period. Turnbull (1976:56, Plate 2) recovered several large Adena-like projectile points made from both exotic cherts and local materials. Turnbull

(1976:57) suggested that the Early Maritime Woodland Period in the Maritimes was participating in far reaching exchange networks and ideological systems. Blair (2022) agreed with Turnbull's analysis, but also noted that lithic procurement and settlement and subsistence patterns remained largely unchanged during the Early Maritime Woodland period, which she suggests is evidence for cultural continuity. It is probable that coastal groups in the Gulf of Maine and Bay of Fundy were also participating in these ideological systems and exchange networks.

Artifacts 148/20244 and 148/20227 are projectile points with wide side-notches. 148/20244 is made on a flake which has been shaped into the form of a projectile point (Figure 4.16 left). It has a straight base, wide side notches and convex blade margins. Flakes did not travel across the face of the projectile point. The rudimentary nature of this point suggests it may have been made by an inexperienced flintknapper; it may also represent an expedient tool or may have been made from a low-grade lithic material which was not conducive to flint knapping. 148/20227 also has a straight base, wide side notches, and convex blade margins; however, it is thicker, and flake scars travel over both faces (Figure 4.16 right).

Table 4.5: Measurements for Wide-side notch projectile points from Falls Island.

Wide-Side Notch Projectile Points	Length (mm)	Width (mm)	Thickness (mm)
148/20244	36.8	21.2	3.6
148/20227	37	20.5	9.5

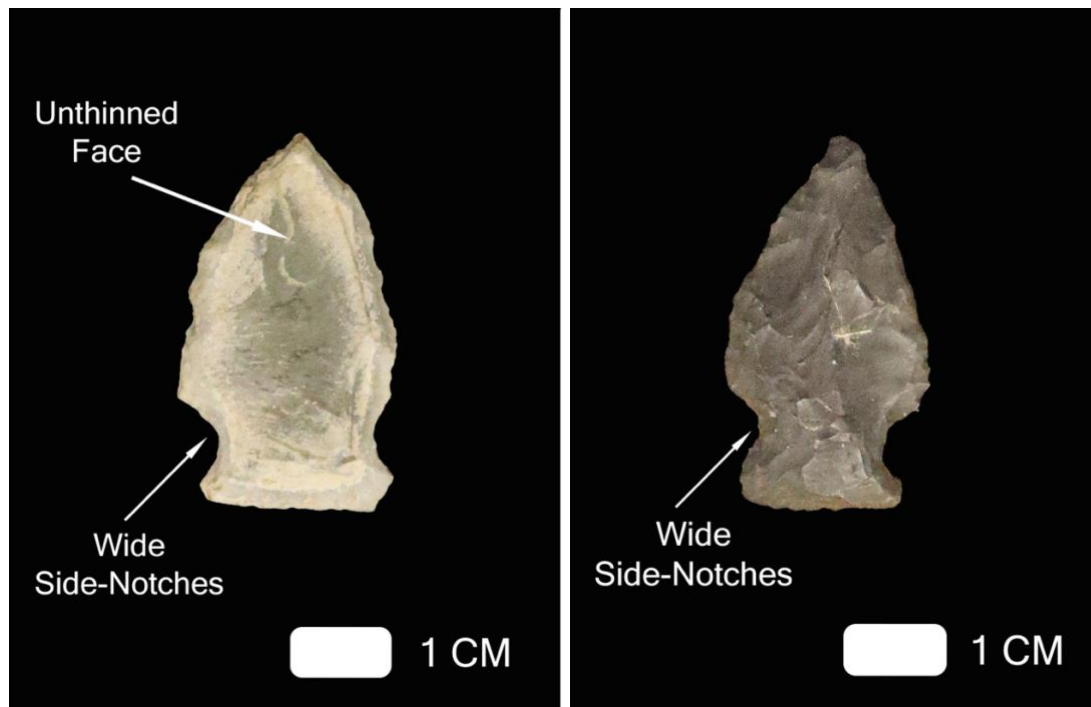


Figure 4.16: Wide Side-Notched projectile points from Falls Island. Left shows artifact 148/20244, note the unworked face and wide side-notches. Right shows artifact 148/20227, note the flake scars travelling across the face and wide side-notches. (Curated at the RSPI.)

At the Goddard site Bourque and Cox (1981:11–12) recovered wide side-notched projectile points which they associated with the period between “the Susquehanna Phase and the first appearance of ceramics.” One of these wide side-notched projectile points was recovered in association with a charcoal sample that dated to 2840 ± 105 BP (Bourque and Cox 1981:12). Using Oxcal I have calibrated this date to 3236–2754 Cal BP (2 σ calibration using Oxcal 4.4). This date firmly places these points at the end of the Transitional Archaic and beginning of Early Woodland periods.

At the Carson site, a multicomponent shell midden (Late Maritime Woodland-Contact period) in the Eastern Quoddy Region, Sanger (1987:37) recovered two wide

side-notched projectile points from the subsoil beneath the midden. Sanger (1987:38) hypothesized a date of 3000 BP for the subsoil, although he acknowledged there was not enough evidence to produce a confident date.

Black (1992:68) has identified similar wide side-notched projectile points (Figure 4.17) in the basal layer of the Weir site, and the Camp site on the Bliss Islands in the eastern Quoddy Region. Black (1992:68) recovered these points in situ 5 cm above charcoal dated to 2360 ± 80 BP. Using Oxcal I calibrated this date to 2709-2157 cal BP (2 σ calibration using Oxcal 4.4).

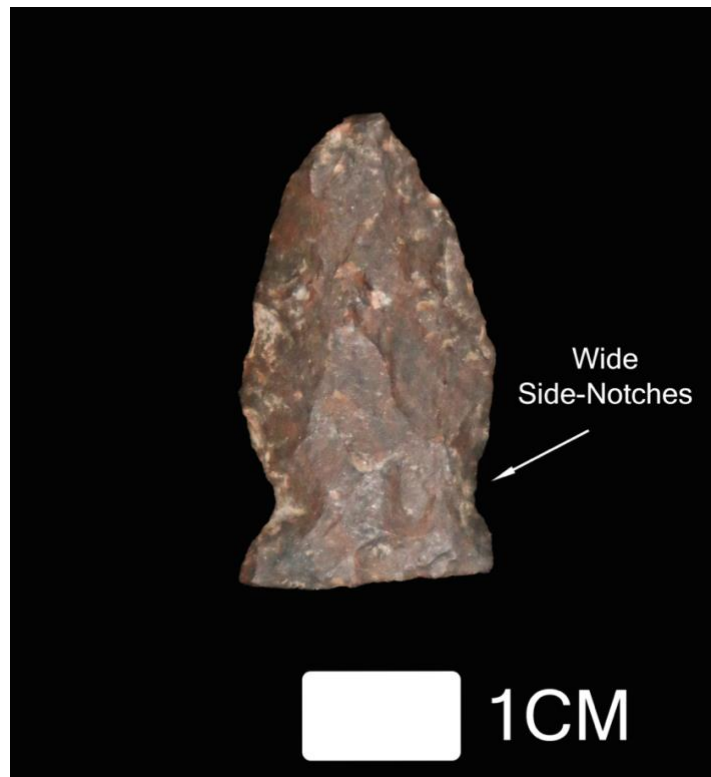


Figure 4.17: Wide side-notched projectile point from the Camp site on the Bliss Islands. Morphologically this point is similar to the wide side-notched points from Falls Island. (Photographed with permission of David W. Black.)

At Rum Beach, on the Bliss Islands in the eastern Quoddy Region, Black (2000) recognized Transitional Archaic artifacts eroding into the intertidal zone. Among these artifacts, Black (2000:101) noted Orient Fishtail-like projectile points, which resemble wide side-notched projectile points. Black (2000:101) believes this is evidence for cultural continuity between the Transitional Archaic period and Early Maritime Woodland period.

4.4 Middle Maritime Woodland Artifacts

The Middle Maritime Woodland period collection is small; it includes a single flaked stone projectile point and a ceramic sherd.

Table 4.6: Middle Maritime Woodland artifacts.

Catalogue Number	Artifact Description	Category
148/20223	Projectile point	Flaked stone
148/20300	Ceramic body sherd	Ceramic

4.41 Projectile Point

Artifact 148/20223 resembles a preform for a corner-notched projectile point (Figure 4.18). The base is flat and basally thinned, the blade margins are excurvate, and the cross section is bi-convex and thin. There are indents in the corners of the base where it appears notching was started but not completed. This point resembles Jack's-Reef style projectile points (see Boudreau 2016:120-121)(Figure 4.17).

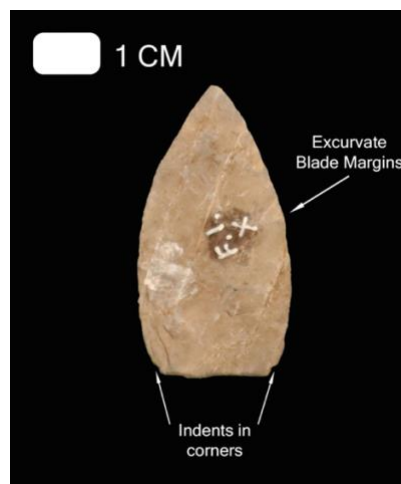


Figure 4.18: Artifact 148/20223, a Jack's Reef like projectile point from Falls Island. Note the small notches at the corners of the base, and excurvate blade margins. (Curated at the RSPI.)

Jack's Reef style points are common in Southern New England and the Mid-Atlantic States but are rare in the Maritime Peninsula; however, they do occasionally occur (Black 2018:5). At the Goddard Site on the central Maine coast, Cox (2021:42) identified 14 bifaces that he identified as Jack's Reef Corner-notched. Cox (2021:43) suggested the Jack's Reef component was short-lived at Goddard, and was likely associated with a late Middle Maritime Woodland period component.

Jack's Reef style points appear sporadically in the Maritime Peninsula. In the Baird collection from Grand Manan, New Brunswick, there are two corner notched points with Jacks Reef characteristics, and preform similar to that of Falls Island. Anderson and Hrynich (2023:5) noted a Jack's Reef like projectile point in the Denbow Point collection, yet they were hesitant to assign it as such, noting the scarcity of the point type north of the Penobscot Bay. The presence of possible Jack's Reef points in the Maritime Peninsula (specifically Maine and Southern New Brunswick) suggests the existence of trade routes with southern New England during the late Middle Maritime Woodland period.

4.42 Ceramic

Artifact 148/20300 is a small ceramic body sherd. The sherd is decorated with pseudo scallop shell stamping. There is no provenience information. Petersen and Sanger (1993:131–132) suggest that pseudo scallop motifs are representative of the Ceramic Period 2 (2150–1650 BP). This places the sherd temporally in the Middle Maritime Woodland period.

4.5 Late Maritime Woodland Period Artifacts

The highest percentage of temporally diagnostic artifacts in the Falls Island collection are attributed to the Late Maritime Woodland period. These artifacts include projectile points, thumbnail scrapers, and a ground stone celt.

Table 4.7: Artifacts from Falls Island attributed to the Late Maritime Woodland period.

Catalogue Number	Artifact Description	Category
148/20229	Projectile point	Flaked stone
148/20230	Projectile point	Flaked stone
148/20231	Projectile point	Flaked stone
148/20232	Projectile point	Flaked stone
148/20233	Projectile point	Flaked stone
148/20234	Projectile point	Flaked stone
148/20236	Projectile point	Flaked stone
148/20242	Projectile point	Flaked stone
148/20243	Projectile point	Flaked stone
148/20247	Projectile point	Flaked stone
148/20235	Projectile point	Flaked stone
148/20299C	Thumbnail scraper	Flaked stone
148/20299D	Thumbnail scraper	Flaked stone

148/20262	Thumbnail scraper	Flaked stone
148/20264	Thumbnail scraper	Flaked stone
148/20266	Thumbnail scraper	Flaked stone
148/20267	Thumbnail scraper	Flaked stone
148/20268	Thumbnail scraper	Flaked stone
148/20269	Thumbnail scraper	Flaked stone
148/20270	Thumbnail scraper	Flaked stone
148/20263	Thumbnail scraper	Flaked stone
148/20271	Thumbnail scraper	Flaked stone
148/20272	Thumbnail scraper	Flaked stone
148/20252	Thumbnail scraper	Flaked stone
148/20253	Thumbnail scraper	Flaked stone
148/20254	Thumbnail scraper	Flaked stone
148/20258	Thumbnail scraper	Flaked stone
148/20261	Thumbnail scraper	Flaked stone
148/20262	Thumbnail scraper	Flaked stone
148/20260	Thumbnail scraper	Flaked stone
148/20304	Celt	Ground stone

4.51 Flaked Stone

The flaked stone attributed to the Late Maritime Woodland period includes 11 projectile points, and 19 thumbnail scrapers.

4.51.1 Projectile Points

Artifact 148/20229 is a side-notched projectile point. The side notches are placed low on the blade margins, and the base is straight. The side-notches are narrower than those associated with Early Maritime Woodland period wide side-notched projectile points. The blade is triangular with straight margins, the broken tip, and there is polish present on the flake arises.

Within the Maritime Peninsula, Burke (2022:194) states that similar points are generally associated with the Late Maritime Woodland period. Sanger recovered comparable points from the Carson site in the Passamaquoddy Bay and assigned them a date of approximately 1000 BP (Sanger 1987:36–37).

Bourque and Cox (1981:17) have noted that during the Late Maritime Woodland period in Penobscot Bay, side-notched points are typical, and corner-notched points are atypical, while the reverse is true north of Penobscot Bay. Bourque and Cox (1981:17) proposed that this style preference shows regional variation between the two styles of points. Their hypothesis fits well with the Falls Island collection, as the single side-notched point is eclipsed by greater numbers of corner-notched points.

There are nine corner-notched projectile points assigned Late Maritime Woodland period, which makes them the most abundant point type (148/20230; 148/20231; 148/20232; 148/20233; 148/20234; 148/20236; 148/20242; 148/20243; 148/20247) (Figure 4.19). Only one of these projectile points is complete; the rest have broken tips and or broken hafting elements.

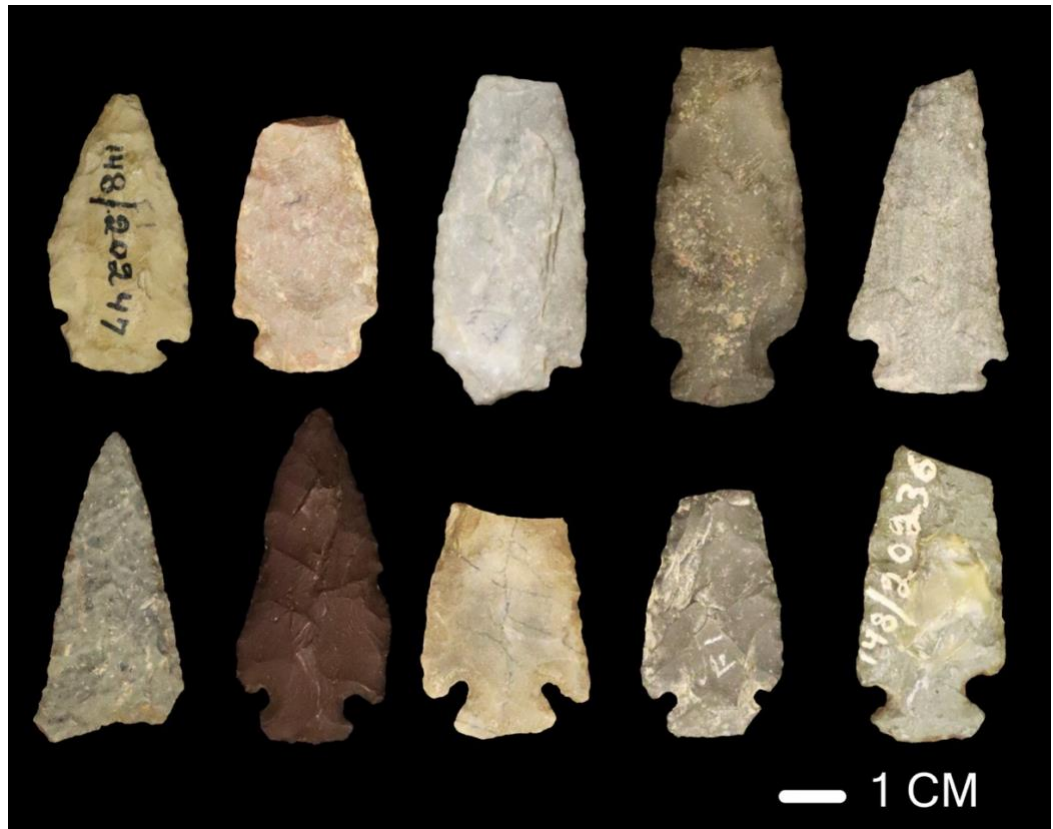


Figure 4.19: Late Maritime Woodland period projectile points. Top left to right: 148/20247, 148/20233, 148/20242, 148/20234, 148/20232. Bottom left to right: 148/20235, 148/20231, 148/20243, 148/20230. Note the corner notches with the exception of the triangular Levanna-like projectile point (bottom left). (Curated at the RSPI.)

Burke (2022:199) reasons that corner notched projectile points are indicative of the Late Woodland period in the southwestern Maritime Peninsula, which includes Passamaquoddy Bay. Burke (2022:199) states that these points generally have corner-notches placed low on the blade and feature triangular blades with straight to slightly convex blade margins. At the Carson site, Sanger (1987:36–38) noted ten similar corner-notched projectile points. Of these projectile points, eight had fractured blade margins similar to those from Falls Island (Sanger 1987:38, Plate 10). Sanger (1987:33, 37)

associated these points with assemblage 2, which dated to approximately 1000 BP based on associated radiocarbon dates.

Artifact 148/20235 is a triangular projectile point (Figure 4.20). The blade margins are straight, the base is convex, and tangs, one of which is broken, were developed at the corners of the base. The faces of the blade are flat. In morphology this point most closely resembles Madison points as illustrated by Boudreau (2012:124); however, the metrics do not fit this type neatly. Boudreau (2016:124) suggests that Madison points are small, and the maximum recorded basal width is 19.5mm. The Falls Island point has a basal width of 21.5 mm and would be larger if the ear was not broken. The length and thickness measurements are also above the maximum measurements Boudreau suggests for Madison points.

The metrics for 148/20235 make it a better fit for Levanna Triangle style points (Boudreau 2016:122-123). Levanna Triangle points are often equilateral triangles, with concave bases, straight blade margins, and occasionally, flaring tangs (Ritchie 1961; Boudreau 2012:124). Boudreau suggested that the ability to thin the faces from three sides gives these points a distinctive flat face (Boudreau 2012:124).

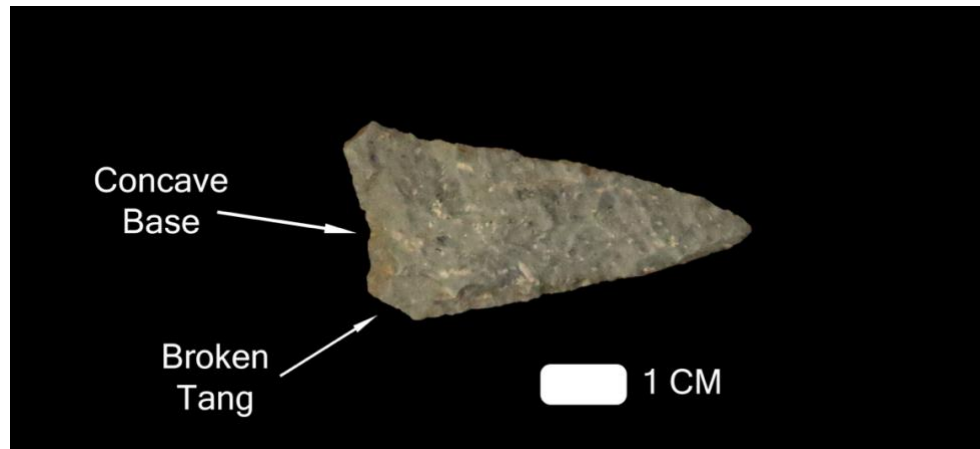


Figure 4.20: Artifact 148/20235, a Levanna Triangle-like projectile point from Falls Island. (Curated at the RSPI.)

Robinson (1996b:11) stated, “Levanna Triangle points are the dominant point style of the Late Middle Woodland and Late Woodland periods in Southern New England and along much of the eastern seaboard.” Robinson (1996b:11,16) also suggests that Levanna Triangles are scarce northeast of the Kennebec River, where they are replaced by side notched and corner notched points. He went on to observe that out of 55 Levanna Triangles from the Levanna Site (53.75), 53 were made from rhyolite, while none were made from chert (Robinson 1996b:Table 1). The Levanna Triangle from Falls Island may have been brought or traded to Falls Island from southern New England.

*Table 4.8: Metrics for Late Maritime Woodland period projectile points from Falls Island.
* Indicates incomplete measurement due to breakage.*

Late Maritime Woodland Projectile Points Measurements (mm)			
Accession #	Length	Width	Thickness
148/20231	50.7	21.9	8.8
148/20247	41.1	20.9*	5.8
148/20235	47	21.5*	6
148/20229	50.7*	21.9	8.8
148/20243	35*	24.8	6.8
148/20234	53.4*	22.8	7.1
148/20233	38.1*	21.6	6.9
148/20242	49.5*	23	8.2
148/20236	43.8*	22.1	6.8
148/20232	47.2*	24.2	5.7
148/20230	37.1*	20.9	6

4.51.2 Thumbnail Scrapers

There are 19 small unifacial scrapers in the Falls Island collection: 148/20299C, 148/20299D, 148/20262, 148/20264, 148/20266, 148/20267, 148/20268, 148/20269, 148/20270, 148/20263, 148/20271, 148/20272, 148/20252, 148/20253, 148/20254, 148/20258, 148/20261, and 148/20260 (Figure 4.21). Nine are made on lithic materials exotic to the Quoddy region, seven are made from local materials, and two are made on unidentifiable materials. Holyoke (2012:204) states thumbnail scrapers are a distinctive

part of a Late Maritime Woodland period toolkit throughout the Maritime Peninsula. Black (2004) has noted that small unifacial scrapers, commonly made from brightly coloured exotic cherts, are common in Late Maritime Woodland period sites in the eastern Quoddy Region. Black (2022:105) wrote, “during the Late Maritime Woodland, exotics and brightly coloured local lithics were used most frequently to make small formal and informal scraping and cutting tools.”



Figure 4.21: Small unifacial scrapers from Falls Island. The majority of the scrapers pictured are made on exotic lithic materials. (Curated at the RSPI.)

4.52 Ground Stone

Artifact 148/20304 is a small ground stone celt. The celt is pecked and ground and the bit is exhausted from use. The bit is the widest point of the celt, from which it tapers towards the poll. The poll element shows evidence of battering. The material is green crystalline metamorphic. The size and shape of this celt are consistent with the Late Maritime Woodland ground stone tool industry.

This celt is similar to other Late Maritime Woodland period ground stone pieces recovered in the eastern Quoddy Region. Jennifer Bishop (1994:24, Figure 32) recovered a similar celt from Partridge Island, likely associated with the Early or Middle Maritime Woodland Period. Black (1992:71–72, 84–86) recovered multiple ground stone celts from the Weir site and Camp site on Partridge Island which were morphologically similar and made from a similar crystalline metamorphic material.

4.6 Historic Period

Table 4.9: Artifacts from Falls Island attributed to the Historic period

Catalogue Number	Artifact Description	Technology
148/2301	Tin glaze earthenware	Historic ceramic

4.61 Historic Ceramic

Artifact 148/2301 is a tin glaze earthenware ceramic sherd with white paste and linear blue hand painted lines. This type of manufacture is known as Delftware. Delftware was manufactured in England and Holland and was popular between 1650–1750; however, it was produced between 1600–1800 (Richardson n.d).

4.7 Non-diagnostic Artifacts

There are 46 non-diagnostic artifacts in the Falls Island collection. Many of these artifacts are lithic preforms, portions of broken bifaces, or retouched flakes and faunal tools which are difficult to place temporally in the archaeological record.

Table 4.10: Non-diagnostic artifacts from Falls Island

Catalogue Number	Artifact Description	Technology
148/20215	Preform	Flaked stone
148/20221	Preform	Flaked stone
137/13360	Preform	Flaked stone
148/20251	Preform	Flaked stone
148/20199	Preform	Flaked stone
148/20286	Preform	Flaked stone
137/13359	Preform	Flaked stone
137/13355	Biface fragment	Flaked stone
148/20219	Biface fragment	Flaked stone
148/20265	Biface fragment	Flaked stone
148/20250	Retouched flake	Flaked stone
148/20246	Retouched flake	Flaked stone
90.177.2	Retouched flake	Flaked stone
90.177.3	Retouched flake	Flaked stone
148/20291	Retouched flake	Flaked stone

148/20297	Retouched flake	Flaked stone
148/20299B	Retouched flake	Flaked stone
148/20299E	Retouched flake	Flaked stone
148/20299H	Retouched flake	Flaked stone
148/20257	Retouched flake	Flaked stone
148/20251	Bipolar Core	Flaked stone
90.177.5	Possible gouge	Ground stone
148/20306	Fragment	Ground stone
148/20315	Adze preform	Ground stone
148/20307	Flaked and ground slate	Ground stone
137/13358	Striated stone	Ground stone
148/20324	Bone harpoon	Faunal
148/20323	Bone harpoon	Faunal
148/20328	Barbed bone point	Faunal
148/20330	Barbed bone point	Faunal
148/20331	Serrated bone point	Faunal
148/20334	Bone awl	Faunal
148/20332	Bone awl	Faunal
148/20325	Bone harpoon fragment	Faunal
148/20329	Bone point	Faunal
148/20337	Modified bone	Faunal

148/20310	Bone leister spear	Faunal
148/20326	Bone shaft	Faunal
148/20327	Bone shaft	Faunal
148/20335	Bone needle	Faunal
148/20319	Bone needle	Faunal
148/20336	Bone needle	Faunal
148/20333	Bone needle	Faunal
148/20311	Beaver incisor	Faunal
148/20302	Limpet shell	Faunal

4. 71 Flaked Stone

There are 21 non-diagnostic lithic artifacts in the Falls Island collection. These artifacts include bifacial preforms, bifacial fragments, utilized or retouched secondary flakes, and a bipolar core.

4.71.1 Bifacial Preforms

There are seven bifacial preforms in the Falls Island collection. Two of these preforms have listed provenience information (137/13360, 137/13359), while the remainder do not have site associations (148/20221, 148/20251, 148/20286, 148/20215, 148/20199). The preforms vary in size from approximately triangular, to ovate (Figure 4.22). The unfinished nature of these preforms makes them difficult to place temporally in the archaeological record.

Artifact 137/13360 is a large ovate preform (Figure 4.22), which has an associated provenience of Me 126/22–1. The RSPI ledger remarks state “collected by T.L. Stoddard, gift of Carleton Hayward & John Knapton via I.W. Kingsbury, Perry, ME.” This remark suggests that Ted received the artifact from Carleton Hayward and brought it to the RSPI. The date collected is listed as 1951 and the provenience is “Falls Island 126/22; Beach at low water.” Site 126/22 is located on the western side of the island, and this preform is the only artifact with provenience to this site. The artifact label 126/22–1 suggests that this may have been the first artifact recovered from this site. The date of collection (1951) suggests this may be when this site was first visited; however, the date could also indicate that this was the first artifact given to Stoddard from site 126/22.

Artifact 137/13359 is a small ovate biface made from a maroon volcanic material (Figure 4.22). There is an associated provenience of 126/20–7 “Falls Island East Beach of small island 75 yards east of mainland site” in the RSPI ledger. This implies that the biface may have eroded from the intertidal midden site (see chapter 6 below). It also implies that the intertidal midden may not have been recognized as a site at this time.



Figure 4.22: Bifacial preforms recovered from Falls Island. Left to right, 148/20199, 148/20215, 148/20221, 137/13360, 137/13359. 137/13360 was recovered from site 80.22, while 137/13360 was recovered near site 80.21 (see figure 6.6 for site locations). (Curated at the RSPI.)

4.71.2 Biface fragments

Artifact 137/13355 is a slender biface. The tip is broken and there is no hafting element. Bleaching is more pronounced on one face, and water rolling is not present, suggesting the artifact may have been recovered or recently eroded from a black soil midden. The artifact has a provenience of “Beach on Eastside; 6–8 inch. Fire dirt and broken shell” (RSPI Ledger).

Artifacts 148/20219 and 148/20265 likely represent sections of broken preforms or projectile point blade margins. Both specimens are bifacially flaked and retain a biconvex cross-section.

4.71.3 Utilized/retouched Secondary Flakes & Bipolar Core

There are ten (90.177.2; 90.177.3; 148/20291; 148/20297; 148/20299B; 148/20299E; 148/20299H; 148/20250; 148/20257, 148/20246) utilized or retouched secondary flakes. They are characterized as having no cortex, distinct dorsal and ventral

surfaces, and at least one margin that exhibits utilization or retouch. They may have been used as expedient cutting or scraping tools. One specimen, 148/20291, may have functioned as a spokeshave as it has a concave c-shaped margin that is retouched, possibly to work bone or wood.

Artifact 148/20251 is a possible bipolar core fragment. It is made from a black volcanic material and shows a battered ridge with intact quarry joint faces.

4.72 Ground Stone

There are five non-diagnostic ground stone artifacts.

Artifact 90.177.5 is a ground stone fragment that is notably different from the rest of the collection in that it is extensively polished and has a shallow depression on the dorsal surface behind the bit element (Figure 4.23). From the bit element the body is straight expanding. The ventral surface is flat, the bit is finely polished and only beveled from the dorsal surface. There is a transverse fracture approximately 7 cm behind the bit.

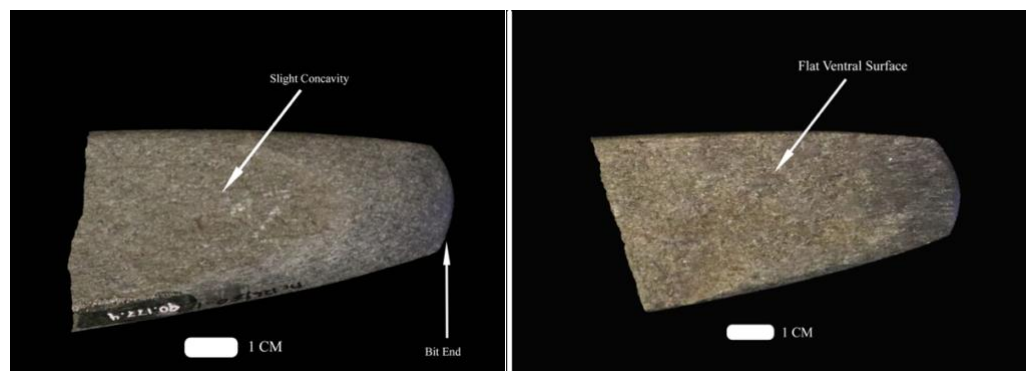


Figure 4.23: Obverse and reverse faces of artifact 90.177.4. Note the depression behind the bit on the obverse face (left), and flat ventral surface (right). (Curated at the RSPI.)

Artifact 148/20316 is a flaked and ground adze preform made on felsic volcanic stone. In outline, it is rectangular, with straight parallel sides, and slightly rounded poll element. The bit is flaked and has not been ground. The adze was likely discarded prior to completion.

Artifact 148/20306 is a disc shaped fragment of ground stone that is flaked and pecked. It may be broken from use wear, or it may be a discarded preform.

Artifact 148/20307 is a water rolled tabular fragment likely made from slate that shows evidence of flaking, grinding, and polishing. It may represent a preform for a ground slate point, or a spall from a larger specimen of worked slate.

Artifact 137/13358 is a rectangular section of slate-like material with linear striations on both faces that travel various directions. There is a provenience of 126/20–6, “Beach on Eastside; 6–8 inch. Fire dirt and broken shell.” The piece is split longitudinally and has been refit with glue. This may be a preform for a ground stone tool, or a polishing/abrading stone as suggested by the Knapton brothers in the RSPI Ledger.

4.73 Bone

There are twenty non-diagnostic bone artifacts. Bone artifacts are difficult to place temporally as typologies are not well defined (see Will 1981). In the Maritime Peninsula, acidic soils usually disintegrate bone, erasing it from the archaeological record. Shell middens offer unique preservation of bone artifacts as calcium carbonate released from the shells neutralizes soil acidity and improves preservation. Despite shell

middens preserving bone artifacts, the archaeological record is not yet robust enough to confidently place many of these artifacts.

4.73.1 Barbed Bone Harpoons

There are two large bone harpoons with line holes in the Falls Island collection. The first harpoon, 148/20324, has sustained significant damage from post depositional weathering, which has caused a white rind to form on the bone surface (Figure 4.24). Badly deteriorated unilateral barbs are present on the blade, and the distal tip of the harpoon was broken, but has been refit with glue. The stem is slightly contracting with straight margins. A gouged asymmetrical line hole is located just above the stem, closest to the barbed margin. The harpoon is likely made from terrestrial mammal bone.

The second harpoon, 148/20323, has seven closely set, low angle, unilateral barbs (Figure 4.25). Only a fragment of the broken stem remains, and the distal tip is broken. The harpoon is broken transversally at the midpoint but has been refit with glue. The line hole is drilled and located just above the broken stem, closest to the barbed blade. There are split-line cracks present due to weathering. The harpoon is also likely made from terrestrial mammal bone.

The damaged condition of these harpoons suggests they were broken through usage and discarded in a midden. Will (1981:7–8) believed bone was a readily available material for tool manufacture, and consequently, meant that repairing or reproposing bone tools was uncommon. The stem configuration and the presence of line holes suggest the harpoons were used in combination with a foreshaft from which they could be freed once stuck in the intended prey, possibly large marine species.

There is insufficient typological evidence to confidently associate these harpoons to a specific period. These style harpoons have been found in both LMA period and Maritime Woodland period shell middens. At the Taft's Point site, in Gouldsboro, Maine, Hadlock (1939:25) reported that out of 15 large bone harpoons, 11 were found in the lowest black humus horizon, associated with the LMA occupation (Hadlock 1939:25). Hadlock (1939:15) stated that many of these large harpoons had line holes located near their bases. At Port au Choix, Tuck (1976:37) has suggested that harpoons with line holes were exclusively used for maritime hunting because they were detachable. The detached harpoon would have a line attaching it to a boat or a float, which would exhaust the prey. At Turner Farm Occupation 2, Bourque identified a type of harpoon that closely matches those from Falls Island. He describes these harpoons as "having relatively long barbed segments with low-angle barbs" (Bourque 1995:57). Harpoons from Turner Farm feature both drilled and gouged line holes (Will 1981:84). It is noteworthy that at Turner Farm, no barbed harpoons were associated with the Maritime Woodland period occupation.

At the Carson site (BgDr-5), Sanger (1987:53) recovered a large contracting-stemmed harpoon with two gouged line holes at its base. There was some stratigraphic ambiguity within the area of the midden from which the harpoon was recovered from, but Sanger (1987:53) confidently places it within either the Late Maritime Woodland or early Contact periods.



Figure 4.24: Unilateral bone harpoon (148/20324) with a gouged line hole. Note the tapered stem and tip which has been refit with glue. (Curated at the RSPI.)

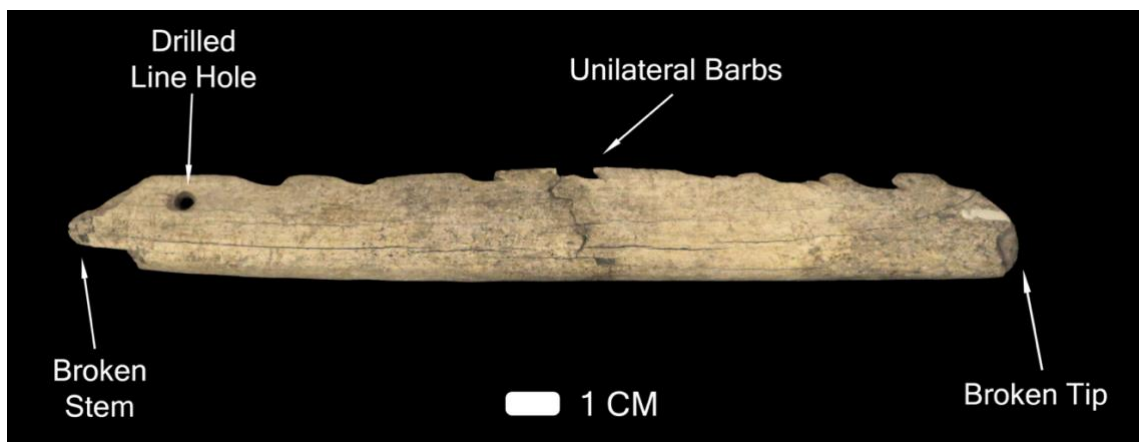


Figure 4.25: Unilateral harpoon (148/20323) with a drilled line hole, and broken stem and tip. (Curated at the RSPI.)

Table 4.11: Metrics from barbed bone harpoons from Falls Island.

Barbed Harpoons	Length (cm)	Width (cm)	Thickness (cm)
148/20324	15.47	1.75	0.73
148/20323	17.30	2.05	0.99

4.73.2 Barbed Bone Points

Artifact 148/20328 is a unilaterally barbed bone point (Figure 4.26). There are two unilateral barbs with low barb angles in the medial section of the point. The proximal and distal ends are broken. This may be an unfinished preform, or broken harpoon with the line hole missing.

Artifact 148/20330 is also a unilaterally-barbed bone point (Figure 4.26). The proximal end is broken, and as a result the hafting technique unidentifiable. The barbs are in the medial portion of the point and have a low barb angle. There is a long groove that runs along the obverse side of the point from the tip to the proximal end. Morphologically this point differs from other bone points as it is flatter and has a lanceolate/blade like shape.

Artifacts 148/20325 and 148/20329 are medial sections of barbed points (Figure 4.26). They are made from antler that is calcined or weathered and exhibits split-line cracks. 148/20325 has a transverse medial fracture but has been refit with glue. The barb angle is different from that of the barbed mammal bone and exhibits a “back barb.” At Turner Farm, Bourque (1995:121–123) associated antler harpoons with the

Transitional Archaic period occupation. The complete antler points from Turner Farm had line holes and were often toggling forms.

4.73.3 Serrated Bone Point

Artifact 148/20331 is a unilateral serrated bone point (see figure 4.26). It has a serrated edge with over twenty tiny unilateral barbs. The distal tip is damaged, and the proximal end is fractured. The parent bone is likely terrestrial mammal.

Tuck (1976:37) noted what he referred to as “small saw tooth bone points” at Port au Choix. Tuck (1976:37) suggested these points were used to hunt birds and other small species, and observed most specimens were made of split mammal long bone. Measurements between the Port au Choix specimens and Falls Island specimen are similar; however, the Falls Island specimen has more serrations. Hadlock (1943:349, Figure 34) shows a bipointed bone point from Taft’s Point; one end is a harpoon with three barbs, while the other end is a unilaterally serrated implement. The serrated end is remarkably similar to the specimen from Falls Island. Unfortunately, the stratigraphic position of the Taft’s Point specimen is unknown.



Figure 4.26: Broken bone weapons in the Falls Island collection. Left to right, 148/20330 and 148/20328 are barbed bone points, 148/20331 is a serrated bone point, 148/20326 and 148/20327 are triangular bone shafts, and 148/20325 and 148/20329 are medial sections of barbed points or harpoons. (Curated at the RSPI.)

4.73.4 Simple Bone Point

Artifact 148/20338 is a simple bone point with no barbs and no hafting element. It is circular in cross section and expands from the tip which is sharpened to a point. The base is split and the bone is weathered with white patination.

Artifact 148/20337 is a superficially modified bone. It retains its original shape; however, it has been tapered by scraping to form an accentuated point. It is likely made on cervid styliiform bone, similar to superficially modified bones at Turner Farm (Will 1981:91). There is possible evidence of dog gnawing at the distal end in the form of macroscopically visible round indents.

4.73.6 Triangular Bone Shafts

Artifact 148/20326 is a bone shaft with a triangular cross section possibly made from cervid long bone. The shaft exhibits a triangular cross section, five closely set

unilateral barbs with a low barb angle, and tapered tip. The proximal end is snapped below the fifth barb. There is evidence of scraping and polishing on the bone surface.

Artifact 148/20327 is also a triangular bone shaft. It features three low-angle unilateral barbs, a broken distal tip, and a broken proximal end. The shaft is light in colour, possibly as a result of weathering or calcining. One side of the shaft exhibits a porous structure, suggesting terrestrial mammal bone is the parent material.

Comparable artifacts have been noted in Newfoundland and Maine. At Port au Choix, Newfoundland, Tuck (1976:31) recovered ten bone bayonets made from the long bones of large mammals, which he attributes to caribou. These bayonets had a “triangular to broad ‘pie-wedge’ cross-section” and retained the marrow groove in the flatter side of the bone (Tuck 1976:31). Tuck (1976:31) recovered whole bone bayonets from Port au Choix and noted that both ends were drawn to a point; however, the distal tip is “thinned from the interior surface to form a sharp point.” The measurements of these bone bayonets from Port au Choix are similar to the triangular shafts from Falls Island (Tuck 1976:31). Tuck (1976:31) believed these bone bayonets were used as hafted thrusting weapons for both terrestrial and marine hunting.

Six triangular bone shafts are associated with the LMA occupation at Turner Farm (Bourque 1995:53). These shafts are made from swordfish rostrum, cervid long bone, and possibly whale bone (Will 1981:131). Like the shafts from Falls Island, the bone shafts from Turner Farm have a triangular cross-section, and when the distal end is present, it is tapered to a point (Will 1981:131). Will (1981:133) noted that all six shafts showed evidence of scraping and polishing on their surfaces. Will (1981:190) also

believed these shafts were used as thrusting or piercing tools. Bourque (1995:53) has suggested that triangular bone shafts are technologically and morphologically comparable to ground slate bayonets.

4.73.5 Fish Spears or “Leisters”

Artifact 148/20310 resembles a bone leister spear (Figure 4.27). The spear is exceptionally well made and appears unbroken. At 20 cm in length it is remarkably long in comparison to the rest of the faunal tool assemblage. The leister spear profile is round and tapers to a sharp distal point. The proximal end is roughly rectangular, and tapers slightly towards its end, which may have served as a type of socketed haft. There is evidence of extensive polishing. Written on the artifact is “Falls Is x 51” suggesting that the Knaptons recovered this artifact on one of their last visits to the island in 1951. Leister spears appear in artifact assemblages ranging from the LMA to the Maritime Woodland period in the Atlantic Northeast (e.g. Bourque 1995:190; Sanger 1987:52, Plate 16; Tuck 1976:134). They are most commonly thought to have been used as fishing spears.



Figure 4. 27: Probable leister spear made from bone. Note the sharp distal tip and tapered rectangular proximal end. (Curated at the RSPI.)

4.73.7 Awls and Bone Needles

Artifacts 148/20334 and 148/20332 are similar to bone awls or perforators. They are made from spirally fractured mammal bones with slender tips. The points on both pieces exhibit polish from possible use wear. Bourque (1995:194), Tuck (1976:Plate 32), and Black (2004:Plate 5–10) illustrate similar awls from the Atlantic Northeast. It is suggested that these were used as sowing or piercing implements. Such awls are not temporally diagnostic in the Maritime Peninsula.

Four likely fragments of bone needles, probably made from bird bones (148/20335, 148/20336, 148/20319, 148/20333) were identified in the Falls Island collection. Artifacts 148/20335 and 148/20319 are made on delicate long bones and are missing their proximal and distal ends. Both specimens have a single notch cut into the medial portion of the bone. Artifacts 148/20336 and 148/20333 are small cylindrical bone tips, possibly the distal tips of bone needles. Artifacts 148/20335 and 148/20336 may possibly refit.

4.74 Faunal Remains

Artifact 148/20311 is a beaver incisor. Its sides are de-laminated and the tip has been sharpened, likely for use as a wood working tool. Beaver incisors are not temporally diagnostic as they appear in both LMA and Maritime Woodland shell middens.

Artifact 148/20302 is a large limpet (*Patella vulgata*) shell. It is the only unmodified faunal artifact in the collection. The Knaptons may have collected it based on its unusually large size, or it may have been a rare find in the middens.

Chapter 5: Lithic Materials

Material attributions were carried out based on macroscopic observation of the artifacts during cataloging, and photographs. Where a material is suggested, this is based on comparison to geological specimens of the material in question and/or published sources with detailed geological descriptions sufficient to propose attributions (e.g., Black 2018; Honsinger 2021, 2023).

Following MacDonald (1994:66–68), and later Black (2018:41–45), I use a probabilistic model to place lithic materials into categories of local, probably local, and exotic. Local materials are available in the Quoddy Region from bedrock outcrops or secondary sources (Black 2018:41). Local materials in the Falls Island collection include Edmunds Formation mudstone and chert, Quoddy Cream-Speckled Mudstone (QCSM), quartz, quartzite, dark-coloured volcanics, and light-coloured volcanics (see Black 2018:41–43; Honsinger 2021:59–65). QCSM has been shown to be part of the Edmunds Formation; however, due to previous lithic analysis in the region which separated the two, there is analytical value in keeping it a separate class of material for this report (Pers Comm. Arthur Anderson, June 2024). Probably local materials are thought to be available in the Quoddy Region but could also be from outside the region; in the Falls Island collection the only probably local material is Apple Green Glassy Rhyolite (AGGR) (Black 2018:44). Exotic materials are only available outside the Quoddy Region. Exotic material that are relevant to Falls Island are Kineo rhyolite, Washademoak Multi-Coloured chert, Minas Basin Multi-Coloured chert, and Tobique Rhyolite (see Table 5.1).

Table 5.1: Lithic materials identified in the Falls Island Collection.

Material	Brief Description	Designation	Locality
Bull Quartz	Milky white cryptocrystalline quartz	BQTZ	Local
Quartzite	Medium-fine grained. Grey, purple, or brown in colour	QZIT	Local
Edmunds Mudstone & Chert	Fine-grained grey chert/mudstone	EDMD	Local
Quoddy Cream-Speckled Mudstone	Fine grained, grey/green groundmass with cream coloured speckles	QCSM	Local
Dark Coloured Volcanics	Fine grained mafic, black or blue-black colour	DVOL	Local
Light Coloured Volcanics	Fine grained felsic volcanic, grey-green colour	LVOL	Local
Apple Green Glassy Rhyolite	Very fine-grained felsic volcanic, green groundmass	AGGR	Probably Local
Kineo Rhyolite	Blue-green-grey groundmass with phenocrysts and polyhedral inclusions	KR	Exotic (Central Maine)
Washademoak Multi-Coloured Chert	Waxy, semi-translucent, variable colours, red, yellow, black and clear	WMMC	Exotic (Central New Brunswick)
Minas Basin Multi-Coloured Chert	Waxy, variegated chert, white, red, grey, and yellow	MBMC	Exotic (Minas Basin, Nova Scotia)

Tobique Rhyolite	Fine grained to aphanitic, usually red-black, brown, or pink in colour	TOBR	Exotic (Tobique River, New Brunswick)
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5.1 Late Maritime Archaic Period Lithic Materials

The majority of lithic material utilized at Falls Island during the LMA period was available locally in the Quoddy Region. The most frequently used local material was related to Edmund’s Formation chert, which outcrops along the coast of Whiting Bay and Reversing Falls (Honsigner 2023:99). A maroon porphyritic volcanic and dark banded bleached chert are potentially local (Pers Comm. David Black, January 2024), and a single massive expanding flake of Kineo Rhyolite (KR)—which outcrops in the Moosehead Lake region (see Table 5.1) of central Maine—is considered exotic (Brockman and Keegan 2016:37).

Table 5. 2: Lithic materials utilized during the LMA period.

Cat #	Description	Plausible Material	Locality
148/20239	Contracting-stemmed projectile point	EDMD	Local
148/20211	Large ovate biface	EDMD	Local
137/13357	Massive Retouched/utilized Flake	Maroon porphyritic volcanic	Unknown
148/20299f	Massive Retouched/utilized Flake	EDMD	Local
148/20299g	Massive Retouched/utilized Flake	EDMD	Local
148/20299i	Massive Retouched/utilized Flake	EDMD	Local
148/20308	Massive Retouched/utilized Flake	AGGR	Probably local
148/20309	Massive Retouched/utilized Flake	EDMD	Local
148/20309	Massive Retouched/utilized Flake	KR	Exotic
148/20290	Bifacial chopper	EDMD	Local

This pattern of local lithic materials being commonly utilized is similar to the LMA period occupations at Turner Farm and Goddard. At Turner Farm (Doyle 1995) and

Goddard (Cox 2021) local lithic materials, primarily Maine materials like KR or coastal rhyolites, were preferred, while exotic materials were rarely used.

5.2 Transitional Archaic Period Lithic Materials

Lithic materials during the Transitional Archaic occupation of Falls Island are predominantly local. At Transitional Archaic intertidal sites in the eastern Quoddy Region, Black (2022:88, 103) notes that lithic assemblages are dominated by local materials, often flow-banded rhyolites. At the Rum Beach site, Black (2018:41–43) observed that the majority of lithic materials were local to the Quoddy Region. The most abundant materials are bull quartz, quartzite, porphyritic volcanics, dark-coloured volcanics, and light-coloured volcanics (Black 2018:42–43). During this period, Black (2022:103) believes lithic technology, and materials used are oriented with neighbouring groups using Broadpoint technology to the south and west. Although the sample size is small, the lithic materials utilized during the Transitional Archaic period at Falls Island correspond closely to patterns of local material usage reported by Black (2018) in the eastern Quoddy Region.

Table 5.3: Lithic materials utilized during the Transitional Archaic period on Falls Island.

Cat #	Description	Plausible Material	Locality
148/20299	Thick Unifacial Scraper	DVOL	Local
148/20259	Thick Unifacial Scraper	EDMD	Local
148/20273	Thick Unifacial Scraper	LVOL	Local
148/20256	Thick Unifacial Scraper	QCSM	Local
148/20299	Cortical Spall Tool	QTZT	Local
148/20228	Wayland-notched-like Projectile Point	DVOL	Local
148/20248	Orient Fishtail-like Projectile Point	Unknown (Bleached)	N/A
148/20240	Atlantic-like blade	QTZT	Local
148/20245	Flare-tang Projectile Point	Unknown (Bleached)	N/A

5.3 Early Maritime Woodland Period Lithic Materials

The Four Early Maritime Woodland period projectile points are made from local lithic materials. Black (2022:103) notes that during the Early Woodland Period exotic lithic materials including Tobique rhyolite and cryptocrystalline cherts appear in

archaeological assemblages. Black (2022:103) equates the shifting of lithic materials to changing social catchments, suggesting closer ties with Ancestral Wolastoqey and Mi'kmaq to the north and east.

Table 5.4: Early Maritime Woodland period lithic materials.

Cat #	Description	Plausible Material	Locality
148/20237	Adena-like Projectile Point	QTZT	Local
148/20227	Wide Side-notched Projectile Point	DVOL	Local
148/20244	Wide Side-notched Projectile Point	EDMD	Local
148/20237	Adena Blade	EDMD	Local

5.4 Late Maritime Woodland Period Lithic Materials

Late Maritime Woodland lithic procurement appears different than other known time periods. At Falls Island, at least half of all thumbnail scrapers are exotic lithics, most commonly brightly coloured variegated cherts from interior New Brunswick, Maine, and coastal Nova Scotia. Four out of twelve projectile points are made from exotic lithic materials. This change suggests interaction spheres were growing, particularly to the north and east of the Quoddy Region.

Table 5.5: Lithic materials used for Late Maritime Woodland period thumbnail scrapers.

Cat #	Description	Plausible Material	Locality
148/20264	Thumbnail scraper	BQTZ	Local
148/20266	Thumbnail scraper	BQTZ	Local
148/20267	Thumbnail scraper	BQTZ	Local
148/20268	Thumbnail scraper	BQTZ	Local
148/20269	Thumbnail scraper	BQTZ	Local
148/20270	Thumbnail scraper	BQTZ	Local
148/20263	Thumbnail scraper	WMCC	Exotic
148/20271	Thumbnail scraper	MBMC	Exotic
148/20272	Thumbnail scraper	WMCC	Exotic
148/20299	Thumbnail scraper	WMCC	Exotic
148/20252	Thumbnail scraper	KMTP	Exotic
148/20253	Thumbnail scraper	Unknown Red Mudstone/chert	Unknown
148/20254	Thumbnail scraper	TOBR	Exotic
148/20258	Thumbnail scraper	WMCC	Exotic

148/20261	Thumbnail scraper	WMCC	Exotic
148/20260	Thumbnail scraper	Unknown	Unknown
148/20262	Thumbnail scraper	Unknown	Unknown

Table 5.6: Lithic materials used for Late Maritime Woodland period projectile points.

Cat #	Description	Plausible Material	Locality
148/20229	Side-notched Projectile Point	Unknown Red chert/mudstone	Unknown
148/20235	Levanna-like Projectile Point	KTMP	Exotic
148/20231	Corner-notched Projectile Point	Unknown Red chert/mudstone	Unknown
148/20232	Corner-notched Projectile Point	EDMD	Local
148/20230	Corner-notched Projectile Point	BVOL	Local
148/20247	Corner-notched Projectile Point	Unknown (Bleached)	Unknown
148/20243	Corner-notched Projectile Point	Unknown (Bleached)	Unknown
148/20233	Corner-notched Projectile Point	QTZT	Local
148/20234	Corner-notched Projectile Point	EDMD	Local
148/20236	Corner-notched Projectile Point	AGGR	Probably local
148/20242	Corner-notched Projectile Point	QTZT	Local

The use of exotic lithic materials at Falls Island fits well with the Quoddy Region and Maritime Peninsula. In the eastern Quoddy Region Black (2022:105) suggests that aesthetics changed dramatically during the Late Maritime Woodland period as brightly coloured variegated cherts replaced local rhyolites. These exotic cherts were commonly “used to make small formal and informal scraping and cutting tools” (Black 2022:105).

Through the Late Maritime Archaic to Early Maritime Woodland periods local materials were predominately used when making flaked stone tools. The only occurrence of an exotic material is a massive retouched/utilized flake made from KR during the LMA period. During the Late Maritime Woodland period there is a sharp increase in the use of exotic materials, particularly colourful, exotic cherts from New Brunswick, Maine, and Nova Scotia.

Table 5.7: Exotic materials utilized by period.

Period	Number of artifacts	Exotic Materials
Late Maritime Archaic	10	1
Transitional Archaic	9	0
Early Maritime Woodland	3	0
Late Maritime Woodland	28	9

Chapter 6: Falls Island Site Survey

On August 17, 2023, Gabe Hrynich, Arthur Anderson and I completed a shoreline survey of Falls Island. The goal of the trip was to document established sites on the island, which could allow extant sites to be connected to the Falls Island collection. The objectives of the survey were to (1) relocate the sites shown on Robert S. Peabody Institute and Maine Historic Preservation Commission maps, (2) assess the condition and extent of the sites, (3) conduct an intertidal survey of the areas in front of previously documented sites (see table 6.1), and (4) survey the entire shoreline of Falls Island for unrecorded archaeological sites. To accurately record site locations, an Emlid Reach GNSS receiver was used on the walkover, which permitted high-resolution recording of site location to within 3 m.

6.1 Site 80.43

Site 80.43 was the first to be surveyed, and the timing corresponded with maximum ebb tide, which allowed for a thorough intertidal survey. The area site 80.43 was indicated to be on MHPC maps was completely eroded; however, an intertidal island approximately 75 m east of the indicated position for site 80.43 proved to be an area of archaeological interest. An ovate biface had been recovered from the beach of this island in the 1950's, but the island was never specified to be a site. The emergence of the intertidal island is dependent on the tide; at ebb tide the island is a promontory of the mainland, but clearly visible as a demi-island at flood tide. On the intertidal island was a small, raised area (approximately 5x5 m) of vegetation overlaying black soil and eroding shell (Figure 6.1). A possible hammer stone was recovered from the nearby

intertidal zone, but subsequent examination has not been conclusive. It is possible that the intertidal island was once part of site 80.43 as there are mounds of organic material, probably eroded portions of the intertidal island and mainland, redeposited throughout the intertidal zone. There are two freshwater springs in the cove (Figure 6.6). The first drains in the approximate location marked for site 80.43; the second drains approximately 100 m to the southeast of the intertidal island in a small cove next to a bedrock outcrop.



Figure 6.1: Site 80.43 the intertidal midden viewed facing north at $\frac{3}{4}$ flood tide. The raised central area represents the extent of the midden.

6.2 Site 80.20

Site 80.20 is located 300 m north of site 80.43 in a protected cove with a northeast exposure (Figure 6.2). A survey of the intertidal zone and storm beach in the cove revealed no artifacts and no evidence of a site. Outside the cove, on a northern stretch of beach a broken projectile point was found laying on the surface of the storm beach (Figure 6.3). The projectile point is corner notched, broken transversely near the tip, heavily patinated and water-rolled, and relatively small (approximately 2.5 cm in length). GPS data was collected and in situ photos were taken prior to collecting the point. A survey of the area revealed no further artifacts and no indication of a site. There is no site indicated in this area on either RSPI or MHPC maps; however, the point was approximately 100 m north of the area indicated to be MHPC site 80.20.



Figure 6.2: Site 80.20 at approximately ¼ flood tide. Note the gradual slope of the beach and intertidal zone.



Figure 6.3: Left, the stretch of beach showing the area the corner-notched projectile point was recovered. Right, the corner-notched projectile point in situ. Note the heavy bleaching and muted flake scars caused by beach rolling in the intertidal zone.

6.3 Site 80.22

Site 80.22 was relocated in the position it was indicated to be on RSPI and MHPC maps. The site consisted of a vegetated bank, with shell spilling out of black soil (Figure 6.4). The site was exposed in a southwestern direction and was separated from the mainland by the reversing falls channel. Emlid points of the site extent were taken, and the area was photographed. Multiple flakes and a core were recovered in the vicinity of the midden, while a lower moose jawbone was recovered directly from the midden. The midden was undercut and suffering from erosion, but large portions were still stable. Unfortunately, due to the level of the tide, an intertidal survey could not be conducted.

The moose jawbone was sent to the Beta-Analytic testing laboratory for radio-carbon dating. The conventional radio-carbon date revealed a date of 490 ± 30 BP (Beta-696641; bone collagen; $\delta^{13}\text{C} = -22.5$ ‰). The 2σ calibration of this date is 546–498 cal BP, or 1404–1452 AD. This places the site at the end of the Late Maritime Woodland period (1300–550 cal BP) and beginning of the Protohistoric period (550–350 cal BP).



Figure 6.4: The eroding shell midden at site 80.22. Note the vegetated bank containing shell and black soil.

6.4 Site 80.21

RSPI and MHPC maps showed site 80.21 to be located in a southeastern corner of a cove approximately three-quarters up the western side of the island. When this area was surveyed no evidence of an archaeological site was found. However, 150 m north of the indicated location, a small shell midden eroding from a bank was identified

(Figure 6.5). The site is severely eroded; no artifacts were found in association with this site.



Figure 6.5: The small shell midden associated with site 80.21. Note the shell spilling out of the bank, which is severely under cut and held together by the root bed.

6.5 Survey Conclusion

During the survey, three sites were recorded and multiple artifacts were collected. Valuable insights on site structure and placement were gained. It is our belief that the Knaptons considered the northeastern area of Falls Island to be one large site, because there are two sites located on MHPC maps and two northeast sites mentioned in the RSPI catalogue. The first site mentioned is “beach on east side; 6–8 inches of fire dirt and broken shell” and is listed as 126/20. The second site mentioned is “beach of small island 75 yards east of the mainland site” and is also listed as site 126/20. Based on this description the island being referred to must be the intertidal island (80.43 on

MHPC maps)(see Table 6.1); however, the mainland site does not resemble a beach. The beach site is likely farther north and listed on MHPC maps as 80.20, which is in a cove, with low relief, ideal for landing or launching canoes. It consists of gravel pebble beach above the high-water line, and lag deposit in the intertidal zone. Both 80.20 and 80.43 are eroded. It is probable that site 80.43 was much larger and was heavily eroded prior to the Knaptons collecting it. The small intertidal island midden could be all that is left of a once extensive site and survived because it is elevated on a bedrock outcrop. The intertidal island site should be excavated promptly as it is actively eroding from all sides.

Table 6.1: Site names and their associated RSPI and MHPC site numbers.

Site Name	RSPI site #	MHPC site #
Northeastern Beach	126/20	80.20
Intertidal Midden	126/20	80.43
Western Midden	126/22	80.22
Eroded Western Midden	126/21	80.21



Figure 6.6: Results of August 17, 2023, survey of Falls Island.

Chapter 7: Settlement and Subsistence

The Falls Island collection and associated sites offer a unique window into use of insular space from the Late Maritime Archaic to Late Maritime Woodland periods in the Quoddy Region and throughout the Atlantic Northeast. Artifacts from the collection and associated sites can be compared with similarly dated sites in the Quoddy Region and the Atlantic Northeast. This data will be added to the growing body of literature in the region. These studies will enhance understanding of precontact use of islands.

7.1 Late Maritime Archaic Settlement and Subsistence Patterns

Late Maritime Archaic period coastal occupation and utilitarian sites are rare in the Quoddy Region, and Falls Island provides an opportunity for comparisons with other LMA period sites in the Atlantic Northeast. These comparisons can aid in understanding preferred site locations and lead to inferences regarding subsistence patterns, as well as add to the growing database of coastal LMA period site placement based on legacy collections and recoveries by contemporary avocational archaeologists.

A broad regional approach, with a focus on the Gulf of Maine, will be used to analyze settlement and subsistence strategies at Falls Island. Generally, LMA period coastal sites are oriented towards hunting and fishing large marine species (Betts and Hrynck 2021:108). However, there are important regional differences: north of the Gulf of St. Lawrence, large sea mammals such as seal and walrus were hunted, while in the Gulf of Maine, swordfish and cod were the preferred species. Seasonal habitation patterns also factor into settlement and subsistence strategies. To understand the

environments and species of the period, paleo-environmental and paleo-oceanography data must be considered.

7.2 Falls Island Settlement and Subsistence

The Late Maritime Archaic occupation of Falls Island has been attributed to site 80.20. This site has many of the elements common to LMA period sites throughout the Atlantic Northeast. It is located on a low relief, gravel, crescent shaped beach with a northeastern exposure facing the open water. The location is fitting for maritime hunting and fishing as it provides convenient access to open water and would permit the landing and launching of large dugout canoes.

Subsistence strategies at Falls Island are difficult to infer. A foreshaft made from terrestrial mammal bone offers limited evidence of interior hunting. The foreshaft also indicates that the marine environment was important, as foreshafts were utilized in open water hunting. The presence of walrus tusks at LMA period sites (e.g., the Basin, Turner Farm, and Port au Choix) and the absence of tusks from Maritime Woodland period sites suggests that the tusk from Falls Island is affiliated with the LMA period. However, the water in the Gulf of Maine was probably too warm to support walrus; thus, the tusk was likely traded from a northern clime.

Sanger (2009:8) proposes that foreshafts were part of a specialized hunting technology during the LMA period. This technology was utilized for swordfish hunting in the Gulf of Maine. Based on site placement and presence of the foreshaft, it is possible that swordfish hunting was occurring on Falls Island. Harpoons were secured to a long pole via a foreshaft, which was typically slotted at one end to receive the harpoon; the

slot allowed the harpoon to remain in the prey while the foreshaft and pole could be pulled free (Sanger 2009:9). A leather or fibre cord attached to the line hole of the harpoon was secured to an anchor point on a boat or float (Sanger 2009:9, 11). Once the swordfish was harpooned and exhausted, it was hauled in and spearing weapons were used to deliver the “coup de grace” (Sanger 2009:11).

Conclusive evidence of swordfish hunting has not been recovered from the coastal Quoddy Region. Rising sea levels, combined with land subsidence, have eroded LMA period coastal sites in the region. The best evidence for swordfishing in the Quoddy region comes from two inland sites, N'tolonapemk and 95.20, in Washington County, Maine. N'tolonapemk is located at the outlet of Meddybemps Lake, approximately 24 km inland from Falls Island (Brigham et al. 2005). Faunal remains at the site included alewife, eel, deer, and swordfish (Brigham et al. 2005:338). A minimum of fifteen swordfish rostrum fragments, four of which are modified, are attributed to the LMA period (Brigham et al. 2005:323; Sanger 2009:7). Some of the recovered swordfish rostrum fragments are from a hearth feature dating to 4310 ± 40 BP (Brigham et al. 2005:75).

Swordfish rostrum was also recovered from site 95.20, located approximately 50 km inland from Falls Island (Cox 1991). The rostrum was unilaterally barbed and recovered in several calcined fragments; it was associated with charcoal dates of approximately 5000 BP (Cox 1991:148). Based on site location, radiocarbon dates, and the presence of large Otter Creek style projectile points, site 95.20 is attributed to the Laurentian tradition. Most archaeologists consider the Laurentian tradition interior

adapted, leading Cox (1991:158–159) to hypothesize that the rostrum may have been acquired through trade with the coastal LMA tradition. Alternatively, coastal Laurentian tradition sites may have been erased by rising sea levels (Cox 1991:158–159).

The presence of swordfish rostrum fragments at interior Washington County sites suggests that swordfish may have been hunted by LMA period peoples at Falls Island, and the Quoddy region generally, as early as 5000 BP. However, as Sanger (2009:7) points out, these finds “extend the eastern limit of swordfish bone objects but not necessarily the oceanic range of swordfish.” Presently, swordfish are exceptionally rare visitors in the Gulf of Maine proper and are not present in the Bay of Fundy; however, this may not always have been the case.

Sanger (2009:14) notes that “nearly all” coastal Maine sites with swordfish remains (see Figure 7.1) are located along the Eastern Maine Coastal Current (EMCC), which runs from Grand Manan, along the coast of Downeast Maine, travels offshore, and then enters Penobscot Bay. Currently, swordfish rarely enter the EMCC as the water temperature is too cold (Sanger 2009:13). Swordfish hunting requires sea surface temperatures (SSTs) of 16°C; in this environment swordfish bask on the surface where they can be approached by boat and harpooned (Sanger 2009:12). Sanger (2009:17) postulates that EMCC sea surface temperatures were warmer during the LMA period, and suggests that a warm period, known as the mid-Holocene thermal maximum, occurred over a “1,500–2,000 year period centered at 4800 BP” and raised SSTs (Sanger 2009:17). Therefore, swordfishing could have been possible in the Quoddy Region.

Shaw et al. (2010:1080) have shown that during the Archaic period tidal ranges were much smaller in the Gulf of Maine and Bay of Fundy than at present. They suggest that a glacial till dam separated Minas Basin from the Bay of Fundy, which constrained tides, and resulted in low tidal amplitude (Shaw et al. 2010:1080). Spiess (2023) suggests that low tidal amplitude caused a reduction in cold water upwelling, resulting in warm summer SSTs. When the Minas Basin dam was destroyed around 3400 BP, tidal amplitude increased rapidly over a few centuries as the Bay of Fundy began resonating “with semi-diurnal tides” (Shaw et al 2010:1089). Spiess (2023) believes the increase in tidal amplitude resulted in cold water upwelling and the elimination of warm summer SSTs in the Gulf of Maine (Spiess 2023). This evidence has led Spiess (2023) to advocate that, prior to the Minas Basin dam destruction, swordfishing was not limited to mid-Coast Maine, but was also occurring in northeastern, Maine, and the Quoddy Region.

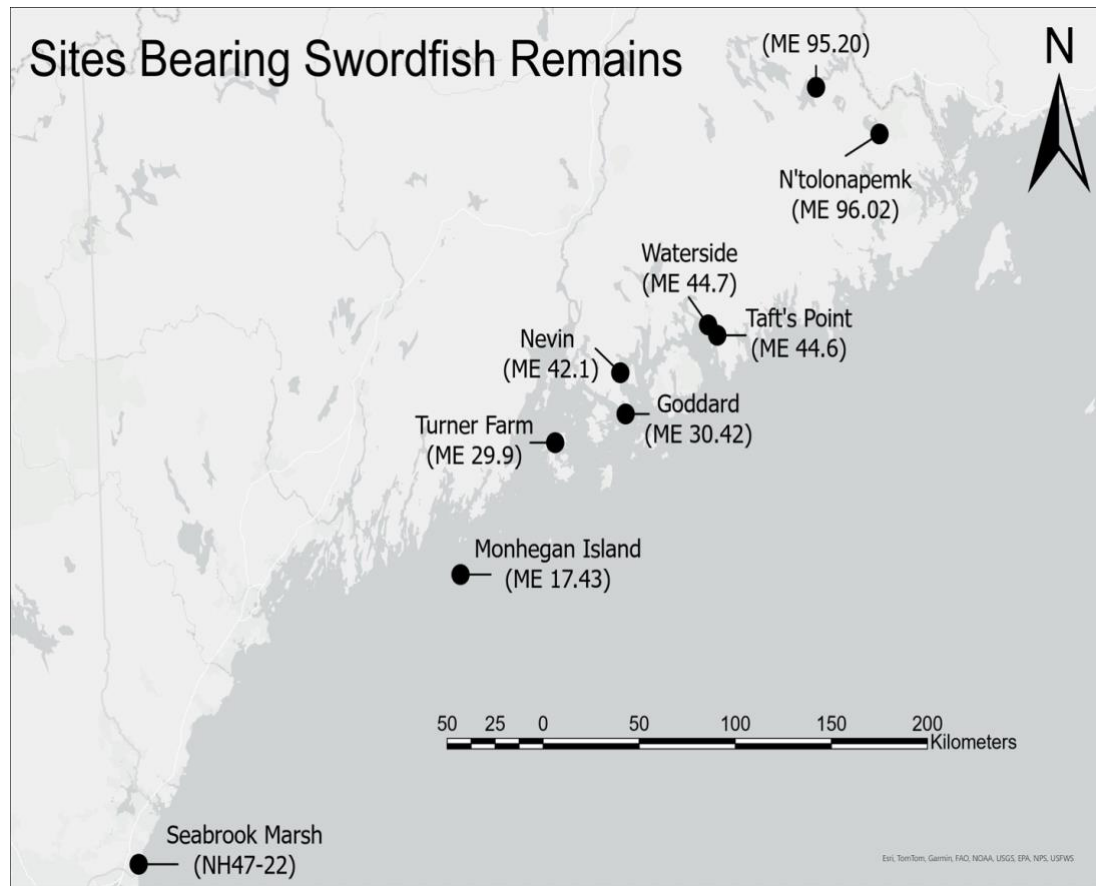


Figure 7.1: Map showing archaeological sites in the Northeast with swordfish remains. Sites 95.20 and 96.02 are in close proximity to the Quoddy Region.

7.3 Falls Island's place in the Late Maritime Archaic period

Evidence of Late Maritime Archaic period swordfishing in the coastal Quoddy Region is sparse as erosion has compromised the archaeological record. The closest coastal site with swordfish remains is the Waterside site in Frenchman's Bay, which is approximately 100 km south of Cobscook Bay. Weapon technology from Falls Island is similar to that of mid-coast Maine and indicates a comparable maritime orientation. If subsistence patterns for Falls Island are inferred from mid-coast Maine, site 80.20 was likely occupied during multiple seasons, but may have been specifically visited as a fishing camp during the summer.

7.4 Falls Island's place in the Transitional Archaic period

A Transitional Archaic period site is difficult to place on Falls Island as there are no Transitional Archaic artifacts with conclusive provenience information. However, comparisons can be made to known Transitional Archaic sites in the eastern Quoddy Region to devise a plausible site location. Black's (2018) work on settlement patterns in the eastern Quoddy Region identified several commonalities shared by coastal Transitional Archaic period sites.

Black (2018:66) observed that Transitional Archaic period sites in the eastern Quoddy Region tend to be situated on low, elongated landforms which are frequently covered by salt marsh (Black 2018:66). The sites have low relief and are often located on islands or peninsulas. They are exposed to the west-northwest or northeast and face large coves or open bodies of water (Black 2018:66). These commonalties led Black (2018:66) to conclude that "Terminal Archaic . . . inhabitants of the Quoddy Region depended on watercraft for subsistence-, residential-, social-, and exchange-related transportation."

This model of settlement shares several commonalities with LMA period models. Both settlements favour low relief landforms with a northward exposure and face large bodies of water. In the eastern Quoddy Region there is tantalizing evidence that coastal LMA and Transitional Archaic period sites are located in similar areas. On Casco Island, Transitional Archaic period artifacts have been found in the same location as a LMA period slate bayonet fragment (Abbott 2020; Black 2023:57; Pers Comm. David Black, February 2024). On Little Island, located off the eastern side of Deer Island, Transitional

Archaic and Late Maritime Archaic artifacts have been found in the same vicinity at intertidal sites. In the collections from both sites, Transitional Archaic period artifacts are more common than Late Maritime Archaic artifacts; doubtless because Late Maritime Archaic sites are farther offshore as a result of chronological shingling and sea level rise. This interpretation is reinforced by Early and Middle Maritime Archaic period artifacts recovered by scallop draggers from drowned sites (Black 1988:73–79, 2008; Price and Spiess 2013). Deal (1984:37) noted a similar pattern in the interior of the Chiputneticook-St. Croix drainage, with nine out of thirteen Transitional Archaic period sites containing Late Maritime Archaic artifacts.

In the western Quoddy Region, Anderson et al. (2024:11–12) have noted the presence of Transitional Archaic period artifacts underlying Maritime Woodland shell middens. These shell middens generally fit the settlement and subsistence models associated with coastal Maritime Woodland period sites in the Maritime Peninsula (Anderson et al. 2024:11; Betts 2019; Sanger 1996). Black's (2018) and Anderson et al.'s (2024) interpretations of Transitional Archaic period settlement patterns in the Quoddy Region suggest that the Transitional Archaic period was truly transitional, with some settlement patterns conforming with both the Late Maritime Archaic and Maritime Woodland periods.

7.5 Falls Island's place in the Early Woodland period

The presence of late Transitional Archaic Orient Fishtail-like points and Early Maritime Woodland wide side-notched projectile points at Falls Island supports Sanger's (1988:90) and Black's (2000:101) hypothesis of culture continuity between these two

periods in the Quoddy Region. Undisturbed Early Maritime Woodland sites are rare in the Quoddy Region; two notable sites include the Carson site in Passamaquoddy Bay and the Weir site on the Bliss Islands.

At the Carson site, Sanger (1987:37) recovered wide side-notched projectile points from the “clayey subsoil” beneath the shell midden. Based on the stratigraphy, Sanger believed this basal layer predated the Late Maritime Woodland period shell midden. Although there are no radiocarbon dates associated with this occupation, Sanger (1988:33) recognizes that “these points are undoubtedly earlier than the shell midden deposit . . . Lacking any comparable dated artifacts in the Quoddy Region, an estimate of 3000 years ago is applied.”

In the basal strata of the Weir site, a “thin humic soil layer” dated to 2360 ± 80 BP and 2270 ± 70 BP was noted (Black 2000:99). These dates are on a radiocarbon plateau and therefore must be used cautiously (Pers Comm. David Black, March 2024). Immediately above this layer were “a few small shell lenses and patches of cultural gravel” from which two wide side-notched projectile points were recovered (Black 2000:99).

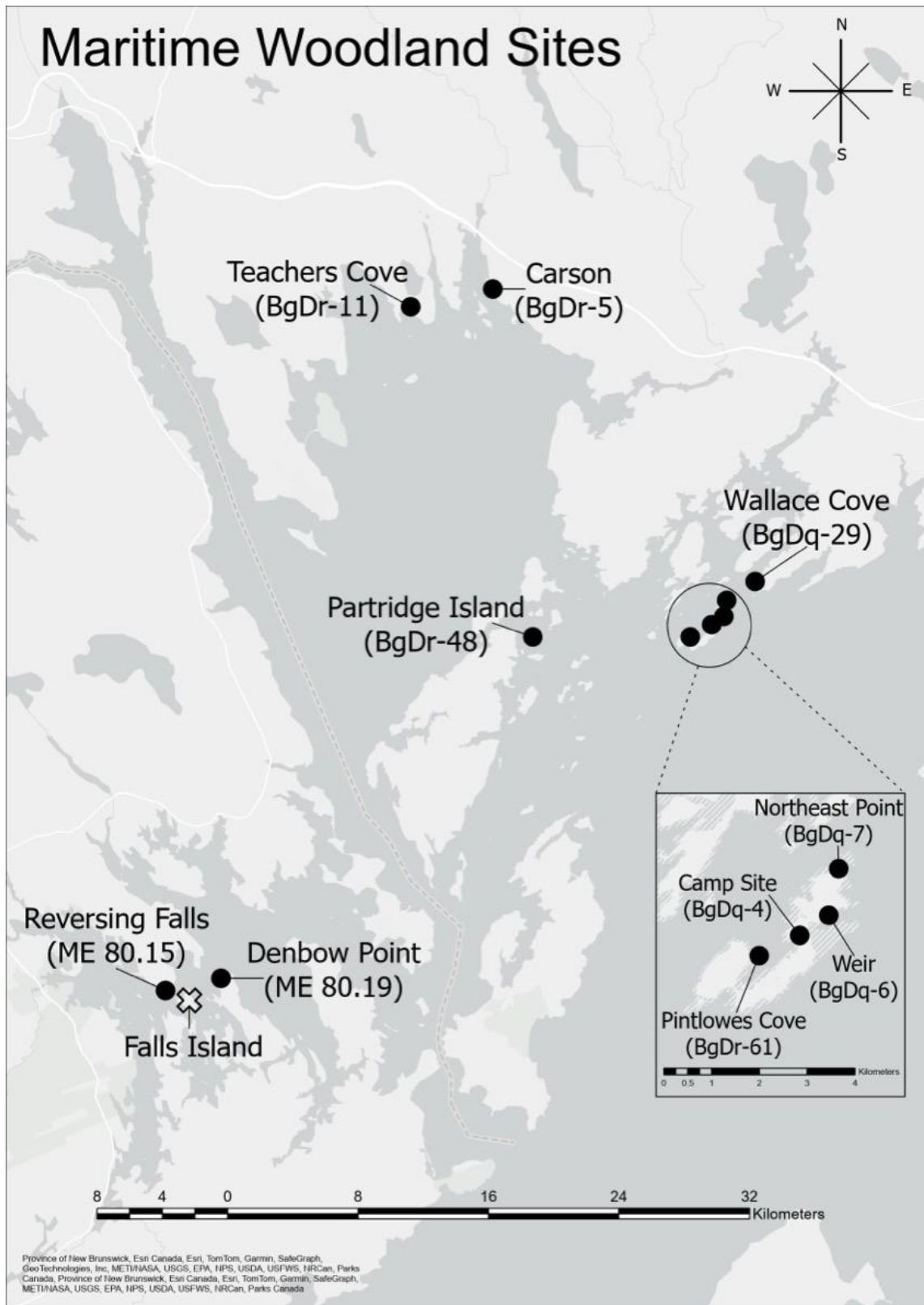


Figure 7.2: Maritime Woodland Sites in the Quoddy referred to in text.

7.6 Falls Island's place in the Middle Maritime Woodland period

The single diagnostic artifact from the Middle Maritime Woodland period is a sherd of ceramic with pseudo scallop shell motifs. Based on the Knapton catalogue, which features numerous ceramics from sites in the Quoddy Region, we know the brothers recognized and collected these materials. The lack of ceramic from Falls Island may indicate that the Middle Maritime Woodland occupation was small or temporally brief. The absence of diagnostic artifacts makes it difficult to glean information about the Middle Maritime Woodland period from the Falls Island collection.

7.7 Falls Island's place in the Late Maritime Woodland period

The Late Maritime Woodland occupation of Falls Island is difficult to decipher. This period produced the largest collection of artifacts, yet none have provenience information. Our 2023 survey produced a water-rolled, corner-notched projectile point from the storm beach in the area around site 80.20, which implies this site had a Late Maritime Woodland component. The radiocarbon date of 546–498 cal BP associated with the midden at site 80.22 is evidence for a Late Maritime Woodland-Protohistoric component. Further settlement and subsistence patterns can be hypothesized based on work by Black (1992,2002) and Sanger (1987).

Black's work in the eastern Quoddy Region provides useful comparisons for settlement and subsistence patterns of Late Maritime Woodland period sites in the western Quoddy Region. Black (2002:313) reports that settlement patterns shift seasonally, with cold season occupations on the coastal mainland and insular

occupations during the warm season. At the Weir site on the Bliss Islands, Black (2002:308) interpreted faunal remains such as migratory birds, harbour seals, and cod fish as seasonal indicators signifying a warm season occupation. The faunal assemblage indicates that subsistence strategies focused on soft-shelled clams, harbour seals, herring, codfish, deer, moose, and migratory birds (Black 1992:152).

Faunal assemblages from mainland sites indicate they were occupied during the cold season. Black (2002:305) states mainland faunal assemblages are “dominated by cervids – especially deer (*Odocoileus virginianus*) and moose (*Alces alces*), fur-bearing mammals – especially beaver (*Castor canadensis*), ducks and geese (*Anatidae*), shorebirds (*Alcidae*), seals – especially harbour seal (*Phoca vitulina*), and shellfish – especially soft-shelled clams (*Mya arenaria*)”. Black (2002:305) also noted seasonal indicators such as “patterns of beaver tooth eruption, presence of migratory bird species, and lack of vertebrate fish remains indicate that these sites represent cold season occupations.”

Changes in site placement and structure occur between the early Late Maritime Woodland period and the later Late Maritime Woodland period. Patton et al. (2022:345) have shown that later Late Maritime Woodland period settlement patterns may have been “dispersed, or fragmented, along coastlines,” instead of “nucleated and sedentary.” These sites tend to be in different locations than earlier sites, and typically consist of thin, patchy shell deposits (Patton et al. 2022:358–359). These changes led Patton et al. (2022:372) to suggest a shift from “nucleated settlement toward dispersal” as smaller groups spread out along the coastal margins.

Black's (2023:67) research in the eastern Quoddy Region has shown that Maritime Woodland period sites are generally "exposed to the south, southeast and/or southwest and sheltered to the northwest." This orientation offers protection from the prevailing northwestern winds during the winter, and faces the prevailing summer winds, perhaps helping keep bugs at bay (Pers Comm. David Black, March 2024). Typically, these sites are not exposed to the open ocean, have a freshwater source nearby, and are located in close proximity to clam flats. This model of LMW site placement correlates with the sites on the western side of the island, particularly site 80.22, which is not exposed to the open ocean, faces directly to the southwest, is in close proximity to a clam flat, and is associated with a radiocarbon date that places it in the Late Maritime Woodland-Protohistoric periods. Yet, during our survey we recovered a Late Maritime Woodland period projectile point from the northeastern beach site (80.20). The location of site 80.20 is inconsistent with Maritime Woodland period sites, for it is exposed to the northeast and faces the open ocean.

Although rare, northern exposed Late Maritime Woodland period sites have been reported in the Quoddy Region. The Northeast Point site (BgDq-7) on the Bliss Islands and the Wallace Cove Beach site (BgDq-29) are both exposed to the northwest (Pers Comm. David Black March, 2024). These sites are considered atypical due to their orientation, distance from productive clam flats, absence of shell and faunal remains, and lack of seasonal indicators (Hrynich and Black 2016:40; Pers Comm. David Black, March 2024; Suttie 2011).

The Northeast Point site is dated to $1500 \pm 70\text{BP}$ and $1280 \pm 80\text{BP}$ (Hryn timer and Black 2016:45). The archaeological assemblage is composed almost entirely of lithic artifacts, including projectile points, small scrapers, and utilized flakes (Hryn timer and Black 2016:45). The lithic materials include local quartz and volcanics and a large percentage of exotic materials (Hryn timer and Black 2016:45). Black (1992:90) notes that “much of the debitage represents bifacial thinning and retouch flakes” indicating that tools at the site were mainly in their finished form. It is notable that ceramic and ground stone artifacts were not recovered from the site (Black 1992:90).

The Wallace Cove Beach site (BgDq-29) has a similar northwestern orientation. The majority of the artifact assemblage consists of lithic debitage and formal tools (Hryn timer and Black 2016:47). No ceramic artifacts were recovered. In total, 208 pieces of debitage and 32 formal tools were recovered; the majority of the formal tools are bifaces and small scrapers (Hryn timer and Black 2016:47). Similar to the Northeast Point site, lithic materials included local quartz, volcanics, and cherts. Exotic brightly coloured cherts also made up a large portion of the lithic assemblage.

These locations indicate that northern exposed sites with predominately flaked stone lithic assemblages existed during the Late Maritime Woodland period. The assemblages are comparable to the Falls Island collection, which is also predominately flaked stone, and features small unifacial scrapers and projectile points, many of which are made from exotic materials. Similarly, the Falls Island Late Maritime Woodland component does not include ceramic, and contains only a single ground stone tool. Interpretations from this material are difficult to make, as it is not known how much

Late Maritime Woodland period material is associated with the northern exposed sites on Falls Island. However, it is possible that these sites had a specialized usage, perhaps as a hunting station, which generally required flaked stone tools.

Many of the projectile points from Falls Island are broken on the blade margin or hafting element, indicating the break occurred during use. None of these points exhibit obvious wear from water rolling, suggesting they were collected from a midden or shortly after erosion into the intertidal zone. The complete absence of ceramic and the large number of lithic artifacts may signify a gendered use of space at north facing Late Maritime Woodland period sites (Hrynck and Betts 2017). The broken condition and overwhelming quantity of lithic artifacts implies the site may have functioned as a hunting camp, possibly for seals during whelping seasons.

Based on west-southwestern orientation and lack of erosion, a radiocarbon date, as well as artifacts recovered during our survey, I believe site 80.22 has a Late Maritime Woodland component. Site 80.43 may also have a Late Maritime Woodland component. The eroding midden on the intertidal island resembles black soil middens with flecked shell typical of this period. Therefore, it is possible that all four sites on Falls Island may have had Late Maritime Woodland period components, making the period difficult to parse.

Chapter 8: Discussion and Conclusions

8.1 Discussion

In this thesis I have used archival and survey data to consider culture history at Falls Island. With scant provenience data and collection records, and severe erosion which has destroyed two sites and damaged two others, it is impossible to determine the cultural affiliations of each site. My interpretations are based on the available provenience information, and regional settlement and subsistence patterns.

I believe the Late Maritime Archaic period component on Falls Island was likely located at site 80.20 on the northeastern beach. This theory is based on the provenience of a large ground stone adze and massive retouched or utilized flake, which are representative of the LMA period. A comparison of regional settlement and subsistence data in the Atlantic Northeast also supports this conclusion. The complete erosion of the site further supports this theory. LMA period sites in the Gulf of Maine (e.g., Moose Island, Waterside, Nevin, and Tafts Point) were eroding around the 1950s, suggesting rising sea levels had inundated the majority of these sites by that time. Theodore Stoddard's comment that the Knaptons stopped visiting Falls Island around 1950 as the sites were "non-productive" suggests that site 80.20 fits this erosional pattern (Pers Comm. T. Stoddard, April 28, 2023).

Conversely, the recovery of a corner-notched projectile point from the vicinity of site 80.20 does not fit with overall patterns for Maritime Woodland period settlement and subsistence. However, upon further research, it was noted that northern exposed Late Maritime Woodland sites have been previously documented. These northern sites tend to be ephemeral, with a high quantity of lithic artifacts and little to no ceramic,

indicating that the four sites on Falls Island plausibly have Maritime Woodland period components.

Considering Maritime Woodland period settlement and subsistence data in the Quoddy Region (*sensu* Black 2002; Sanger 1987), I hypothesize that the western sites (80.21 & 80.22) were occupied during the Maritime Woodland period. Both sites are located adjacent to a narrow channel with a southwestern orientation, and are in close proximity to clam flats, which is consistent with Maritime Woodland period site placement (Black 2018:68). Moreover, the artifacts recovered from site 80.22 during our survey are consistent with artifacts recovered from Maritime Woodland period sites in the Quoddy Region.

I believe most of the Falls Island collection is from the northeastern sites, 80.20 and 80.43. All but one of the artifacts with provenience are from these sites, with the only exception being an ovate biface from the intertidal area in front of site 80.22. The northeastern sites are the easiest and safest to reach by boat and would have been clearly visible to the keen eyes of the Knapton brothers. Reaching the western sites would have been challenging due to the reversing falls phenomenon and would have required careful timing of the tides or an overland hike across the island. Stoddard's comment that the Knaptons no longer visited Falls Island in the 1950s suggests the western sites may have been too difficult to reach or were not visible at the time.

8.2 Conclusion

The Falls Island legacy collection demonstrates the utility of collections research in coastal areas. In the Quoddy Region, sea-level rise has led to erosion, which has

diminished or completely destroyed the archaeological record in some areas. As shoreline loss is a time-transgressive process, it creates patterns like chronological shingling (Young et al. 1992). The Falls Island legacy collection clearly demonstrates the effect of chronological shingling on the Quoddy Region. When the Knaptons were collecting artifacts between 1930–1950, there were still coastal sites with intact LMA period components. Currently, the oldest known coastal sites date to approximately 2500 BP, meaning that in less than a century there has been 1500 years of archaeological data lost. Working with collections may be the only way to research these now eroded sites and bridge the gap in the archeological record.

Typologies in the Maritime Peninsula, particularly in the Quoddy Region, are now refined to the point that culture-historical approaches can be used to organize archaeological collections. Some caveats exist with culture-historical approaches. Currently, diagnostic artifacts are largely limited to projectile points, ground stone tools, specialized bone tools, and ceramic. Some artifact classes, including several types of bone tools (e.g., harpoons) are not yet refined enough for temporal placement in the archaeological record. Certain artifact classes, such as lithic debitage, are problematic as they are not generally temporally diagnostic. As archaeologists' understanding of the regional archaeological record continues to evolve, more artifact classes will become temporally diagnostic, further refining culture-historical research methods.

LMA coastal sites are scarce in the Quoddy Region. Prior to analysis of the Falls Island collection, the only coastal site with a LMA component was the Eastport site. The Falls Island collection, which includes flaked stone, ground stone, bone, and faunal

artifacts, adds significantly to the LMA record in the Quoddy Region, specifically regarding technological attributes and settlement and subsistence patterns.

The LMA component at Falls Island is also an important link within the Atlantic Northeast. LMA artifacts from Falls Island are morphologically and technologically similar to LMA artifacts from both Newfoundland and Maine, while comparisons of site placement suggest settlement and subsistence patterns were analogous throughout the Atlantic Northeast. These parallels suggest that the LMA culture was integrated throughout the region.

Site surveys and updating site databases should be done in tandem with collections research. Prior to our survey, Falls Island had never been visited by professional archaeologists. Our survey relocated three sites: two are good candidates for excavation; one has been destroyed; and one, although completely eroded, was relocated based on the presence of a projectile point. We were able to update the MHPC site database with location, condition and site size information. The data is valuable for understanding precontact settlement and subsistence patterns and adds significantly to the ongoing Northeastern Archaeological Survey.

Mitigation of Falls Island's two remaining archaeological sites should be undertaken soon. Site 80.43, the shell bearing site on the intertidal bedrock outcrop, is at the highest risk of erosion, and should be excavated as soon as possible. Site 80.22 is somewhat protected from erosion by its placement in a cove, and by the vegetation growth on the site. However, there is also evidence that the site is actively eroding. During our survey we recovered artifacts from the intertidal zone in front of the site,

and cervid mandible was recovered from an eroding face. Therefore, I suggest site 80.22 be excavated in the close future before further erosion takes its toll.

The pace of coastal erosion is accelerating, and archaeologists, stakeholders, and rights holders are forced to make difficult decisions regarding which sites to save.

Collections research can help fill in the blanks caused by coastal erosion. Typological work has expanded since the days of the Knapton brothers and a viable framework now exists for interpreting collections with limited provenience. If the collections are well provenienced, sites can be placed on the map and add to understanding of settlement and subsistence patterns in the Quoddy Region. Black (2018:5) sums up the state of coastal archaeology in the Quoddy Region in his assertion that “it is better to know something about these sites than to know nothing.” My research on the Falls Island collection corroborates Black’s statement, and affirms that collections research adds valuable information to archaeological sites that are no longer accessible.

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Joshua A. Cummings

Curriculum Vitae

EDUCATION:

B.A. Honours in Anthropology 2018-2022; University of New Brunswick, Fredericton

M.A. Anthropology 2022-2025; University of New Brunswick, Fredericton

PUBLICATIONS:

Anderson, Arthur, Gabriel Hrynck and Josh Cummings

2024 The Quoddy Region Archaic Through Early Collections. *Northeast Anthropology, Papers in Honor of Dave Black*, 93-94:93-121.

CONFERENCE PRESENTATIONS:

2023 Eastern States Archaeological Federation

Ocean City, Maryland

Falls Island Research Project

Presented *The Falls Island Research Project*

2023 Maine Archaeological Society AGM

Orono, Maine

Public Presentation

Presented *The Falls Island Research Project*

2023 CAA (Canadian Archaeological Association)

Membertou, Nova Scotia

Papers in honour of David Black

Presented *The Falls Island Research Project*

2023 SHA (Society for Historical Archaeology)

Lisbon, Portugal

Poster Session 1

A Solid Foundation: Investigations of Early French Occupation in Southwestern New Brunswick, Canada

2024 Eastern States Archaeological Federation

Newport, Rhode Island

Poster Session

Evidence for Late Maritime Archaic Occupations in Interior Riverine New Brunswick.