

**“...gathering pebbles on a boundless shore...” —
The Rum Beach Site and Intertidal Archaeology in the Canadian Quoddy Region¹**

Revised and Extended Version

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Abstract

During the past three decades a distinctive set of archaeological assemblages has been recognized and recovered from intertidal zones in the Canadian Quoddy Region. These discoveries began with the Rum Beach site on the Bliss Islands (Figure 1). Projectile points, drills, bifaces and lithic materials indicate that substantial portions of these assemblages have been eroded from sites dating to the Terminal Archaic period and the Terminal Archaic–Early Maritime Woodland transition (Table 1), as a result of rising sea levels. The locations where these assemblages have been found share several commonalities that distinguish them from the locations of more recent land-based archaeological sites in the Quoddy Region. Specifically, the Terminal Archaic–Early Maritime Woodland assemblages are associated with intertidal marsh deposits situated on landforms topographically lower than those where nearby, more recent, prehistoric² and historic period sites typically are located. Moreover, the Terminal Archaic–Early Maritime Woodland assemblages are eroding onto shoreline segments dramatically different in orientation and exposure from the later sites. Avocational archaeologists have played important roles in the discovery, exploration and recovery of these assemblages.³



Figure1: Rum Beach, as seen from Bliss Harbour.

¹ The quote in the title is taken from John Ruskin (1894), *Sesame and Lilies*, George Allen, London, UK. The context is a passage where Ruskin emphasizes the need for courage and humility in scientific endeavours.

² “Prehistoric” is a conventional—if somewhat controversial—archaeological term meaning, in this context, “before European contact.”

³ Please send questions about and comments on this monograph to the author at <dwblack@unb.ca>.

Acknowledgments

The earlier phases of the Bliss Islands Archaeology Project were funded by the Social Sciences and Humanities Research Council of Canada, McMaster University and the New Brunswick (NB) government's Archaeological Services Branch (ASNB), and conducted with the cooperation of St. Mary's University, the University of Toronto and the Royal Ontario Museum; the later phases were funded by the University of New Brunswick (UNB) and conducted with the cooperation of ASNB. I conducted the fieldwork with the cooperation of the owners and residents of the Bliss Islands. The intertidal archaeological research has been funded by UNB and by a Sabbatical Salary Grant to me, and conducted with the cooperation of the Sunbury Shores Arts and Nature Centre, the Greens Point Light Association and avocational archaeologists. Many residents of the Quoddy Region have assisted my research into intertidal archaeology. I thank everyone who has helped me, including, in no particular order, Chris Turnbull, Susan Blair, Gabe Hrynicky, Marilyn Richardson, Shianne MacDonald, Darcy Dignam, Chris Blair, Drew Gilbert, Cora Woolsey, Emelie Hubert, Pat Polchies, Scott Neilsen, Brent Suttie, Austin and Kaley Paul, Alex Pelletier-Michaud, David Milley, Gary Young, Art Spiess, Steven Cox, Mike Strong, Maria Buzeta, James Steele, Audrey Cline, several anonymous avocational archaeologists and two generations of UNB Anthropology students too numerous to name individually here.⁴

This monograph is dedicated to Ralph and Arlene Welch, Reg Richardson and Bob Bosien, *in memoriam.*

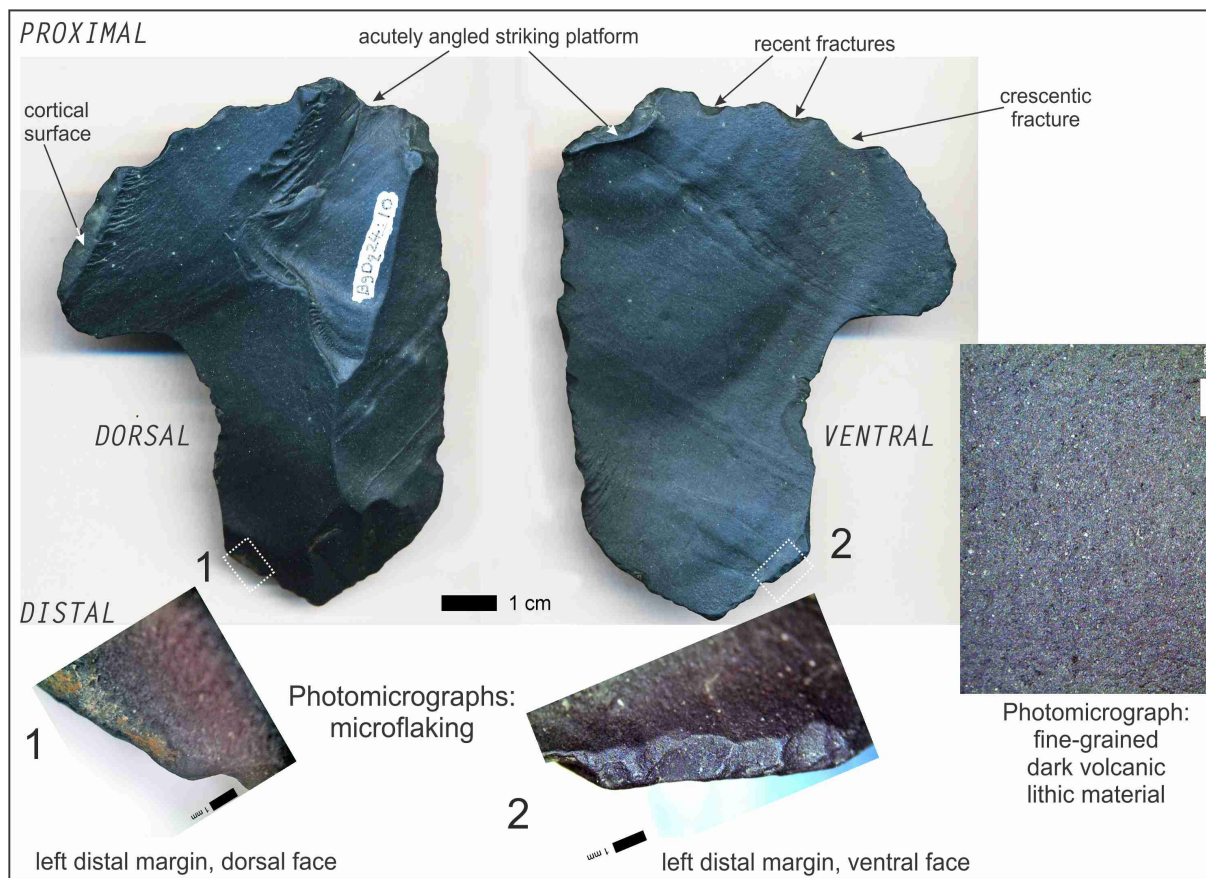


Figure 2: The Welch flake from Rum Beach (BgDq24:10). This flake must have been struck from a very large biface or bifacial core of dark volcanic.

⁴ All images are by the author except where otherwise noted.

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Table 1: Culture-historical terminology used in this monograph.

Period	Sub-Period	Date Range*
Historic		420 BP–present
Protohistoric		600–400 BP [†]
Prehistoric Maritime Woodland [¶]	later Late	1000–500 BP
	earlier Late	1600–900 BP
	Middle	2200–1500 BP
	Early	3100–2100 BP [‡]
	Archaic	Terminal ^{**}
	Late	5000–3800 BP
	Middle	8000–4800 BP

* Date ranges are approximations, and are deliberately broad and overlapping, because the culture history divisions reflect both chronometric dating and material culture associations

[†] BP indicates uncalibrated, uncorrected radiocarbon years before present; see the section on radiocarbon dating below for more on this

[¶] When referring specifically to the Maine/Maritimes area, I use the designation “Maritime Woodland period;” when referring to the Northeast culture area generally, I use “Woodland period”

[‡] Land-based archaeological components date ca. 2500 BP to present in the Quoddy Region (Black 2004), beginning in the radiocarbon calibration plateau at ca. 2450 BP (Guilderson et al. 2005)

^{**} Sometimes referred to as the “Transitional Archaic” or the “Terminal Late Archaic”, this period includes the phenomena referred to variously as the “Susquehanna Tradition” (Bourque 1995), the “Broadspear tradition” (Sanger 1986), the “Broad Point Archaic” (Ellis et al. 1990), the “Susquehanna Archaic” (Wright 1995), the “Broad-tool tradition” (Cruz 2014), or the “Broadpoint phase/horizon/tradition” (Cook 1976)

[§] The Terminal Archaic–Maritime Woodland transition dates ca. 3200–ca. 2700 BP

BgDq24:94

Preamble

I have several purposes in presenting this monograph. *First*, I want to update and enhance the available information on the Rum Beach site (Figures 3, 4) and associated sites (Figure 6). *Second*, I want to show the potential these sites hold for archaeological interpretation. It is easy to be pessimistic about sites that have been eroded. In many ways intertidal archaeological sites are even more threatened by environmental change, sea level rise, and concomitant coastal erosion than are land-based coastal sites, because intertidal sites are submerged for at least part of every tidal cycle, because site structure and artifact associations have already largely been destroyed by tides, currents and wave action, and because any remaining *in situ* portions of intertidal sites are usually deeply buried by non-archaeological sediments and are submerged during part of each tidal cycle. Thus, intertidal sites are not amenable to, or are inaccessible to conventional archaeological excavation techniques. I feel that it is better to know something about these sites than to know nothing. *Third*, I want to highlight the contributions of avocational archaeologists⁵ to Quoddy Region archaeological research and to demonstrate the importance of periodically observing and collecting intertidal sites over substantial periods.

I wrote three brief newsletter reports on Rum Beach during the 1990s (Black 1994, 1996, 1997) and published a peer-reviewed paper on the site (Black 2000a). In the latter publication, I presented academic arguments for the chronological placement and cultural affiliations of the Rum Beach assemblage and posited it as a plausible precursor for the earliest land-based assemblage on the Bliss Islands—that from stratigraphic component 1 at the Weir site (BgDq6; Black 2000b:98–100; Black 2004c:35–38). However, neither my paper (Black 2000a), nor responses to it in the literature (e.g., Sanger 2008, 2012) include comprehensive descriptive accounts of intertidal archaeological assemblages.



Figure 3: Rum Beach and the adjacent marsh showing sampling locations and the cross-section transect (base map from GeoNB).

⁵ Here I use the term “avocational archaeologist” to refer to a spectrum of non-professional participants in archaeological work ranging from fortuitous and recreational artifact collectors, to citizen scientists with interests in the past, to serious non-academic students of the archaeological record. I exclude site looters and those who monetize artifacts and the archaeological record.

Site reports have become more difficult to publish in traditional academic venues, in part because of the increased volume of potential publications and consequent restrictions on the length of articles accepted for publication, but also because of prejudice against documents that are seen as largely descriptive. Nevertheless, site reports are an essential part of archaeological discourse, providing the underlying detail and validation for broader works of interpretation and synthesis. Site reports are the “thick description” of archaeology,⁶ explicating material culture assemblages, their patterning and associations and their spatial, temporal and cultural contexts.

Field research and site reporting in archaeology cannot be driven strictly by problem-orientation in the way that they can in many other physical and natural sciences. The ethics of archaeology dictate comprehensive recovery and reporting of the cultural contents and physiographic contexts of surface finds and units excavated, because of the idiosyncracies of each site, and because archaeological testing, excavation and collection are inherently destructive of features and contexts. Thus, site reports should not remain buried in the grey literature of the discipline; rather, they should be available to inform all who are interested.

The Internet now provides opportunities for inexpensive presentation and broad dissemination of site reports, including high-definition colour photographs and illustrations. Online presentation entails both benefits and risks. The ethics of their discipline encourage archaeologists conducting publicly funded research to communicate their findings to the public and the Internet facilitates such efforts.⁷ When sharing information online an archaeologist must trust readers to use that information responsibly. I trust that the contents of this monograph will be accepted and employed in the spirit in which I present them.



Figure 4: Aerial photograph (taken in 2011) of Rum Beach and the adjacent marsh at low tide during the summer (from GeoNB).

⁶ With apologies to Gilbert Ryle and Clifford Geertz, e.g., https://en.wikipedia.org/wiki/Thick_description

⁷ See, e.g., C.J. Ellis on the Davidson site, <http://anthropology.uwo.ca/cje/Davidson.htm>; Archaeological Services Inc. on the Mantle site, <https://asiheritage.ca/wp-content/uploads/2015/04/Mantle-Final-Report.pdf>

Introduction

Land-based coastal archaeological sites have been investigated in the Canadian Quoddy Region⁸ since the mid-19th century and, from the mid-1970s through the mid-1990s, ASNB⁹ sponsored a series of archaeological surveys directed at locating and recording coastal sites. It has been known for some time that, due to rising sea levels, land-based coastal prehistoric sites and components¹⁰ are restricted to the Maritime Woodland period, dating ca. 2500 BP to documented European contact (at ca. 420 BP). It also has been known for some time that earlier, distinctly different, Archaic period human occupations took place in now-inundated near-shore portions of the Quoddy Region. Until recently, these earlier occupations were represented mainly by individual artifacts recovered from the depths during commercial fishing and related activities (e.g., Black 2008; Turnbull and Black 1988).

In 1993, during Phase III of the Bliss Islands Archaeology Project (BIAP), I recorded an intertidal lithic artifact assemblage apparently eroding from beneath a buried peat deposit at Rum Beach (BgDq24). This led to the recognition of yet another distinctive set of archaeological assemblages, found in intertidal and contiguous subtidal contexts in the Quoddy Region, geo-stratigraphically between the underwater finds and the land-based prehistoric and historic coastal components. It is to these contexts that I direct attention here.

Rum Beach gives up its prehistoric secrets slowly (Figure 5). When I wrote the peer-reviewed article in the late 1990s (Black 2000a), Rum Beach had been surface collected on seven occasions, and the assemblage consisted of 98 pieces of flaked stone, including 16 cores and core fragments, 73 pieces of debitage and nine formal tools. No ground stone tools had been found on Rum Beach at that time. Now, the site has been surface collected ca. 25 times over a span of almost 30 years, by professional archaeologists, students, avocational archaeologists and members of the public, and I know of ca. 170 pieces of prehistoric material culture recovered from the site—of which I was able to examine 164 pieces for this monograph.¹¹ The prehistoric assemblage I report here consists of 162 pieces of flaked stone and two pieces of ground stone, including 22 formal tools, 23 informal tools, 21 cores and core fragments and 96 complete or fragmentary flakes. I also briefly mention some historic artifacts from Rum Beach. Most of these artifacts are in the BIAP collections; a few are in the collections of avocational archaeologists.



Figure 5: Students surface collecting at Rum Beach.

⁸ For a definition of the Quoddy Region see Thomas (1983); for the Canadian Quoddy Region, see Black (2014).

⁹ Herein, I use the acronym “ASNB” to refer to all of the incarnations of archaeology in the NB government since the early 1970s.

¹⁰ I use the term “component” to refer to the manifestation of a particular archaeological culture at a particular site; a site may contain a single component or several components. These definitions make identifying archaeological cultures sound like a straightforward process—it is not.

¹¹ One additional possible prehistoric artifact is described in Appendix C.

The Bliss Islands Archaeology Project

The BIAP was initiated in 1983. It has developed into a long-term, multi-phase examination of prehistoric and historic archaeological sites on the Bliss Islands, located immediately offshore from Blacks Harbour¹² on the Back Bay Shelf,¹³ Charlotte County (CC), NB. The project has documented the breadth and depth of the archaeological record on this small island group and has shown that the Bliss Islands and environs possess a representative microcosm of Quoddy Region coastal archaeology as a whole (e.g., Black 2004c).

Biogeographically, the Quoddy Region is the estuary of the St. Croix River, the Magaguadavic River and several smaller streams, and is part of the Bay of Fundy marine ecosystem. Culturally, the Quoddy Region forms part of the traditional territory of the Peskotomuhkatiyik (the Passamaquoddy people). The archaeological record of the region includes Indigenous occupations spanning at least 8000 years and Euro-Canadian and Canadian occupations spanning 450–500 years.

The archaeological inventory of the Bliss Islands includes seven historic archaeological sites dating from the late 18th through the early 20th centuries, including the homestead of Samuel Bliss and family (1783–1803) for whom the islands are currently named. There are nine prehistoric sites recorded on the islands, including 12 analyzable cultural components spanning the period from ca. 4000 years ago through the protohistoric period. In this monograph I focus on the earliest three prehistoric components (Figure 6) and one 20th century historic component.

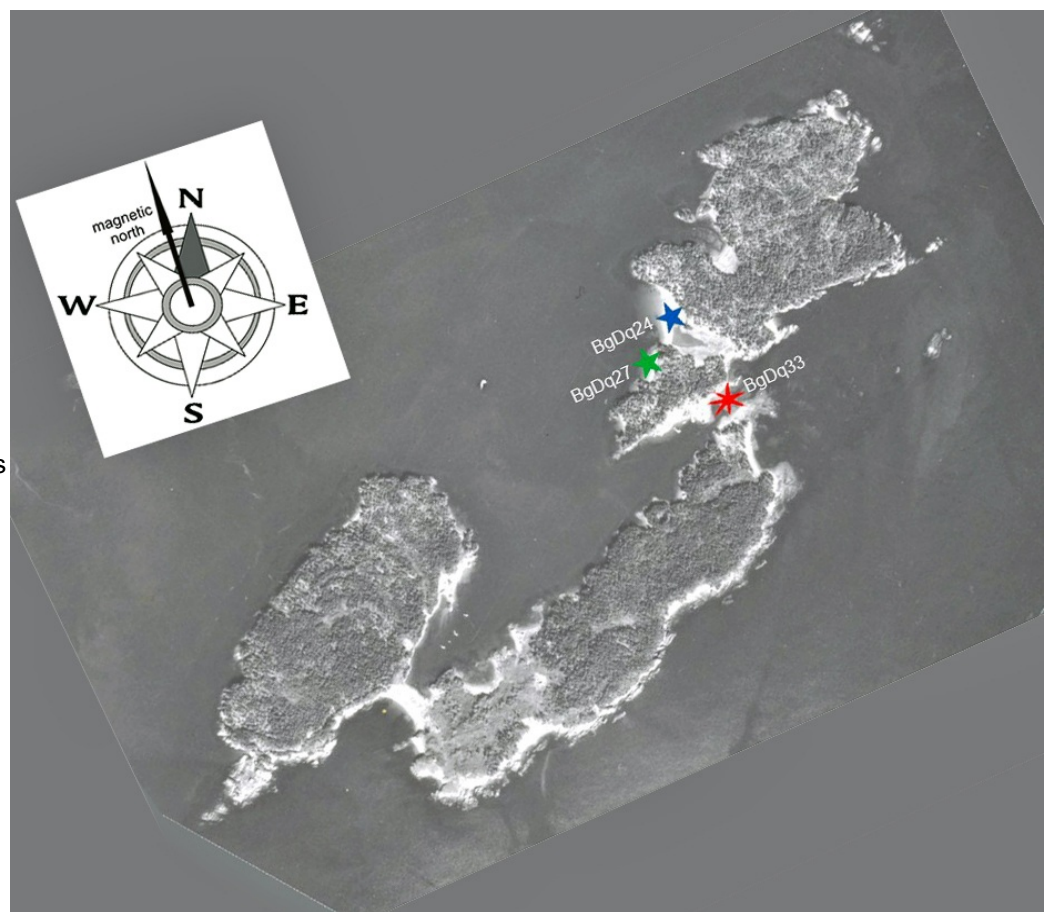


Figure 6: Aerial photograph (taken in 1978) showing the locations of the Bliss Islands sites discussed in this monograph.

¹² Note that here and below I omit the apostrophe in place names with possessives, consistent with Natural Resources Canada's National Topographic Service map conventions. I do it... but I don't like it.

¹³ For a definition of the Back Bay Shelf see Black (2004c:17, 2014).

The Investigation of Rum Beach

I first visited Rum Beach on July 7, 1983, the first day I spent on the Bliss Islands. My crew and I arrived at Fishermans Cove about midday; we were met by Murchie Mitchell, a fisherman from Back Bay then tending the herring weir at Spider Cove. By the time we had chatted with Murchie for awhile, and set up our field camp, it was too late in the day to begin mapping and excavating. So I asked Murchie if he could recommend a place where I might be able to take wildlife photographs. He suggested I walk over to “Rum Beach” on the opposite side of the northeastern island, where harbour seals hauled out on ledges at low tide. I found the seals (although I was never very successful at photographing them), I saw water-rolled fragments of liquor bottles glinting on the gritty foreshore, and I was stunned by the beauty of the beach and adjacent marsh in the red-gold light of late afternoon; but, given my knowledge at the time, it never occurred to me to look for prehistoric artifacts there. Later I checked some sources on NB toponymy¹⁴ and discovered that the beach has no official place name.¹⁵ A decade passed before I began to understand the significance of the unofficial name Murchie Mitchell had given me—Rum Beach—and to appreciate the significance of the place for the archaeological record of the Quoddy Region.



Figure 7: Historic liquor bottle necks and bases from Rum Beach (BgDq24: 107, 108, 111, 112)

¹⁴ “Toponymy” is the study of place names, based on the origin and meaning of words and historical and geographical information.

¹⁵ Some locations I refer to, e.g., “Fishermans Cove,” “Murphys Ledge” and “Bliss Harbour” have official place names; others, e.g., “Rum Beach” and “Spider Cove,” I refer to by unofficial names related to me by owners and residents of the Bliss Islands during the 1980s; still others, e.g., “northeastern Bliss Island” and “the thoroughfare,” are descriptive designations I apply to various places that lack place names.

At the height of Prohibition, the rum-running auxiliary schooner, *Cora Gertie*, was damaged in Bliss Harbour during a storm and sank at the mouth of Fishermans Cove on the Bliss Islands. Local residents quickly salvaged as much of the ship's illicit cargo as possible, aided by grapples and a diver. Then they hauled the schooner onto the nearby beach and wrecked the ship, removing the remnants of the cargo. This was the source of the broken bottles on Rum Beach (Figure 7).¹⁶

In 1992, Ralph and Arlene Welch, avocational archaeologists from Deer Island, showed me an artifact they had found on Rum Beach in the late 1980s (Figure 2). I was—frankly—dumbfounded and promised to look there myself during the summer of 1993 while supervising excavations at the Weir site. I took a group of students with me to Rum Beach on the evening of July 25, 1993. We were there less than five minutes before one of the students found the artifact shown in Figure 8, a flake/blade with near-continuous microflake modifications on both lateral margins. The next evening, on Rum Beach, I found the most surprising stone tool I have ever personally encountered—the drill shown in Figure 9 (Black 1994). We submitted a Maritime Archaeological Resources Inventory (MARI) report on the site to ASNB (Black and Blair 1993); it was assigned the designation “BgDq24”¹⁷ and was named “the Rum Beach site.”

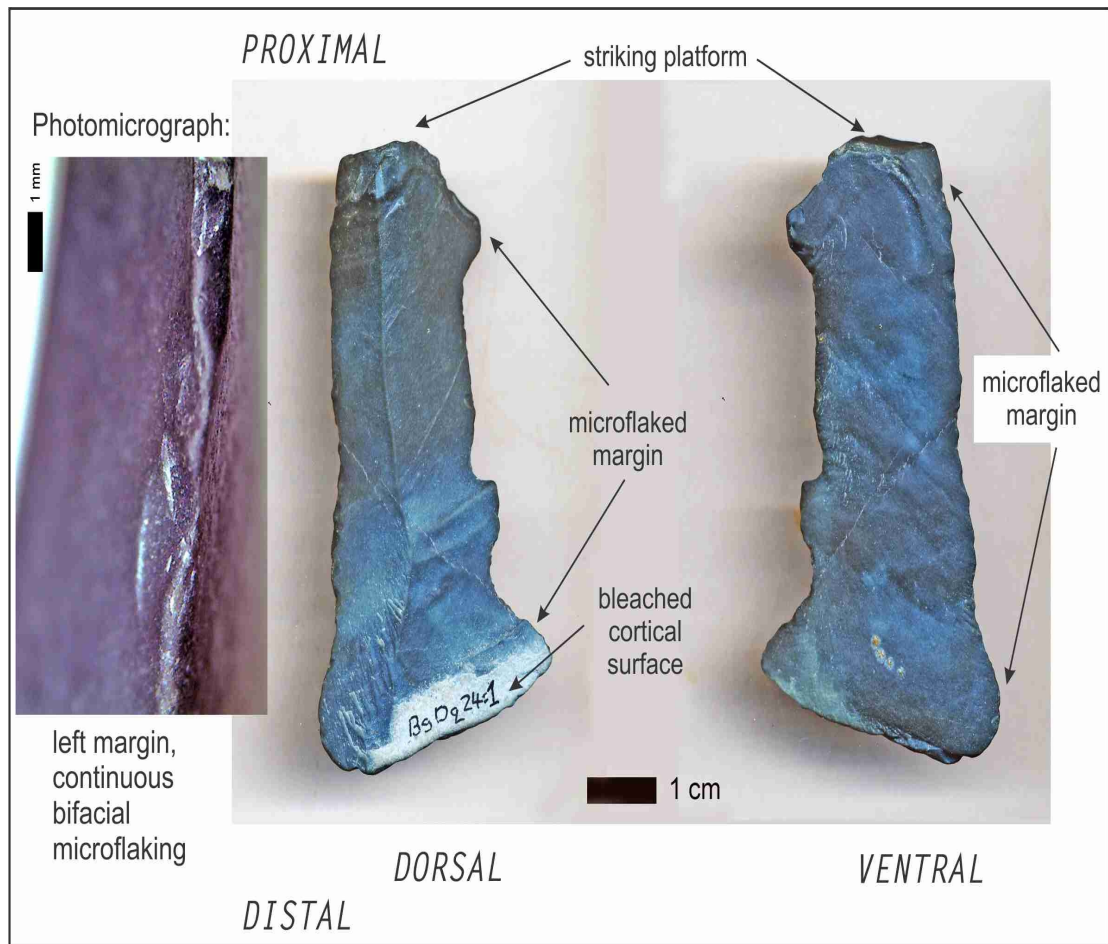


Figure 8: The first flake/blade found at Rum Beach, made of dark volcanic (BgDq24:1). Note the small patch of bleached cortex at the distal end of the dorsal surface and the microflaked lateral margins.

¹⁶ See Appendix A for more information about the schooner *Cora Gertie*.

¹⁷ In the “Borden system,” the Canadian national database of archaeological sites.

To the best of my knowledge no sites like Rum Beach were recorded during the coastal archaeological surveys of Charlotte County and places like Rum Beach were rarely examined during those surveys. Thus, such sites are almost certainly under-represented among the Quoddy Region archaeological site records (Blair and Black 1993; Black 2014). In saying this I intend no criticism of the archaeologists who conducted those surveys. I was one of them, and I had less excuse than most for ignoring intertidal locations because I had been involved in surface collecting and mapping intertidal sites on the coast of British Columbia before I came to work in NB. In the Quoddy Region, where semi-diurnal tides range from 5.0 m to 8.0 m, there are obvious practical reasons why my colleagues and I invested so little time in searching intertidal zones. The timing and logistical considerations alone largely restricted the surveys to eroding high water lines and near-shore locations. The surveys also were restricted to the warm seasons, and to calm weather days when the results of recent serious erosional events were least likely to be encountered.¹⁸

Once recognized, the Rum Beach site could not be excavated by conventional means because of water saturation and deep overlying sediments. Hence, I have adopted a strategy of periodic surface collecting to explore the site. To date the results indicate that either the overall density of artifacts at the site is low, or that artifacts are exposed on the beach very gradually.¹⁹

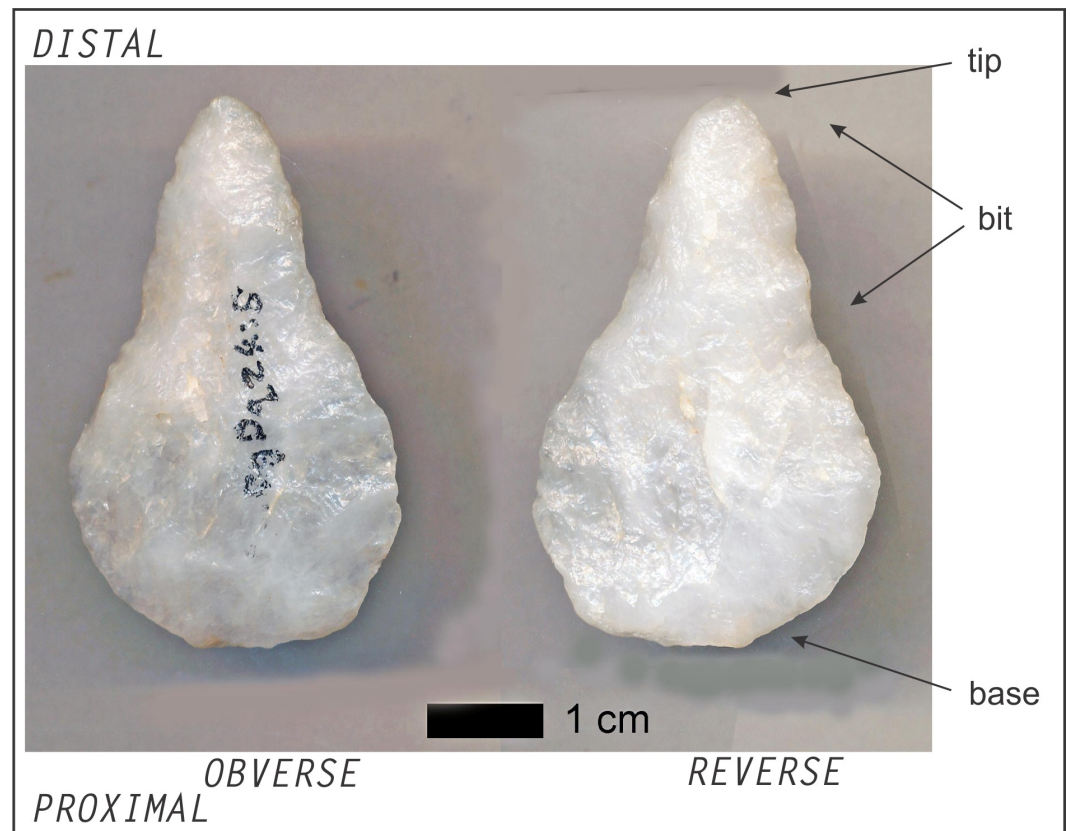


Figure 9: Flaked stone drill with lobate base made of bull quartz (BgDq24:5).

¹⁸ A point that I did not adequately appreciate until it was brought to my attention by Bob Bosien and other avocational archaeologists.

¹⁹ Chris Turnbull once suggested that we excavate part of the marsh at Rum Beach with the aim of finding a preserved boat from the Archaic period. Tree trunks are well preserved in the marsh, so why not a boat? Bruce Bourque (2012:112) made a similar suggestion for the marsh adjacent to the Turner Farm site on the central Maine coast. At the very least, archaeologists and others should be monitoring the edges of eroding marshes for emerging prows and keels. A prehistoric dugout canoe was recently recovered from an intertidal zone in southern Maine (Spahr et al. 2020).

The Rum Beach Site

Physiography. Rum Beach is located on the northwestern margin of a salt marsh that bisects the northeastern Bliss Island (Figures 1, 3, 6); it has a westerly exposure onto Bliss Harbour (Figure 3), the channel between Fries Island and the Bliss Islands leading into Blacks Harbour on the mainland. The marsh extends from Rum Beach to the intertidal thoroughfare that separates the northeastern Bliss Island from the central island. A saltwater pond forms in the west–central part of the marsh separated from Rum Beach by a substantial berm of unconsolidated coarse gravel (Figure 10). The pond is filled and drained by an intertidal creek that cuts through the northern side of Rum Beach (Figures 3, 11). During the warmer months the marsh and the berm are covered by verdant tangles of grasses, sedges and beach peas, and tufts of salt-tolerant vegetation that attract a wide range of animal life. When the tide is down and the sun is strong the marsh acts as an enormous compost, bubbling with fermentation; as the tide rises, water forces bio-gasses—methane, hydrogen sulphide and so on—from the marsh in stealthy olfactory assaults. In the cold seasons the marsh is bleak, brittle, brown and wind blasted. Large pieces of flotsam and jetsam, stranded across its surface, indicate that the entire landform is inundated and swept by waves during extreme tidal and weather events.



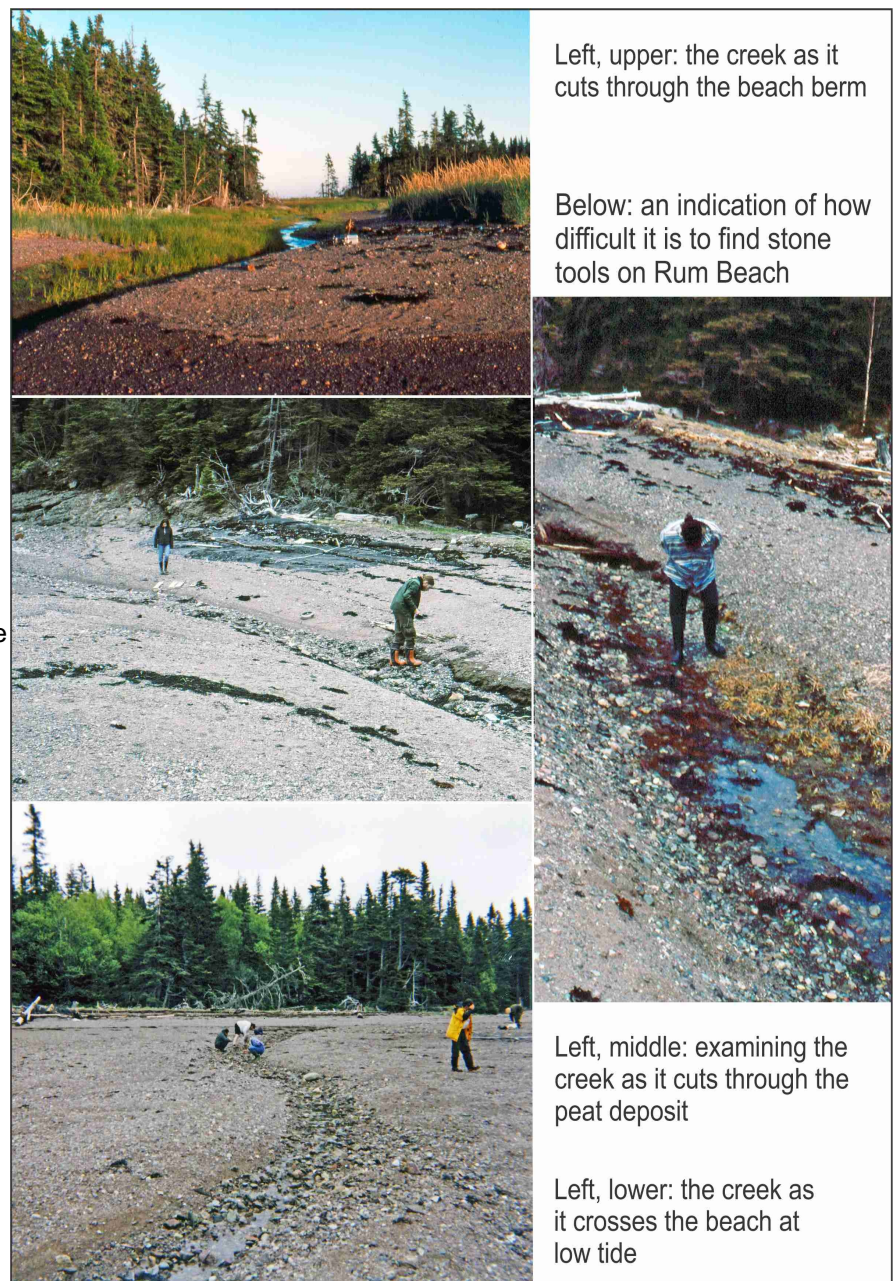
The marsh, looking NW from the thoroughfare toward Rum Beach

The surface of the berm at Rum Beach, looking SW from the creek

Figure 10: The salt marsh and the beach berm at Rum Beach.

Rum Beach is pinned between bedrock outcrops²⁰ that extend substantial distances seaward. These outcrops protect the beach from alongshore currents and allow a deep deposit of unconsolidated gravel to accumulate as a berm at the average high water line (Figure 10). The substrate includes a kaleidoscope of cobbles, pebbles and fine gravel of every imaginable colour and texture (Figure 11; inset in Figure 19). It is principally the rise and fall of the tides, and the outflow of water from the pond, that produce the erosional effects. I have noted changes in the configuration of the beach from visit to visit. In particular, sometimes the creek is deeply incised through the beach berm and underlying sediments. On some occasions the peat deposit beneath the berm and marsh is exposed in the creek and on the beach (Figures 11, 13). At other times the creek is nearly filled with loose gravel and the peat is completely buried. These changes presumably reflect variations in the tidal cycle, wind directions, storm events, rainfall intensity and the interactions among these variables.

Figure 11: Several views of the intertidal creek at Rum Beach.



²⁰ The bedrocks on the Bliss Islands consist of Devonian-aged Perry Formation conglomerates.

Site Structure and Interpretation. The salt marsh, consisting of a 1.0 m to 1.5 m deep deposit of peat (ca. 2.2 ha in extent), has formed in a depression between forest covered outcrops of conglomerate bedrock. Figure 12 shows an interpretive cross-section of the marsh, creek and beach along the A–B transect shown in Figure 3. The peat deposit extends from Rum Beach across the island into the intertidal zone at the northeastern end of the thoroughfare. At one time, this peat deposit presumably was continuous; now, however, it is eroding at both ends of the marsh. On both erosional faces tree trunks preserved in the peat project into the intertidal zones (e.g., Figure 13).

The modern marsh deposit is composed of several layers; it grades from a mainly organic peat at the surface to a mineral peat at depth. The substrate beneath the marsh is a dense sandy–muddy gravel that probably represents Late Pleistocene glacial or glacio-marine deposition. The substrate immediately below the peat is stained orange-red in colour, suggesting the B horizon of a podsollic soil that developed on the gravel deposit before the marsh formed. In the past, people apparently inhabited a land surface now situated between the gravel deposit and the peat deposit (Figure 12). The tree trunks and the composition of the marsh organics indicate that the peat formed initially as a subaerial deposit in a forest context (similar to the peat currently forming on the forest floor at some places on the islands).

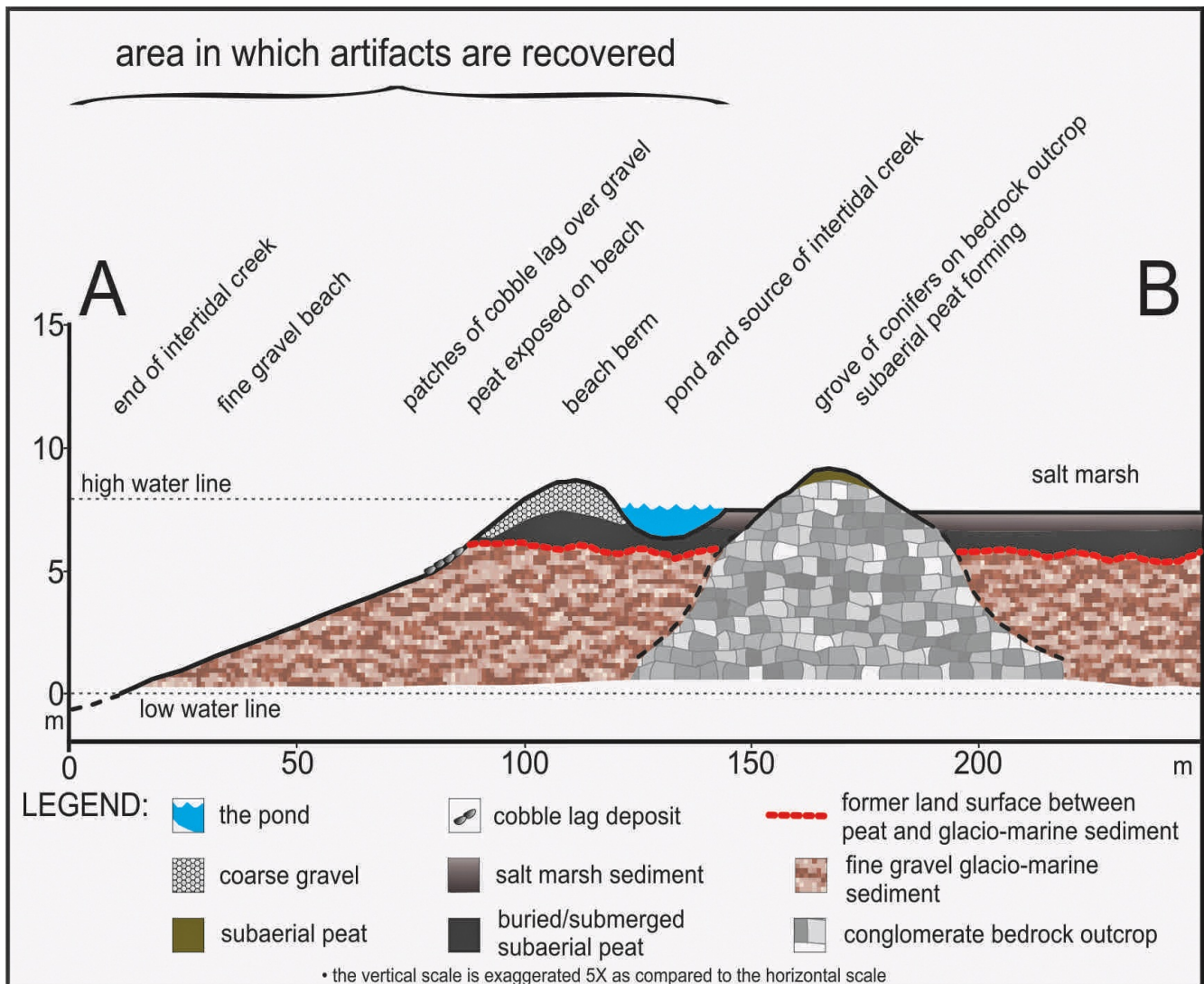


Figure 12: A partly conjectural cross-section of the Rum Beach site showing the inferred relationships among the former land surface (where the bulk of the prehistoric artifacts apparently were deposited), the marsh and the erosional/depositional surfaces upon which the artifacts are found. The cross-section follows the A–B transect shown on Figure 3.

In the past, the area where the marsh now exists probably was a mosaic of meadow and marsh surrounded by rock outcrops and forest, located a short distance from the high water line. At the eastern end this landform would have been sheltered from the open ocean by the forest then growing on what is now Murphys Ledge (Black 1985:72). As sea levels rose the meadows became freshwater marsh. Further sea level rise submerged the peat deposit converting the area to salt marsh (Black 2000a:93).

Rum Beach itself is composed of a lag deposit (ca. 1.6 ha in area at low tide) resulting from the erosion of the marsh, the gravel underlying the marsh and, to a lesser extent, the adjacent bedrock. Rising sea levels drive the gradual migration of the beach across the marsh destroying the peat and sedimentary deposits in the process. In addition, the back and forth flow of water driven by the macrotidal regime of the Bay of Fundy causes the creek to cut through the peat deposit. The Rum Beach site consists of a scatter of lithic artifacts (ca. 1.0 ha in extent) in and around the intertidal creek and, presumably, of artifacts buried beneath adjacent parts of the marsh, especially in the area currently covered by the beach berm.



Above: eroding edge of peat deposit, with embedded tree trunk and cobble lag

Right:
exposed
surface
of
eroding
peat
deposit
(50 cm
scale)



Figure 13: Peat eroding into the intertidal zone at Rum Beach.

Radiocarbon Dates. To learn something of when the peat deposit at Rum Beach formed, I decided to date organic material from the base of the marsh close to the Rum Beach site using the radiocarbon dating technique. To obtain a sample for dating, I had some students excavate a shovel-test near the creek, through a metre of marsh peat to the gravel below. Then I inserted myself head down into the shovel hole, holding a trowel, a zip-lock bag and—you may be sure—my breath. I dug out a chunk of peat from the contact area between the peat and the gravel, zipped it into the bag, and, mercifully, the students hauled me back out.²¹

The age of the sample is 2680 ± 80 BP; this is equivalent to a calendar age of about 750–1050 BC. I dated two other intertidal samples from the opposite end of the marsh (Figure 3); one is slightly older than the sample from near the creek, the other a bit more recent. The details of these radiocarbon dates are presented in Table 2.²² Only the most recent of the date ranges overlaps a small amount with the earliest of the radiocarbon dates from the Weir site (Black 2004c:49). Thus, I believe the marsh deposit began to form about 3000 years ago, at the beginning of the Maritime Woodland period, at first as a subaerial peat; then it was transformed to a freshwater marsh and more recently to a salt marsh.

Table 2: Radiocarbon dates from the Bliss Islands intertidal peat.

UNB Lab Code	BETA Analytic Code	Sample LOCATION *	Sample MATERIAL †	Age RCYBP ‡ □	Age Cal YBP ‡ □ §■	Age Cal BC/AD ‡ □ §	Prob-ability ¶
BIAP-IT-90	B-70011	intertidal test near BgDq6	Wood (at 90 cm depth)	2790 ± 90	2750–3082	BC 1133 – BC 801	0.95
BIAP-CF-90	B-78150	marsh test near BgDq24 creek	Peat (at 90 cm depth)	2680 ± 80	2697–2992	BC 1043 – BC 748	0.95
BIAP-IT-60	B-78151	intertidal test near BgDq6	Peat (at 60 cm depth)	2550 ± 60	2431–2769	BC 820 – BC 482	0.99

* See also Figure 3

† All three specimens are terrestrial in origin, with $\delta^{13}\text{C} = -25.0$ ‰ assumed

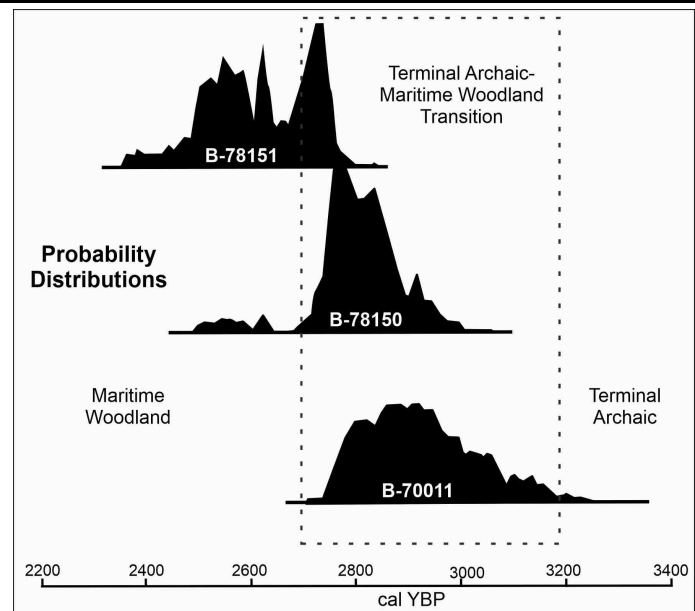
‡ RCYBP = Radiocarbon years before present
Cal YBP = Calibrated calendar years before present
Cal BC/AD = Calibrated calendar years BC

□ All are 2σ ranges

§ The radiocarbon dates were calibrated using the computer program CALIB 7.0.4 (© 1986–2017 M. Stuiver and P.J. Reimer); calibration refers to adjusting radiocarbon dates with respect to temporal fluctuations in the amount of ^{14}C in the atmosphere

¶ Statistical certainty = 1.0

■ Probability distributions within these age ranges are graphed at the right



²¹ My policy has been never to ask a student to do something I would not do myself.

²² Interpreting these dates is complicated by the fact that all of them fall on or near the Early Woodland radiocarbon calibration plateau (see, e.g., Guilderson et al. 2005), as do the earliest radiocarbon dates from the Weir site. This calibration plateau, sometimes called the “Hallstatt plateau” or the “1st millennium BC radiocarbon disaster” (e.g., https://en.wikipedia.org/wiki/Hallstatt_plateau), is a world-wide phenomenon.

Rum Beach Prehistoric Artifact Assemblage

In this section I describe and illustrate individual artifacts from the Rum Beach assemblage because, to the best of my knowledge, no comparable assemblage from the Quoddy Region or from elsewhere in the Maritime Provinces, has been described in detail in the archaeological literature. At present too little is known about such assemblages to warrant describing them in solely typological and statistical terms.

In Table 3, I present a simple typology for the Rum Beach assemblage and show piece counts for each type of artifact I examined for this monograph. Formal tools are those deliberately shaped, presumably for specific purposes, into types commonly identified in the archaeological literature of the Northeast culture area (e.g., Trigger 1978). Informal tools are those less extensively modified, but bearing evidence of systematic marginal modification, presumably as a result of being employed for particular tasks. Cores are pieces of lithic material from which flakes were removed during the production of stone tools; flake debitage consists of pieces knocked off during the production of stone tools.

Flakes are pieces of debitage on which some specific characteristics of stone flaking (striking platform, bulb of percussion, errailure scar, dorsal face, dorsal arris, ventral face, compression rings) are identifiable.²³ Here, I distinguish flakes as three types: 1) *Primary flakes* are relatively large and thick, with cortex on the striking platform and/or dorsal surfaces and the striking platform surface angled ca. 80° relative to the plane of the dorsal face. 2) *Secondary flakes* are medium sized, lack cortex, and are relatively thick for their length with faceted striking platforms angled ca. 50° relative to the plane of the dorsal face. 3) *Tertiary flakes* are relatively small, lack cortex, and are thin for their length with striking platforms acutely angled ca. 45° or less relative to the plane of the dorsal face. This classification is simplistic but roughly tracks the reduction sequence of flaked stone from cores (primary and secondary flake removals), through blanks and preforms (secondary flake removals), to finished tools (tertiary flake removals).

Table 3: Artifact types Identified in the Rum Beach assemblage.

TYPE	Subtype	Number of Items	Subtotals	Grand Total
FORMAL ARTIFACTS	Drills	2		
	<i>Flaked Stone</i> Projectile Points	7		
	Bifaces	13	22	
	<i>Ground Stone</i> Axe Blade	1		
	Grooved Cobble	1	2	
INFORMAL ARTIFACTS	Cortical Spalls	3		
	Flake/Blades	20	23	
DEBITAGE	Cores	21		
	Primary Flakes	13		
	Secondary Flakes	48		
	Tertiary Flakes	17		
	Incomplete Flakes	18	117	164

²³ See, e.g., Crabtree (1972) and Whittaker (1994) for introductions to flaked stone technology and terminology.

Formal Artifacts.

Flaked Stone Tools. Formal flaked stone tools from Rum Beach include drills, projectile points and bifaces.

Drills. Flaked stone drill bits probably were used to bore holes into bone, soft stone and organic materials, especially wood. Some may have been used, hand held, as twist drills; others may have been hafted to dowel-shaped shafts and spun between the hands or with bow drills. Drill bits are widely distributed in Archaic and Early Woodland assemblages in the Northeast (see, e.g., OSNE, WTPP),²⁴ but have not been found associated with land-based Maritime Woodland assemblages in the Quoddy Region.

- A drill (BgDq24:5) with a short (2.09 cm) bit and a lobate base made on a biface of semi-translucent bull quartz (Figure 9). L = 4.86 cm; W = 3.07 cm; T = 0.86 cm; M = 11.1 g.²⁵ This artifact is only slightly beach rolled.²⁶ It may have been used as a hand held perforator rather than hafted as a drill bit. Kraft (1990:69) illustrated a lobate based drill from a Terminal Archaic component in New Jersey. Similar drills have been recovered from the Portland Point site (Jeandron 1996) and the Grand Lake area (Kain 1905:154) in NB. Similar artifacts also have been reported from Maine (e.g., Rombola 1998:16).

- The base and midsection of an elongated drill bit (BgDq24:32) with a diamond-shaped cross-section and slightly flared base (Figure 14). This artifact is made from a dark brown/orange-brown flow-banded rhyolite and exhibits a silky surface sheen probably as a result of beach rolling. L = 5.38 cm; W = 1.66 cm; T = 0.57 cm; M = 6.6 g. Robinson (1985:24–25) recovered a similar drill from beneath the Scarborough marsh in coastal New Hampshire. Bourque (1995:113) recovered similar drills from Occupation 3 (Terminal

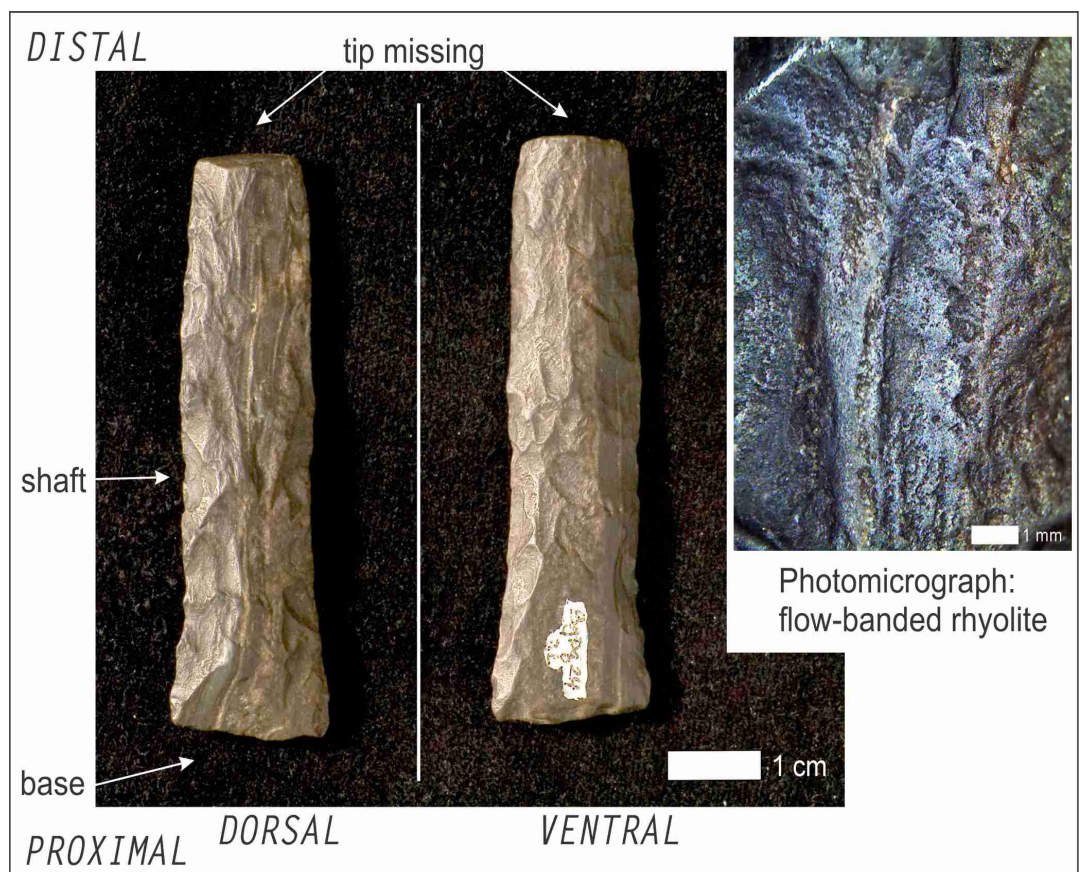


Figure 14: Diamond cross-section drill bit (photo: C.D. Gilbert), base and midsection, made of flow-banded rhyolite (BgDq24:38).

²⁴ These and similar acronyms in in-text references refer to online artifact databases listed below in a separate section of References Cited. Note that I have omitted from References Cited many of the earlier sources on which the online databases are largely based.

²⁵ Here and subsequently: L = length; W = width; T = thickness; M = mass. Linear measurements are in centimeters (cm); mass measurements are in grams (g); all measurements are maximums unless otherwise noted.

²⁶ “Beach rolling” refers to blunting of edges and muting of surface features of stone tools as a result of abrasion in and on intertidal sediments. For further information see the section on stone tool taphonomy below.

Archaic/Susquehanna Tradition) at the Turner Farm site in Maine and Deal (1986:75) from the Mud Lake Stream site in NB. Diamond cross-section drills occur in both early and late Susquehanna Tradition components in Maine and are associated with radiocarbon dates as recent as 3100 BP (Spiess 1997:15).

Projectile Points. Conventionally, archaeologists refer to bifacially flaked, pointed stone tools with systematically shaped hafting elements at their bases as projectile points. Frequently these tools are interpreted as tips for hafting to dowel-shaped spear, dart or arrow shafts, to arm projectiles; however, in some cases, these artifacts may have been hafted to short handles to serve as knife blades.

- A stemmed projectile point made of aphanitic volcanic (BgDq24:27).²⁷ Overall, the colour is a creamy white with a slight greenish tint. The pale colour results from bleaching;²⁸ the material probably is a felsic volcanic with a green groundmass.²⁹ There is some brownish surface staining, perhaps from organics. This artifact is moderately beach rolled; the sharp edges are somewhat rounded and the flake scars muted. It exhibits a pointed tip, a triangular blade with straight margins, a lenticular cross-section, maximum width at the shoulders and a short rectangular stem with a straight base. The dimensions are shown on Figure 15.^{30, 31} The stem–shoulder margins are asymmetrical side-to-side: the left margin is more obtuse and angular and the left shoulder more pointed; the right margin and shoulder are more rounded.³²

This projectile point bears many characteristics of the Broadpoint type, generally recognized as a Terminal Archaic horizon style throughout the Northeast (e.g., Boudreau 2016:84–87; Clermont and Chapdelaine 1982; Ellis et al. 1990; Hranicky 2011; Horvath 2012; Pagoulatos 2010). Such projectile points are designated by a series of named types, including Snook Kill (LNPP, NYSM, PPIG, WTPP) and Atlantic Phase (NEPP). This specimen most resembles the Atlantic implement blades defined by Dena Dincauze.³³ Its dimensions are within the ranges measured on Atlantic and Snook Kill lanceolate points (SNEP), and it displays the characteristic stem-shoulder asymmetry (DAIM, LNPP). Comparable projectile points have been widely reported from Maine/Maritimes sites (Blair 2004:224; Borstel 1982:23; Bourque 1995:109; Campbell

²⁷ Susan Blair spotted this projectile point almost under my boot one rainy afternoon on Rum Beach, karmic retribution for a projectile point I found right in front of her several years before (Black 2004b).

²⁸ “Bleaching” refers to loss of colour and structure in the groundmass of a lithic material as a result of exposure to sunlight and/or acidic soil and groundwater (cf. Black 2011:114). For more detail see the section on the taphonomy of flaked stone tools below.

²⁹ Most of the volcanic materials exhibiting aphanitic groundmasses (crystal structure not detectable by naked eye) probably are either light coloured felsic extrusive rocks, or dark coloured mafic intrusive rocks. For simplicity, in subsequent artifact descriptions I refer to these as “light volcanics” and “dark volcanics” respectively. For more information see the section on lithic materials below.

³⁰ Most artifacts from Rum Beach were recovered at a time when applying catalogue numbers directly to artifacts was standard practice, done to avoid their being disassociated from their contextual information. This practice has been discontinued in NB because Indigenous people often regard it as disrespectful. Digital photography and computer databases are now employed to maintain associations between artifacts and their contexts.

³¹ Here and subsequently: SW = shoulder width; NW = neck width; BW = base width; SL = stem length. Stem–shoulder angles are measured in degrees (°).

³² Here and subsequently, left and right lateral margins are designated based on viewing the obverse (or dorsal) face of the artifact.

³³ Dena Dincauze referred to some Terminal Archaic formal bifacial artifact types as “blades” (e.g., “Atlantic implement blade,” “Mansion Inn blade”). This terminology is non-standard in North American archaeology, and is potentially confusing given other uses of the term below (e.g., “flake/blade”). I follow recent publications and online databases by referring to named types as “projectile points” or “bifaces” depending on whether or not they exhibit formal hafting elements. I use “blade” to refer to the portion of a projectile point exhibiting cutting edges.

2016:149; Cox and Kopec 1988:41; Cox and Lawless 1994; Davis 1978:55; Deal 1986:75; Hamilton 1990:20; Jeandron 1996; MacKinnon 2003; Mitchell 1992:10; Shaffer and Spiess 2011:39; Spiess 2003:2–3; Spiess and Cranmer 2000:25–26, 2001:6; Spiess et al. 1988:10; Trautman and Spiess 1992), frequently attributed to the earlier phases of the Susquehanna Tradition. It deviates from the typical morphology in that it is somewhat narrower at the shoulders than most Broadpoints. Spiess (1989) suggested that later Terminal Archaic stemmed projectile points tend to be smaller and narrower than earlier variants.³⁴

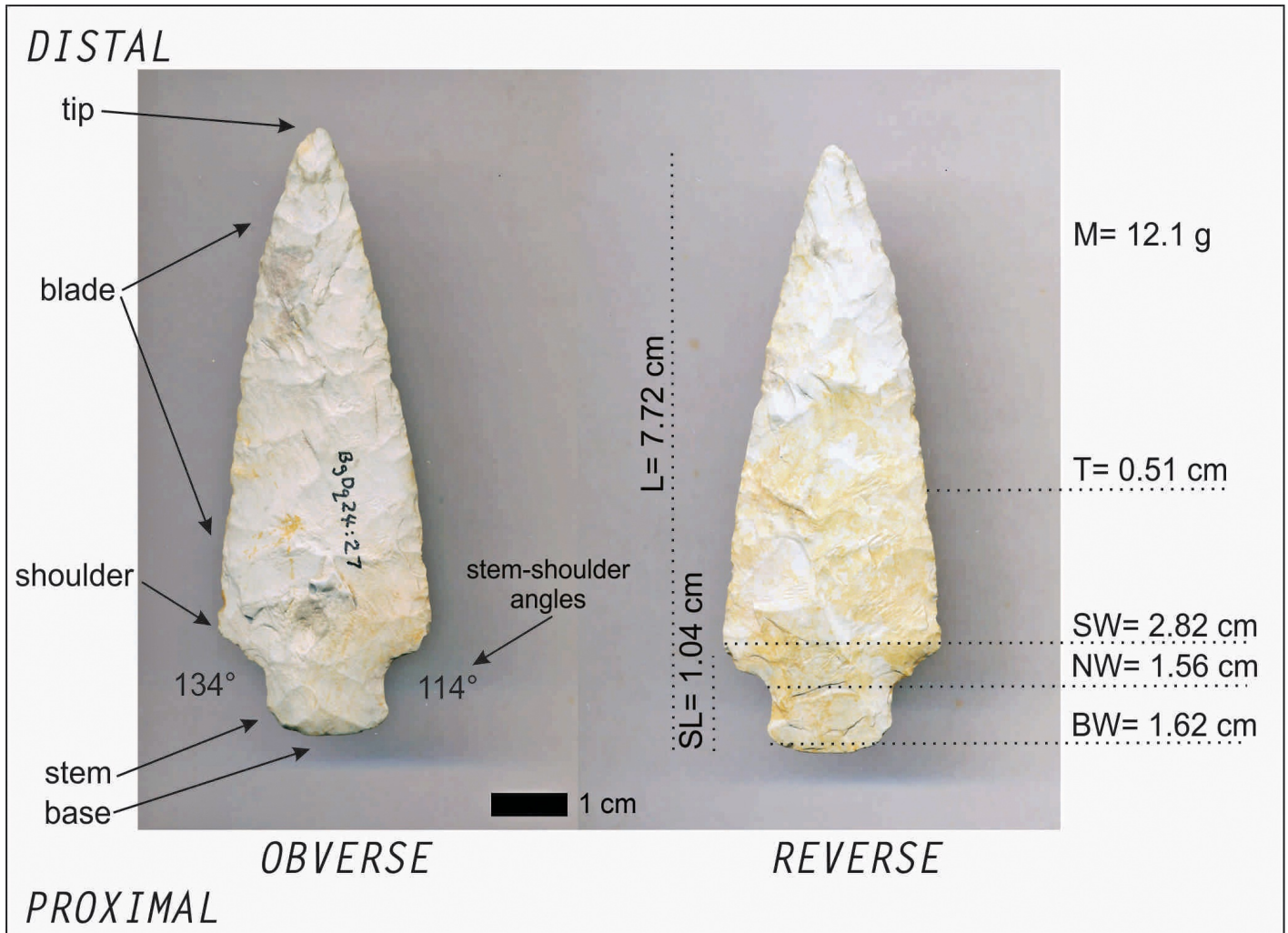


Figure 15: Projectile Point resembling Broadpoint types made of bleached volcanic (BgDq24:27).

³⁴ The archaeology of the final centuries of the Archaic period has been complicated by the proliferation of local and regional named projectile point types, with artifacts having similar shapes and characteristics frequently assigned different names. The variations among the types are usually inferred to represent cultural differences among the peoples who made them, while the temporal relationships (whether peri-contemporaneous or sequential) among the types frequently remain uncertain. While I understand the impulse to create and maintain local and regional cultural sequences, I believe that the proliferation of named types inhibits communication and synthesis of prehistory at larger geographic scales. Hranicky (2011) attempted to cut through this confusion by subsuming many types within a larger scale typological category, the “Susquehanna Group;” Justice (1987) made a similar attempt with his spatial distinction between the “Susquehanna Cluster” and the “Genesee Cluster.” Here, I lump the many types further by referring to all as “Broadpoints;” I refer to the cultural phenomena associated with them as the “Broad Point Archaic,” and I refer to the time period in which these phenomena occur as the “Terminal Archaic.”

• A stemmed projectile point made of Kineo-Traveler Mountain Porphyry³⁵ (BgDq24:77), with a pointed tip, slightly convex blade margins, diamond-shaped cross-section, flaring stem and straight base somewhat oblique to the long axis.³⁶ This artifact is slightly bleached and moderately beach rolled. The dimensions are shown on Figure 16. The stem–shoulder asymmetry appears to be intentional; however, the asymmetry of the stem may result from damage to the right proximal stem and base.

This projectile point resembles the Orient Fishtail type defined by William Ritchie and is within the range of measurements made on this type (SNEP). Orient Fishtail points (Boudreau 2016:107–109; Hranicky 2014:385; LNPP, NEPP), and similar types—e.g., Drybrook Fishtail (OSNE, PPIG) and Ashtabula (WTPP)—are associated with the Susquehanna Cluster (Hranicky 2011:3; PPIG). Fishtailed projectile points are widespread over the Northeast and bridge the Terminal Archaic and Early Woodland periods (DAIM, NYNE, NEPP). Comparable artifacts have been found at several Maine/Maritimes sites (Brigham et al. 2001:33; Campbell 2016:152; Jeandron 1996; Kopec 1985:8, 23; Mitchell 1992:10; Petersen 1995:220; Rombola 1998:15; Sanger 1986:146; Shaffer and Spiess 2011:39).

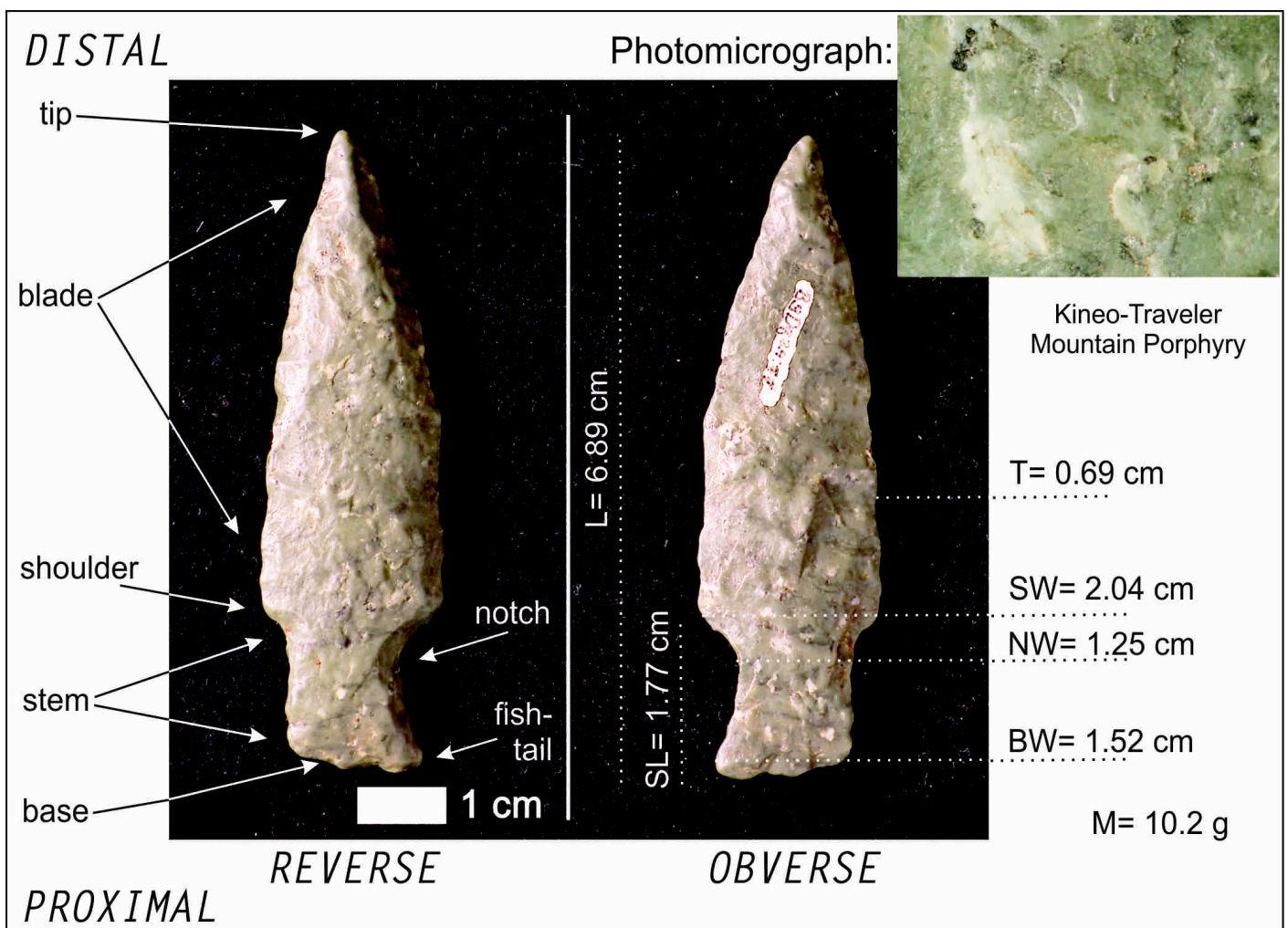


Figure 16: Projective point resembling Orient Fishtail type (photo: C.D. Gilbert), made of Kineo-Traveler Mountain Porphyry (BgDq24:77).

³⁵ For definitions of this and other lithic materials referred to in the artifact descriptions see the section on lithic materials below.

³⁶ Long axis = proximal–distal axis = the axis from the center of the proximal end to the center of the distal end.

• A stemmed projectile point made of Kineo-Traveler Mountain Porphyry (BgDq24:175) exhibiting a pointed tip, slightly convex blade margins, diamond-shaped cross-section, rounded shoulders, a symmetrical expanding stem and convex base. The dimensions are shown on Figure 17. It is only slightly bleached and beach rolled. The stem and base are more symmetrical than those of BgDq24:77 (Figure 16; see also Abbott 2020:14), and the artifact could be described as wide side-notched, but the pointed corners of the base give the artifact a distinctly fishtailed appearance. The base more resembles those of Meadowood points (SNEP, SOPP), but the wide notches are inconsistent with that type. This projectile point is similar to the Orient Fishtail type (LNPP, NEPP, NYNE) except that it is somewhat larger than most (SNEP); the convex base is unusual but not unknown (e.g., NYNE; Brigham et al. 2001:33; Sanger 2008:16).³⁷

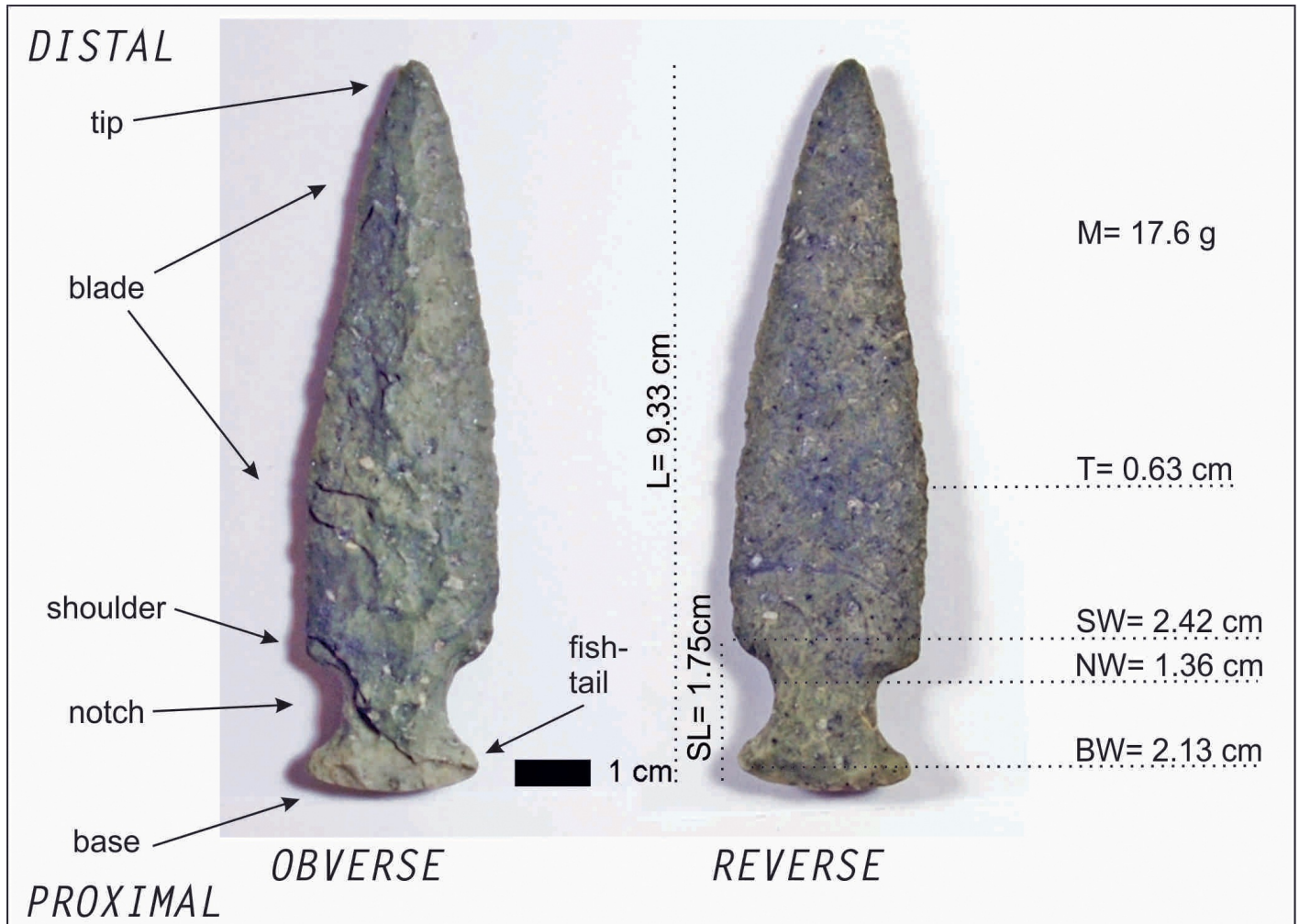


Figure 17: Projectile point resembling Orient Fishtail type, made of Kineo-Traveler Mountain Porphyry (BgDq24:175).

³⁷ The diversity of flaked stone artifacts recovered at Rum Beach is not surprising given the diversity of projectile point sizes and shapes observed in some Terminal Archaic assemblages (e.g., Bourque 1995; Campbell 2016; Rae and Jones 2017), and in artifact styles observed in definitely single component Susquehanna Tradition assemblages. Leveillee (1999:162), for example, reported an assemblage from a Massachusetts Terminal Archaic cremation feature that included artifacts ranging from a large unstemmed biface, through relatively large stemmed projectile points, to Mansion Inn-style pentagonal points, to large and small expanding stemmed points (some with bases approximating those of Orient Fishtails), to drill bits with at least three distinct types of base configurations. Single component Terminal Archaic sites usually are not habitation components (e.g., Davis 1982; Holmes 1994).

- A stemmed projectile point (BgDq24:163) made of dark volcanic (Figure 18) with a blunt tip, short triangular blade, rounded shoulders, expanding stem more flared on one side than the other and a straight base somewhat oblique to the long axis. Part of the striking platform of the blank from which this point was made may be retained at the base; alternatively, breakage on left lateral base and stem may account for the stem margin asymmetry. This artifact is slightly bleached and moderately beach rolled. L = 3.90 cm; W = 1.85 cm; T = 0.70 cm; M = 5.1 g. It resembles BgDq24:77 (Figure 16) and BgDq24:175 (Figure 17) except that the blade is substantially shorter (SNEP), suggesting that it was reduced through resharpening to a residual stub. It resembles Orient Fishtail forms in shape (LNPP, NEPP, PRIG) and some Early Maritime Woodland wide side-notched projectile points in size (e.g., Belcher 1989:39, 42; Black 2004c:76–77).

- A stemmed projectile point (BgDq24:33) made of strongly bleached, blue-green glassy rhyolite (Figure 19). It exhibits a rectangular stem with a convex base, rounded shoulders, a short triangular blade and pointed tip. L = 5.21 cm; W = 2.41 cm; T = 0.77 cm; M = 9.1 g; SL = 2.05 cm; NW = 1.43 cm; BW = 1.53 cm.

The stem is long relative to the blade, which appears to have been reduced through resharpening until only an asymmetrical residual stub remains. It resembles the Terminal Archaic Cyprus Stemmed type of the mid-Atlantic seaboard (NRCS), and the Innes type of Southern Ontario (Ellis et al. 1990:97). Similar projectile points have been reported from several Maine/Maritimes sites (e.g., Blair 2004:179; Spiess and Cranmer 2001:6; Mosher and Spiess 2002:7; Sanger 2008:17; Sanger and Davis 1991:75), and interpreted as Terminal Archaic–Early Maritime Woodland in age.



Figure 18: Projectile point resembling Orient Fishtail type, made of dark volcanic (BgDq24:163).

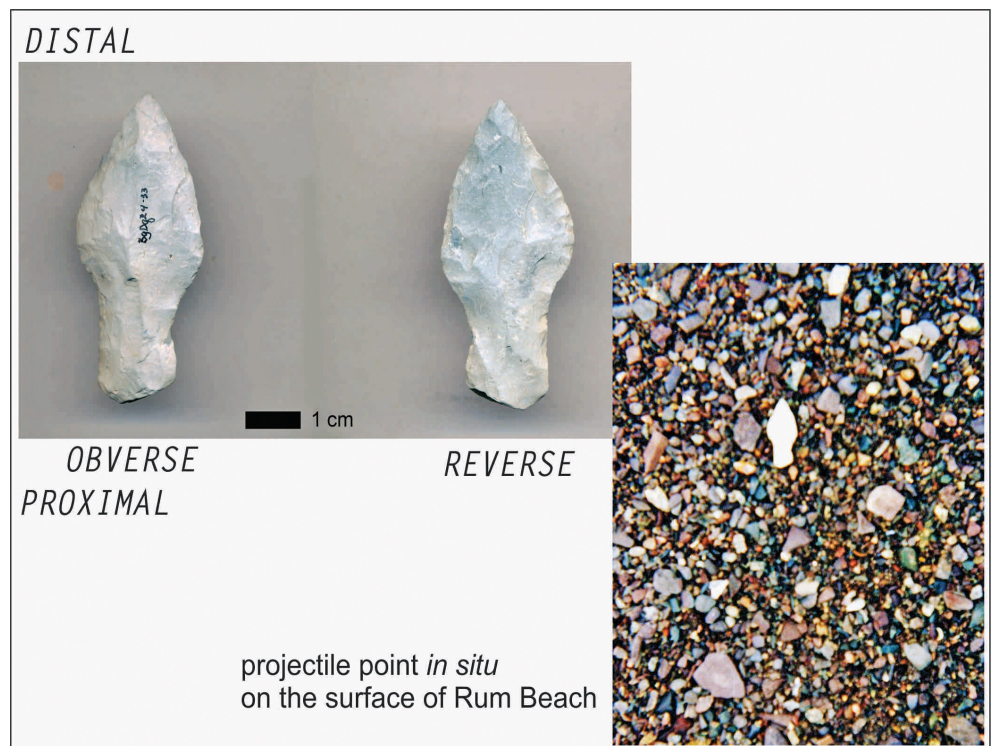


Figure 19: Stemmed projectile point made of bleached volcanic (BgDq24:33).

- A pentagonal projectile point (BgDq24:155) made of flow-banded rhyolite (Figure 20). It exhibits a blunt tip, a triangular blade with straight margins, asymmetrical shoulders (the left more pointed than the right), a contracting stem and a slightly convex base. L = 8.54 cm; W = 3.80 cm; T = 0.75 cm; M = 21.6 g. The blade margins are steeply retouched.³⁸ The overall length and the stem configuration are consistent with Snook Kill lanceolate points (SNEP). However, the base is most similar to the Massachusetts Terminal Archaic types defined by Dincauze, such as Mansion Inn (OSNE, PPIG; Taylor 2006:51) and Atlantic Phase (PPIG; Boudreau 2016:97–103; Rae and Jones 2017:9).

- An incomplete pentagonal projectile point (BgDq24:153) made of dark volcanic (Figure 21). This artifact is slightly bleached and beach rolled. It exhibits a triangular blade with straight margins, pointed shoulders, a contracting stem and a straight base somewhat oblique to the long axis. The blade is truncated at the midsection by a transverse fracture;³⁹ the tip is missing. L = 4.53 cm; W = 4.37 cm; T = 0.81 cm; M = 18.1 g. The blade margins are steeply retouched and the stem–shoulder margins are asymmetrical. The stem and shoulder configuration is consistent with Snook Kill points (SNEP). However, this artifact most resembles the Mansion Inn projectile points defined by Dincauze, and attributed by her to the Watertown phase of the Susquehanna Tradition (OSNE, PPIG). Bourque (1995:105) identified comparable artifacts in the Occupation 3 (Susquehanna Tradition) component of the Turner Farm site in Maine. Suttie et al. (2013) reported similar projectile points from the Pennfield area in interior Charlotte County, NB. Campbell (2016:144) and Sanger and Davis (1991:78) reported similar projectile points from sites in southern Nova Scotia (NS).

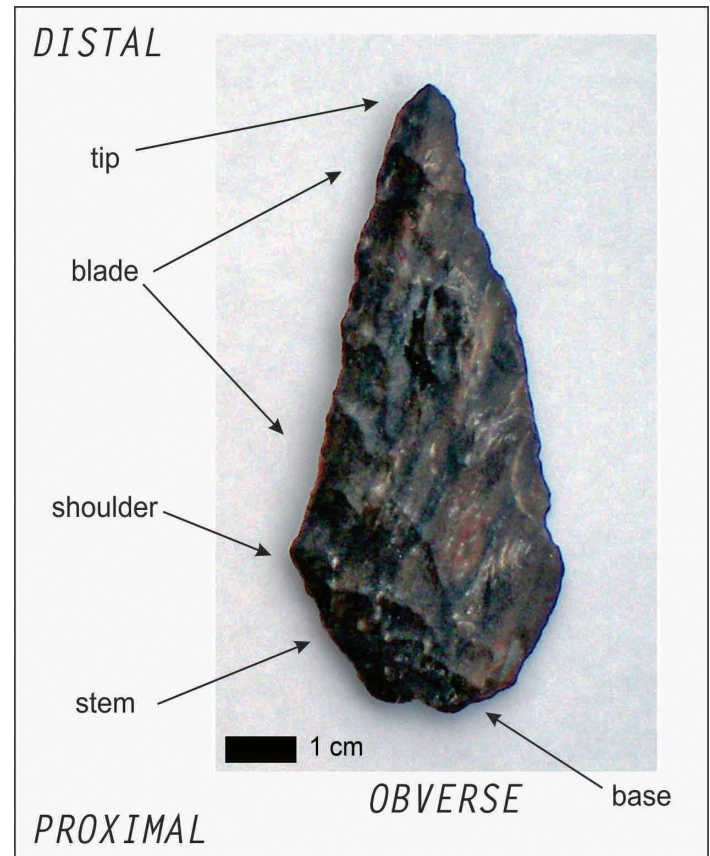


Figure 20: Pentagonal projectile point resembling Mansion Inn forms, made of flow-banded rhyolite (BgDq24:155).

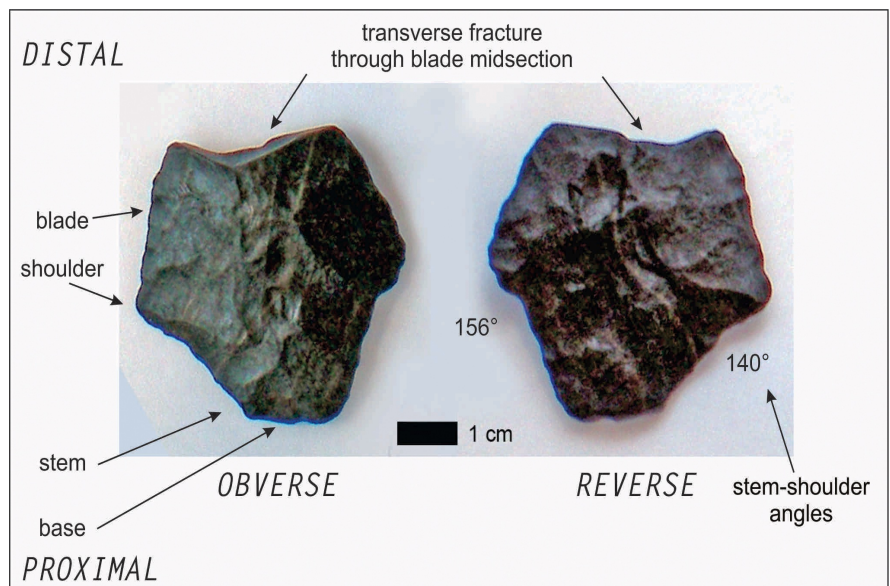


Figure 21: Incomplete pentagonal projectile point resembling Mansion Inn forms, made of dark volcanic (BgDq24:153).

³⁸ “Retouch” refers to intentional modification of flaked stone tool margins to thin, shape or straighten them for specific uses.

³⁹ A “transverse fracture” is a fracture approximately perpendicular to the long axis of the artifact.

Bifaces. Bifacially flaked artifacts lacking formal hafting elements are generally considered to represent intermediate stages of flaked stone reduction sequences; some may have been rejected because of problems in reduction, others may be preforms from which finished artifacts were intended to be made. Some bifaces also may have served as functional tools in their own right.

- A nearly symmetrical oval-pointed biface (BgDq24:28), probably a preform, made of Kineo-Traveler Mountain Porphyry (Figure 22). It exhibits a random flaking pattern, broad, shallow flake scars with some smaller marginal flake removals and a small step-fracture plateau⁴⁰ toward distal end of obverse face. L = 7.62 cm; W = 4.01 cm; T = 1.53 cm; M = 42.4 g. This artifact is slightly beach rolled; the edges may have been intentionally ground before deposition. It is moderately bleached to a pale green over most surfaces; however, there are several unbleached depressions in the surface where the original blue-green groundmass colour is visible. This biface resembles the “Boats blades” defined by Dincauze (see also Bello 2015; Boudreau 2016:102–103). Similar bifaces have been reported from several Terminal Archaic components in Maine (Bourque 1995:102–106; Holmes 1994:42–44; Trautman 1996:30) and NS (Campbell 2016:156).

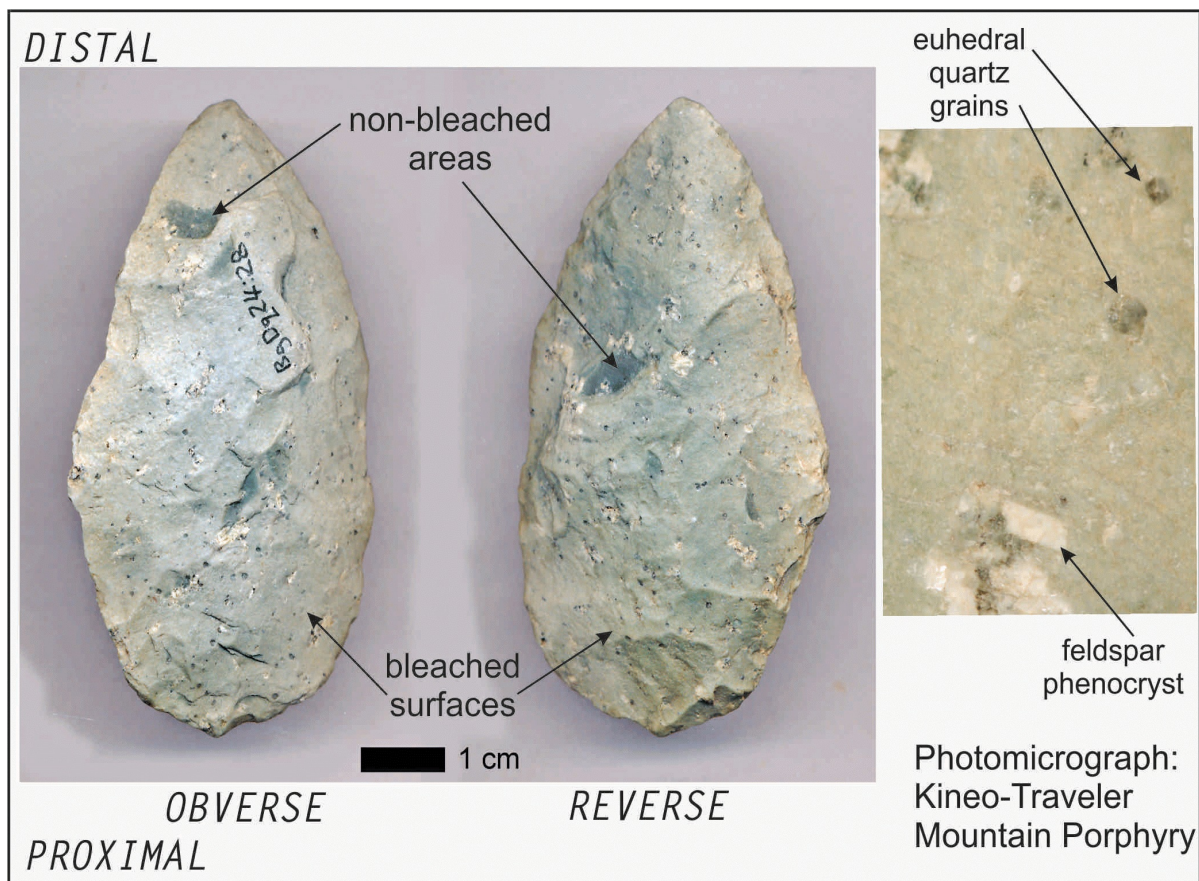


Figure 22: Oval-pointed biface made of Kineo-Traveler Mountain Porphyry (BgDq24:28).

- A large asymmetrical elongated biface (BgDq24:113) made of dark volcanic with occasional vugs filled with red powdery material (Figure 23). It exhibits pronounced central arrises on both faces; the flaking pattern is random. The base is narrow and straight; a small portion of the tip is missing. L = 9.31 cm; W = 3.15 cm; T = 1.35 cm; M = 42.4 g. The left margin is convex and steeply retouched, while the right margin is straight and exhibits battering and step-fracturing. The artifact is slightly beach rolled, and exhibits patchy bleaching on the high points of the obverse face.

⁴⁰ See, e.g., Whittaker (1994:109, 166).

- A small elongated biface (BgDq24:22) made of strongly bleached light volcanic (Figure 23). The surfaces exhibit brownish (organic?) stains similar to those on BgDq24:27 (Figure 15). The blade margins are convex, the base is straight and the tip is slightly blunted. The flaking pattern is random. L = 4.20 cm; W = 1.60 cm; T = 0.70 cm; M = 4.3 g. The surface is completely flaked; however, a step-fracture plateau on the obverse face suggests the biface was discarded unfinished because this flaw could not be removed. This artifact resembles small bifaces recovered from later assemblages on the Bliss Islands (e.g., Black 2004c:86, 91); however, Deal (1986:73) reported similar bifaces associated with the Terminal Archaic component at the Mud Lake Stream site on the central St. Croix River.

- An asymmetrical pointed biface (BgDq24:100) made of dark volcanic (Figure 23). The material exhibits occasional vesicles and is crosscut by fine veins filled with coarser crystals (perhaps indicating brecciation). This artifact is slightly beach rolled and is not bleached. The flaking pattern is random; the striking platform of the original flake blank may be retained on the base. The artifact may have been discarded unfinished because of a step-fracture plateau on the left medial portion of the reverse face.



Figure 23: Three bifaces from Rum Beach, made of light (middle) and dark (left and right) volcanics (BgDq24:113, 22, 100).

- An irregular biface portion (BgDq24:145) made of dark volcanic with faint flow-banding (Figure B1).⁴¹ M = 64.3 g. This artifact probably was discarded because of a step-fracture plateau on the obverse face. It is moderately bleached and beach rolled.

- An elongated oval biface (BgDq24:146) made of light grey quartzite (Figure B1). M = 70.6 g. It is moderately bleached and beach rolled.

⁴¹ Additional artifacts from the Rum Beach site are shown in Appendix B.

- An elongated bipointed biface (BgDq24:147) made of green glassy volcanic (Figures 24, B1; Abbott 2020:15). L = 10.24 cm; W = 2.73 cm; T = 0.84 cm; M = 25.3 g. It is moderately bleached and beach rolled. Bipointed bifaces are associated with both Terminal Archaic (Boudreau 2016:103) and Early Maritime Woodland (e.g., Pelletier-Michaud 2018) assemblages in the Northeast. A strikingly similar biface has been reported from a Terminal Archaic component on the Androscoggin River in Maine (Campbell 2016:35, 83).

- The upper midsection and tip of a large biface (BgDq24:148) made of green glassy volcanic (Figure B1). It exhibits convex blade margins, a blunt tip and a transverse fracture through midsection. L = 7.57 cm; W = 3.53 cm; T = 1.09 cm; M = 28.0 g. This artifact is moderately bleached and beach rolled.

- A somewhat irregular oval-pointed biface (BgDq24:149) made of light volcanic (Figure B1). L = 7.82 cm; W = 3.33 cm; T = 1.40 cm; M = 32.9 g. It exhibits a convex base, relatively straight lateral margins and a pointed tip. It is moderately bleached and beach rolled.

- A somewhat irregular oval biface (BgDq24:150) made of light flow-banded volcanic (Figure B1). It exhibits convex lateral margins and a rounded tip. L = 7.54 cm; W = 4.41 cm; T = 1.17 cm; M = 47.3 g. This artifact is moderately beach rolled, and much more strongly bleached on the obverse face than on the reverse.

- A small thick biface (BgDq24:162), with an irregular oval shape, made of White-Spotted Translucent Chert (Figure B2). M = 6.0 g. It is moderately beach rolled.

- A biface base (BgDq24:152) truncated by a transverse fracture, made of dark volcanic (Figure B2). M = 14.1 g. It exhibits a straight base and expanding margins. This artifact is slightly bleached and moderately beach rolled.

- A triangular biface tip (BgDq24:156) made of dark volcanic (Figure B2). M = 7.7 g. It exhibits straight blade margins and a transverse fracture through the midsection. This artifact is slightly bleached and moderately beach rolled.⁴²

Ground Stone Tools. Ground stone tools from Rum Beach include an axe blade and a modified cobble.

Flaked and Ground Axe Blade. This axe blade (BgDq24:143), made from a grey aphanitic volcanic (Figure 25), exhibits a nearly rectangular shape and somewhat irregular cross-section. It was shaped by flaking; only the bit end, the cutting edge and portions of the faces were ground thoroughly smooth. L = 11.29 cm; W = 4.97 cm; T = 3.10 cm; M = 222.8 g. The cutting edge is slightly convex in plan and the bit end convex-convex in cross-section. It is moderately beach rolled and is bleached on all surfaces. Small flake scars on the cutting edge may represent use-wear⁴³ or may be damage resulting from beach rolling. Flaked and ground axe blades often are associated with Early Maritime Woodland assemblages in the NB



Figure 24: Elongated bipointed biface made of light volcanic (BgDq24:147).

⁴² An avocational collection that was not re-examined for this study includes a large biface from the Bliss Islands that almost certainly was found on Rum Beach. This biface—made of light volcanic, strongly bleached on one face—exhibits a straight base, convex blade margins and a blunt tip. L = 12.06 cm; W = 5.83 cm; T = 1.00 cm; M = 87.0 g.

⁴³ “Use-wear” refers to incidental modifications to the margins of stone tools resulting from their use as tools.

archaeological record (S. Blair 2018:pers. comm.; Sanger 1987:106, 2008:21–22; Turnbull 1976); however, such artifacts also are associated with Terminal Archaic assemblages (e.g., Campbell 2016:162; MacKinnon 2003; Rutherford 1991:330; Sanger 2012:261; Suttie et al. 2013; Tuck 1984:35). This artifact probably was hafted in a socketed handle and used to work wood.

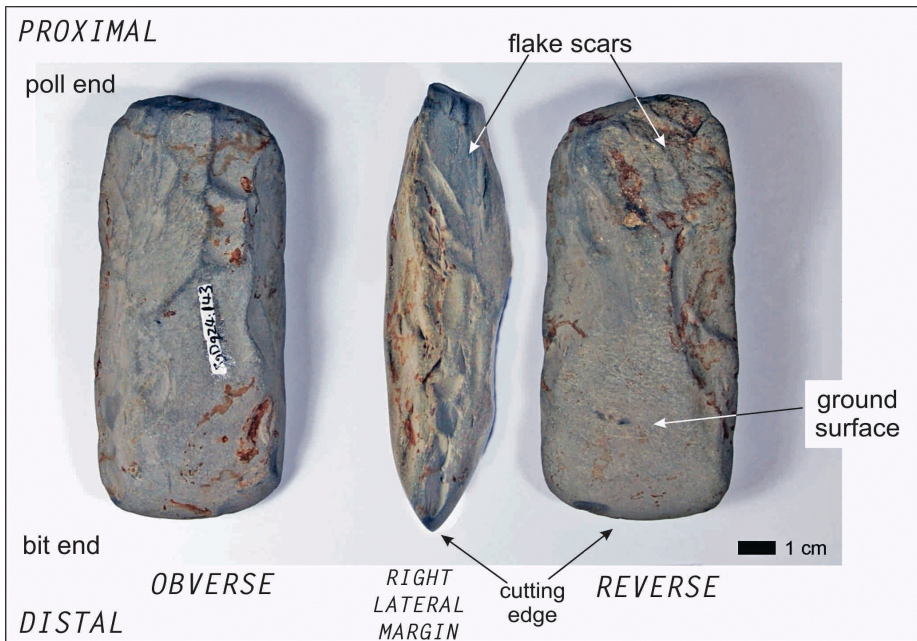


Figure 25: Flaked and ground axe blade made of bleached volcanic. Note the contrasts between the ground and unground surfaces (BgDq24:143).

Equatorially Grooved Cobble. An equatorially grooved cobble (BgDq24:161) made of medium-grained mafic volcanic material (Figure 26). The stone is olive green speckled with black, probably a gabbro. The cobble on which the artifact was made is a nearly symmetrical flattened oval in shape. L = 11.69 cm; W = 9.33 cm; T = 5.07 cm; M = ca. 500.0 g. It is slightly beach rolled. This artifact was made by pecking a groove around the entire circumference of the cobble using a hammerstone with a curved working surface (probably another cobble of more resistant stone). The groove varies from 1.95 cm to 2.50 cm in width. The groove presumably facilitated attaching a line and the artifact probably functioned as a fishing-net or -line weigh. Grooved cobbles are associated with Middle Archaic assemblages in the Maine/Maritimes area (e.g., Suttie 2005:208–210).

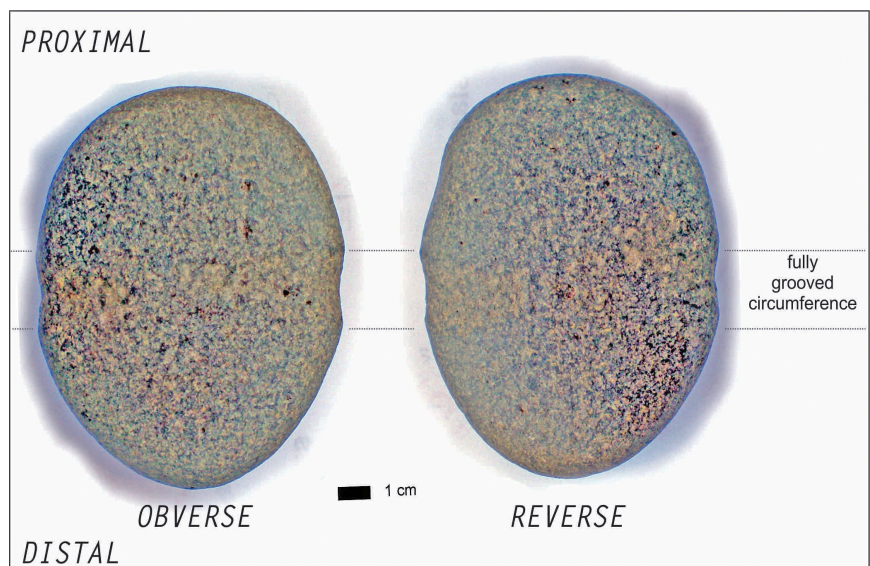
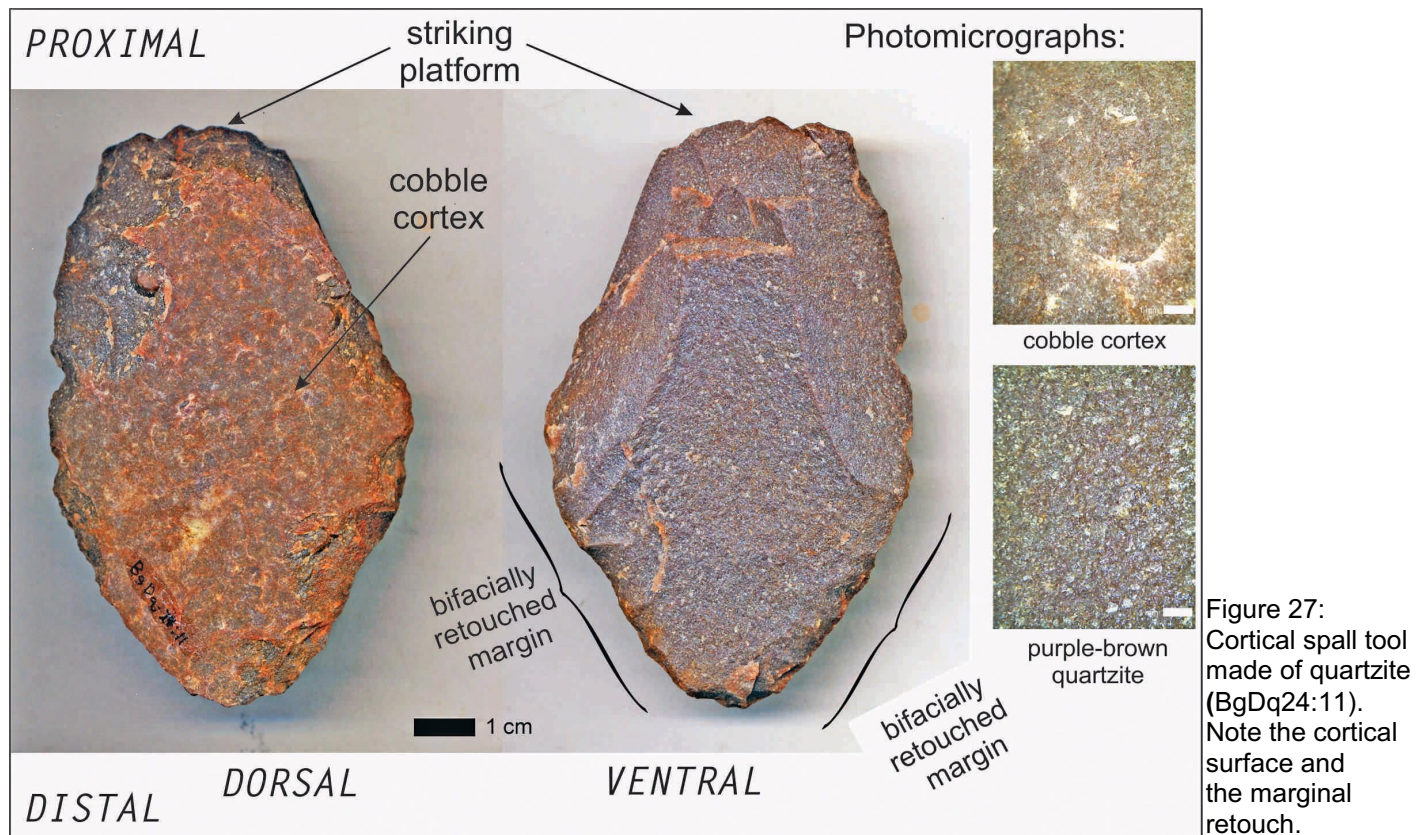


Figure 26: Equatorially grooved cobble made of granular volcanic (BgDq24:161).

Informal Artifacts.

Flaked Stone Tools. Informal flaked stone artifacts from Rum Beach include cortical spalls and flake/blades. These artifacts form part of a continuum grading into utilized flakes and unmodified debitage. They are unlike flaked stone artifacts found in land-based Maritime Woodland assemblages in the Quoddy Region.

Cortical Spall Tools. A cortical spall is a relatively large primary flake, struck from a cobble core,⁴⁴ that exhibits a dorsal surface covered 70% or more by cobble cortex.⁴⁵ If the margins are retouched and/or use-worn, it is referred to as a cortical spall tool. In my experience, cortical spall tools are rare in the Maritimes archaeological record. In the Quoddy Region, they only appear associated with Terminal Archaic–Early Maritime Woodland tools. They may be associated with earlier Archaic assemblages, but have not been reported from land-based Maritime Woodland assemblages. Of the three cortical spalls recovered from Rum Beach, only one was definitely modified for use.



- A large cortical spall tool (BgDq24:11) struck from a cobble of medium-grained purple-brown quartzite (Figure 27). L = 9.90 cm; W = 6.10 cm; T = 1.80 cm; M = 109.5 g. The proximal end exhibits extensive platform preparation. It is only slightly beach rolled. The lateral and distal margins of this spall were bifacially retouched to form working edges and a rounded tip.

- A cortical spall (BgDq24:60) struck from a cobble of Apple-Green Glassy Rhyolite (Figure 28). L = 6.09 cm; W = 5.75 cm; T = 1.21 cm; M = 43.6 g. The cortical surface is slightly bleached. The ventral

⁴⁴ They are sometimes referred to as a “cortex spalls” or “cobble spalls.”

⁴⁵ Cobble cortex develops as a result of impacts to the cobble surface as it forms during erosion and transport; in a high-silica, fine-grained material the cortex takes the form of numerous overlapping Hertzian cone fractures (see, e.g., inset in Figure 27, and Figures D2, E2; also Crabtree 1972:53) that are partly obscured by subsequent fine sediment abrasion. Depending on the lithic materials involved, cobble surfaces may be variably bleached and/or stained.

surface exhibits salient compression rings. This artifact exhibits negligible beach rolling; the margins are fresh and sharp, and appear to be unmodified.

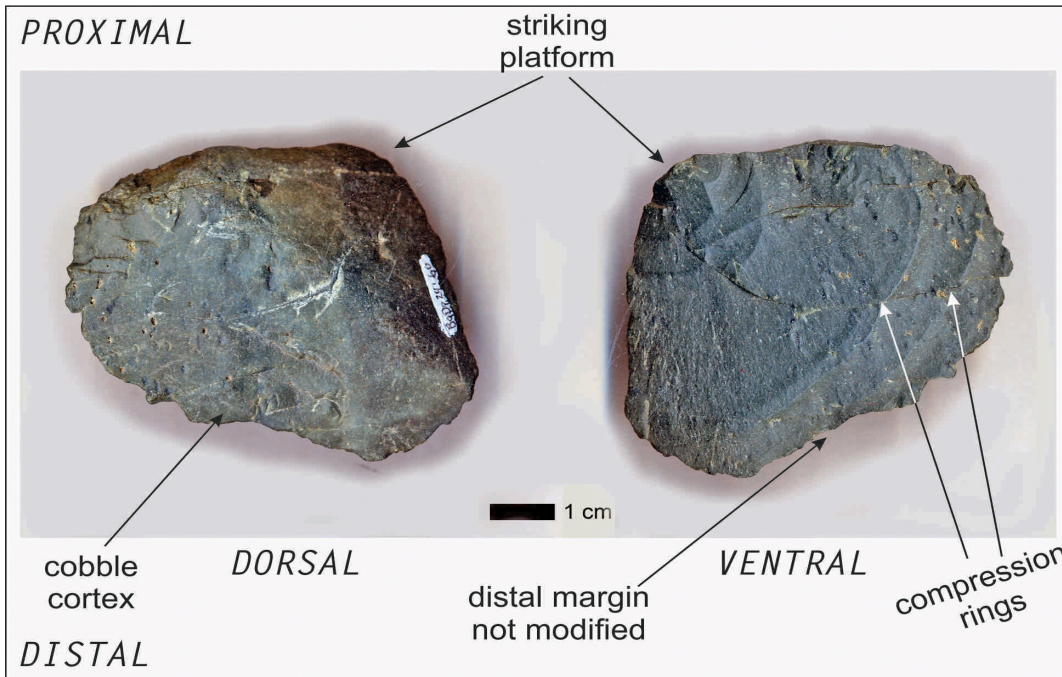


Figure 28: Cortical spall made of Apple-Green Glassy Rhyolite (BgDq24:60).

- A large cortical spall (BgDq24:134) struck from a cobble of semi-translucent light grey quartzite (Figure 29). L = 7.36 cm; W = 6.60 cm; T = 2.18 cm; M = 93.0 g. The artifact is moderately beach rolled and the cortex is slightly bleached. This spall has not been deliberately retouched; however, the distal margin may be use-worn.

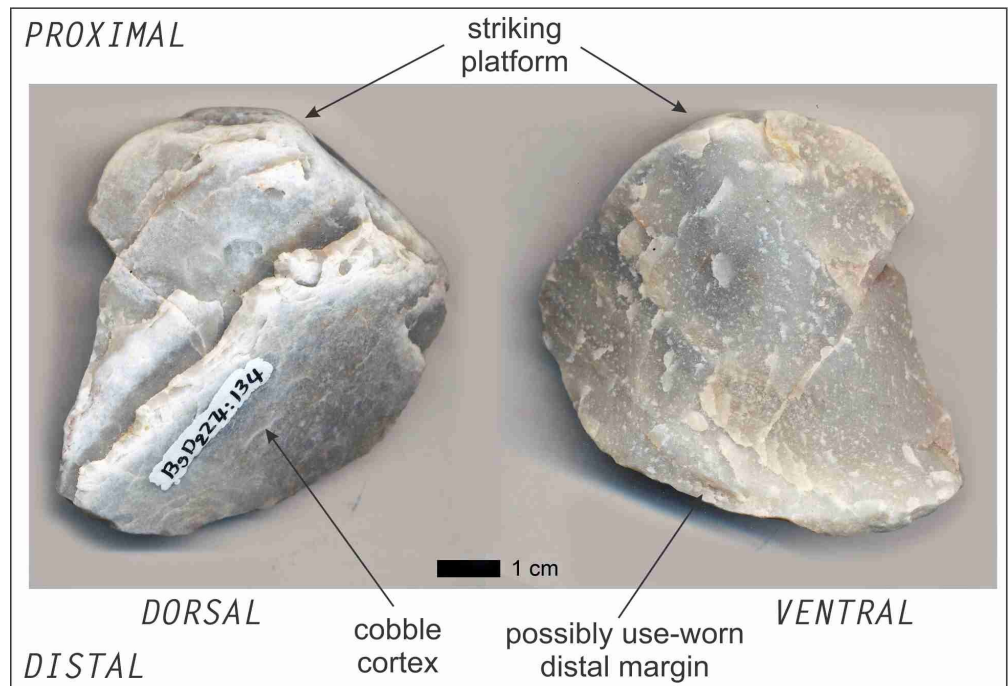


Figure 29: Cortical spall made of grey quartzite (BgDq24:134).

Flake/Blades. I have classified 20 artifacts from the Rum Beach assemblage as flake/blades, in part because similar artifacts have not been reported from land-based Maritime Woodland assemblages in the Quoddy

Region. In standard archaeological terminology a flake that is more than twice as long as it is wide, and that was struck from a core specifically designed to produce elongated flakes, is referred to as a blade. The flake/blades from Rum Beach fit the first criterion of this definition but not the second—it is not clear that they were removed from purposely designed blade cores.⁴⁶ However, several of the Rum Beach flake/blades strongly resemble deliberately manufactured blades in that they exhibit dorsal arrises that parallel their long axes, resulting in prismatic cross-section shapes. Many of the flake/blades exhibit some indication of marginal modification, and in some cases, extensive marginal modification. In this respect, they grade into the flake debitage in the Rum Beach assemblage, since several flakes also exhibit marginal modifications.⁴⁷ Only a selection of the flake/blades are described in detail here.

- A roughly rectangular flake/blade (BgDq24:1) made of dark volcanic (Figure 8), with a patch of bleached cortex at the distal end of the dorsal face. L = 7.37 cm; W = 3.47 cm; T = 1.02 cm; M = 15.0 g. This artifact exhibits an unfaceted striking platform, a central arris parallel to the long axis and a prismatic cross-section.

- An irregularly shaped flake/blade (BgDq24:59) made of Apple-Green Glassy Rhyolite (Figure 30). L = 8.63 cm; W = 3.78 cm; T = 0.71 cm; M = 22.8 g. This artifact exhibits an unfaceted striking platform, a dorsal arris oblique to the long axis and a prismatic cross-section.

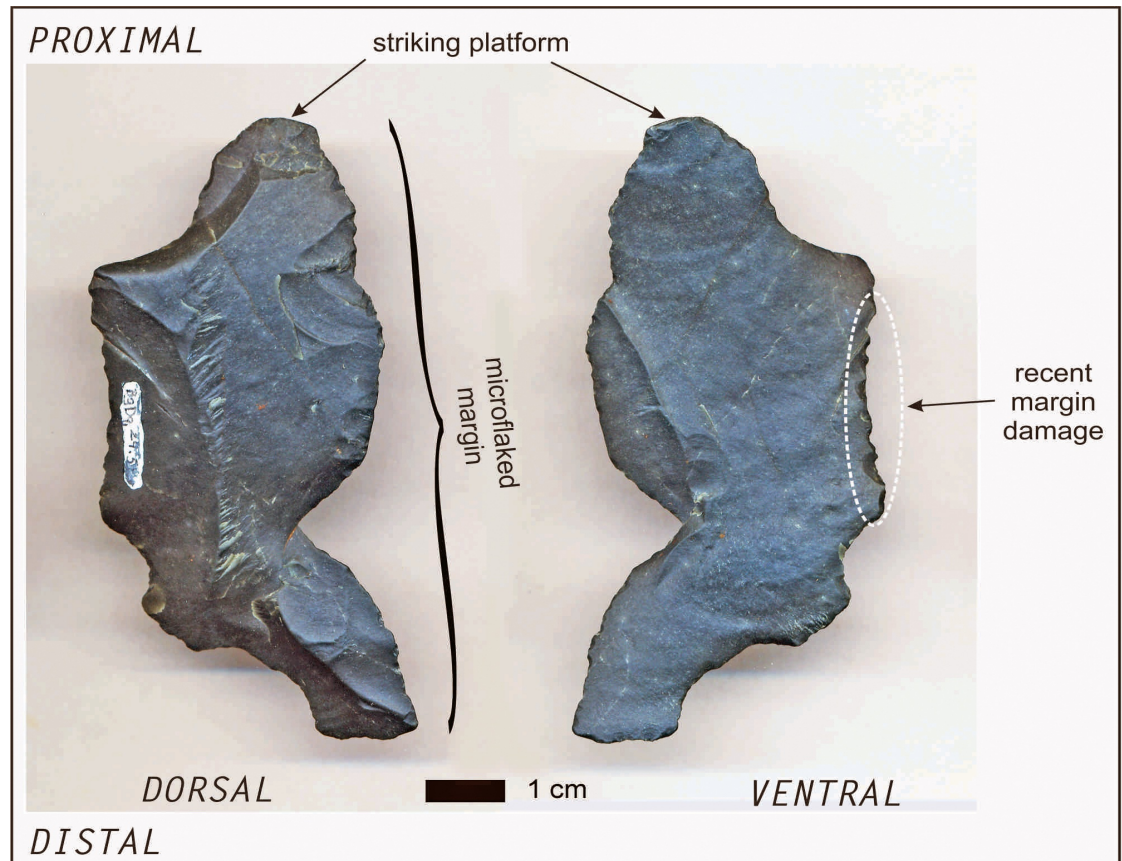


Figure 30: Flake/blade made of Apple-Green Glassy Rhyolite (BgDq24:59). Note the microflaking on the lateral margins.

⁴⁶ See the section on cores below.

⁴⁷ See the sections on flake debitage and modifications to flaked tool margins below.

The two artifacts shown in Figure 31 highlight the difficulty in defining the flake/blades from Rum Beach. Like those shown in Figures 8 and 30, the upper artifact (BgDq24:119), with its unfaceted striking platform, dorsal arris parallel to the long axis and prismatic cross-section, resembles a deliberately manufactured blade; the lower artifact (BgDq24:136), with its faceted striking platform, random flake scars on the dorsal face and longitudinal curve would, in the absence of the marginal microflaking, be classified as a secondary flake struck from a large biface or bifacial core.

- A flake/blade (BgDq24:119) made of dark volcanic (Figure 31 upper). L = 6.51 cm; W = 3.40 cm; T = 1.41 cm; M = 24.8 g. The distal end is truncated by an irregular transverse fracture, probably produced by a flaw in the material. It exhibits a straight dorsal arris parallel to the long axis and a prismatic cross-section.

- A flake/blade (BgDq24:136) made of light volcanic (Figure 31 lower). L = 5.74 cm; W = 3.01 cm; T = 0.73 cm; M = 12.1 g. This artifact is strongly beach rolled; both faces are moderately bleached, the ventral face more so than the dorsal. Flake scars on the dorsal surface have produced a sinuous arris that is partially perpendicular to the long axis. The cross-section is prismatic.

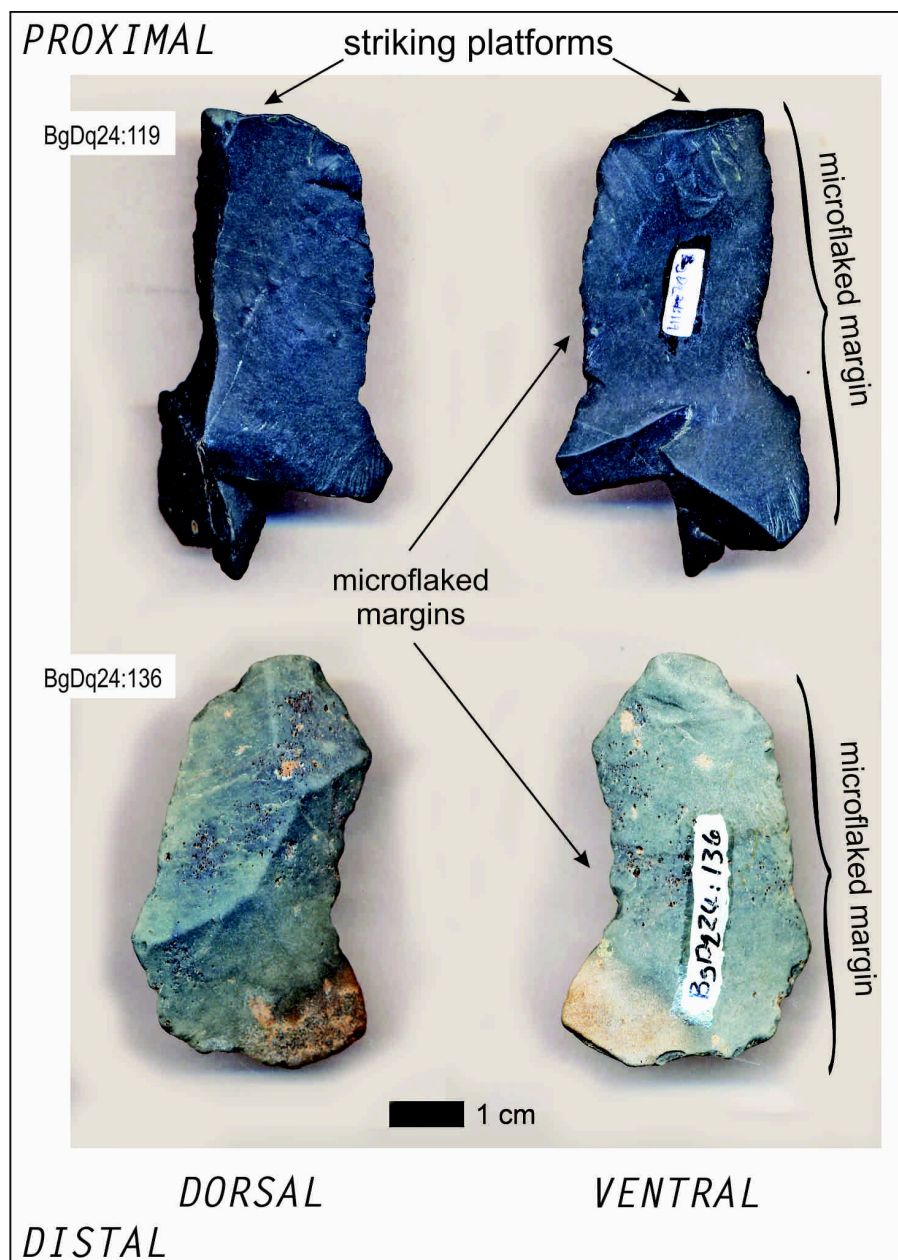


Figure 31: Two flake/blades made of contrasting dark (above) and light (below) volcanics (BgDq24:119, 136). Note the microflaked margins.

The artifact shown in Figure 32 is the largest piece of flaked stone recovered from Rum Beach.

- The distal portion of a very large flake/blade (BgDq24:94) made of dark volcanic (Figure 32). L = 9.91 cm; W = 7.27 cm; T = 2.26 cm; M = 159.8 g. This artifact is rectangular in shape, truncated at the proximal end by a transverse hinge fracture, probably at the time of manufacture. It is slightly beach rolled and the dorsal face is slightly bleached. It exhibits a dorsal arsis parallel to the long axis and a prismatic cross-section. The left, right and distal margins exhibit near-continuous microflaking.

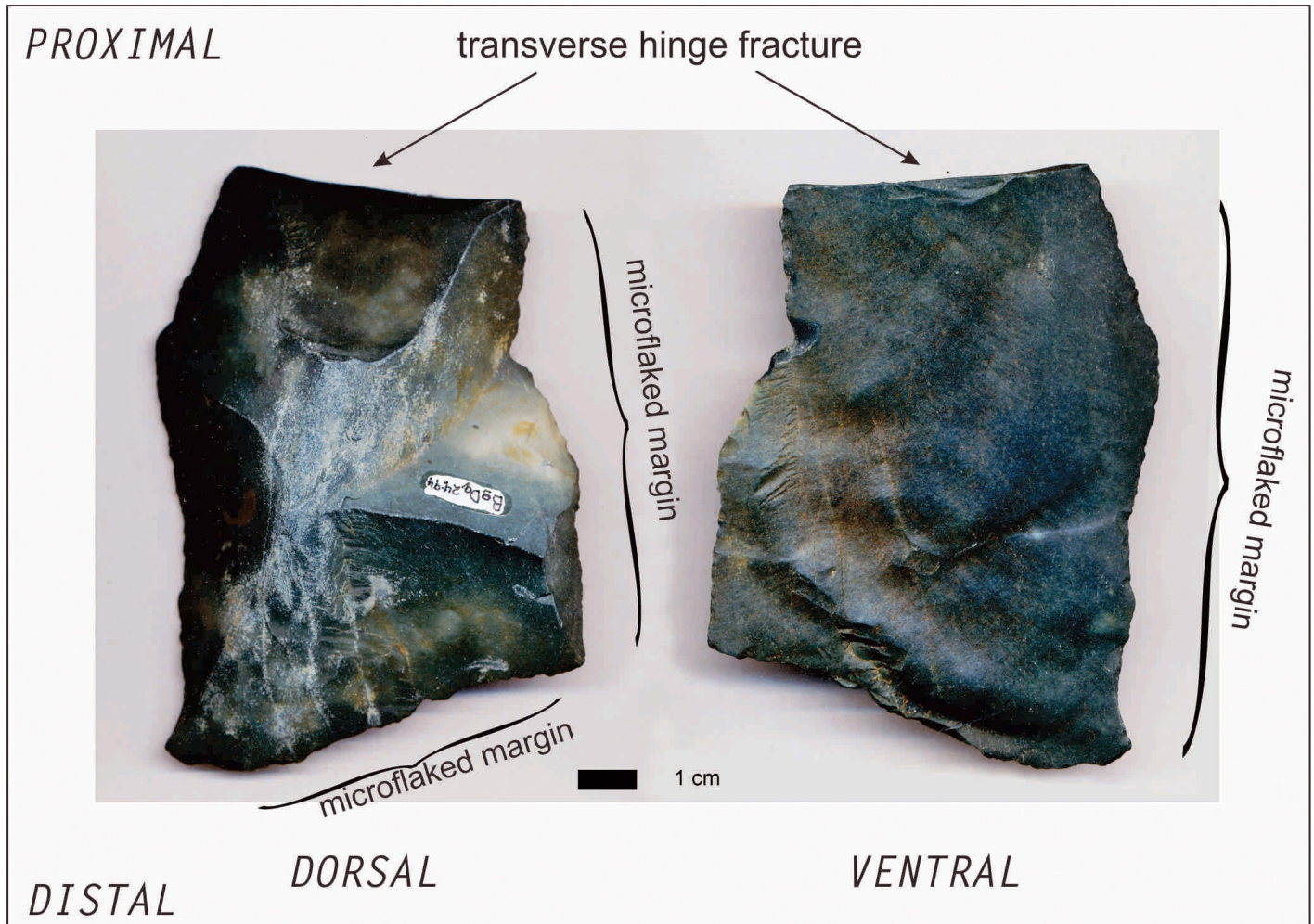


Figure 32: Very large flake/blade, midsection and distal end, made of dark volcanic (BgDq24:94). Note the microflaked margins.

- A flake/blade (BgDq24:123) made of strongly bleached aphanitic volcanic (Figure 41). L = 8.22 cm; W = 4.51 cm; T = 1.45 cm; M = 52.5 g. It exhibits an unfaceted striking platform, a dorsal arsis parallel to the long axis and a prismatic cross-section. The right lateral and distal margins exhibit continuous bifacial microflaking.

Two flake/blades from Rum Beach exhibit no marginal microflaking. However, in differing ways, each is relevant to interpreting the technology that was used to produce the flake/blades, and their temporal/cultural affiliations.

- A small flake/blade (BgDq24:18) made of dark volcanic (Figure 33). L = 4.40 cm; W = 1.70 cm; T = 0.65 cm; M = 5.2 g. This artifact is not beach rolled. The striking platform is unfaceted, bleached and thus cortical; a dorsal arsis parallels the long axis producing a prismatic cross-section. It could be classified as a

microblade. In this it resembles some small blades recovered from a submidden black soil layer in the Beach Site on the Roque Islands in Maine (Sanger 2008:23–26). Similar microblade-like flakes are associated with some Early Maritime Woodland assemblages in the Maritimes (e.g., Tuck 1984:70).⁴⁸

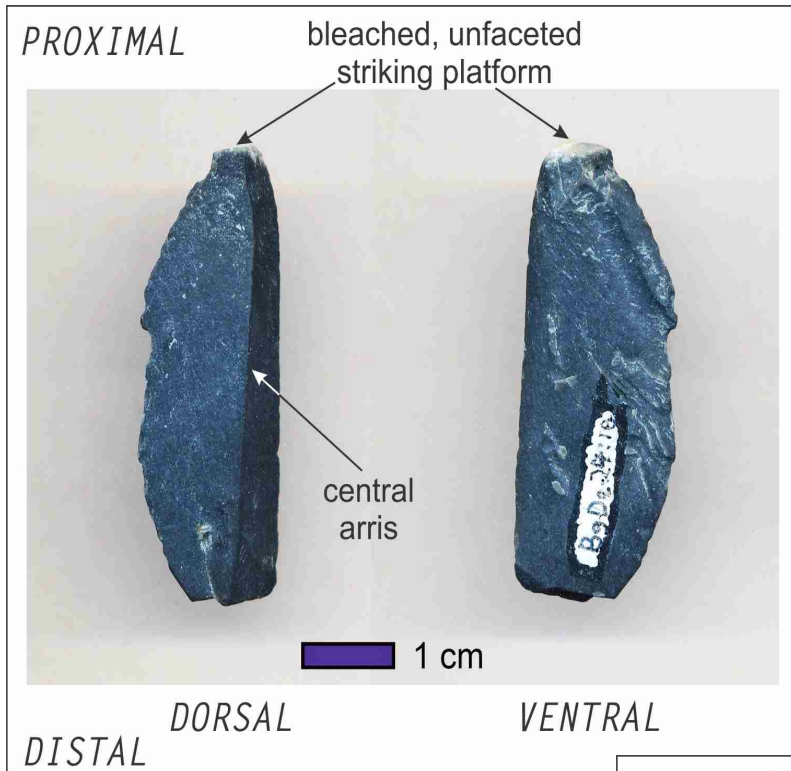


Figure 33: Flake/blade made of dark volcanic (BgDq24:18). Note that this artifact is within the size range of microblades.

- A flake/blade (BgDq24:34) made of dark volcanic (Figure 34). L = 6.75 cm; W = 3.38 cm; T = 0.78 cm; M = 14.9 g. This artifact is not bleached and is only slightly beach rolled. The striking platform is faceted. Randomly oriented flake scars on the dorsal face produced a sinuous arris, roughly parallel to the long axis. This artifact resembles a crested blade (*lame à crête*) resulting from the preparation of a blade core (e.g., Crabtree 1972:72). In the absence of formal blade cores, this resemblance could be coincidental.

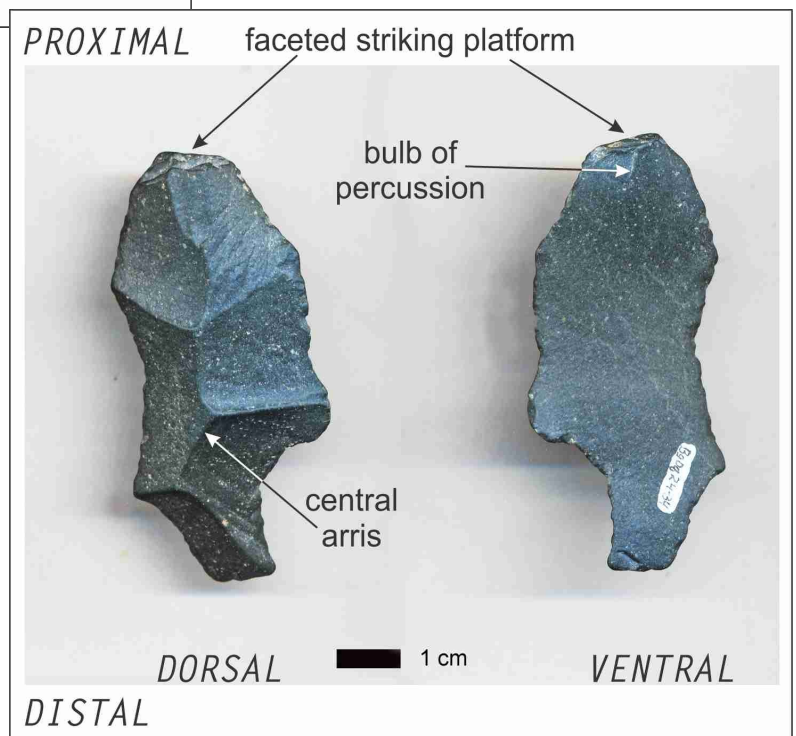


Figure 34: Flake/blade made of dark volcanic (BgDq24:34). Note how the scars from previous flake removals converge to form a sinuous arris on the dorsal face of this artifact.

⁴⁸ There are several other microblade-like pieces of debitage from Rum Beach; see Figure B3.

Cores and Core Fragments. Most of the cores and core fragments in the Rum Beach assemblage are relatively amorphous multidirectional flake cores made of light and dark volcanics and bull quartz (Figure 35). There are no obvious blade cores.

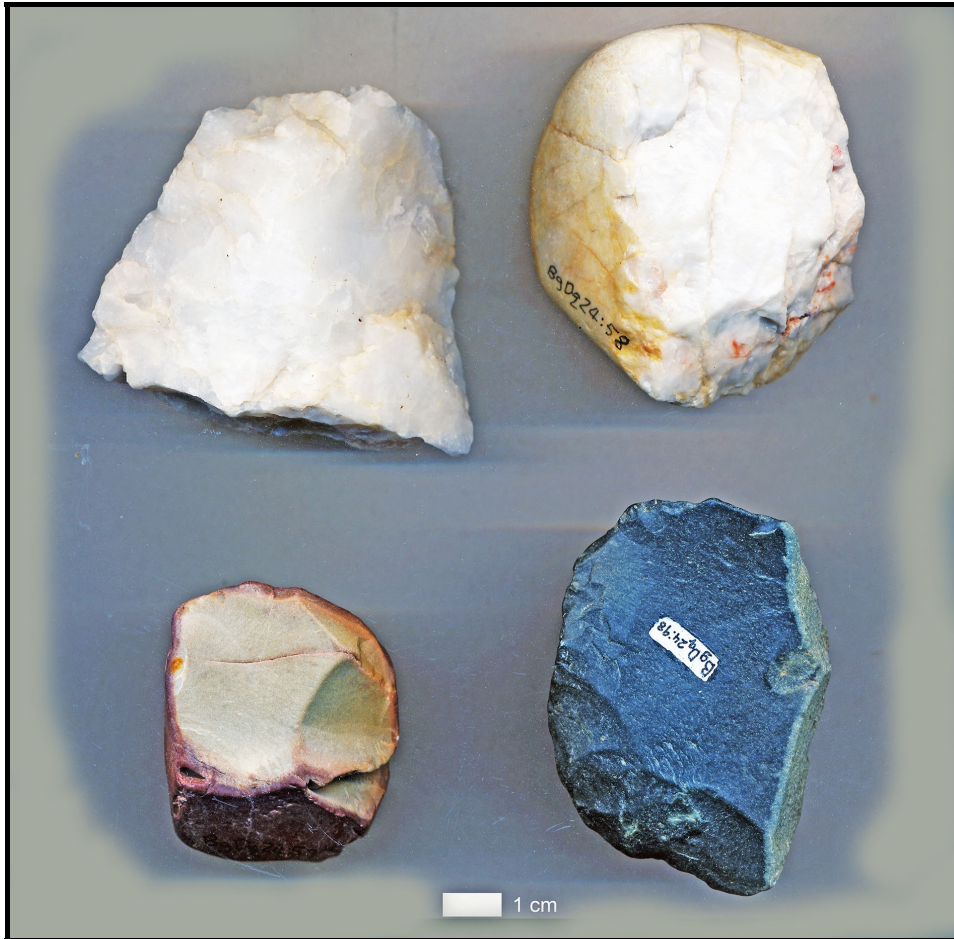


Figure 35: Examples of flake cores made of bull quartz (upper), unidentified material with cortex stained maroon by conglomerate groundmass (lower left) and dark volcanic (lower right).

The artifact shown in Figure 36 is a notable exception. It is a small bipolar core made on a pebble of waxy cryptocrystalline variegated chert. Initially, the red and green colors led me to believe that this artifact was made of a variant of Munsungun Chert (e.g., Pollock et al. 1999). However, it is not completely consistent with any example of that material I have for comparison, and the pebble cortex makes it unlikely that this is an exotic material. Small pebbles of chert have been reported from Perry Formation conglomerates (Georgiady and Brockman 2002); this may be one that was selected as toolstone. This artifact is consistent with Late Maritime Woodland bipolar reduction technology (e.g., Black 2004c:76, 80) and may date to a later time than most other stone tools from Rum Beach.



Figure 36: Bipolar core fragment made of variegated chert (BgDq24:37; photo: C.D. Gilbert).

Flake Debitage. The Rum Beach assemblage includes all stages of flaked stone manufacture, from the collection and reduction of cores, through primary, secondary and tertiary flakes and flake fragments to finished artifacts.⁴⁹ Most debitage (e.g., Figure 37) attests to bifacial reduction to produce the formal tools found in the assemblage or similar tools. There is little evidence of bipolar reduction. The flake debitage includes 117 pieces exhibiting a size range varying from as large as 47.3 g (Figure 2) to the smallest complete flakes at about 1.0 g (Figures 45, 47). The mean piece size is about 10.0 g, which is considerably larger than the mean piece size for most flake debitage assemblages from the later land-based assemblages on the Bliss Islands (see, e.g., Black 2004c:186).

In part this difference in size distribution is deceptive, because intertidal and land-based assemblages are not directly comparable. Trowel and screen excavation of land-based prehistoric components results in routine recovery of small flakes; the number and minimum size of the flakes recovered depends on the mesh size used in the screens (e.g., Hrynick et al. 2012; Hrynick and Black 2016). Surface collecting, as at Rum

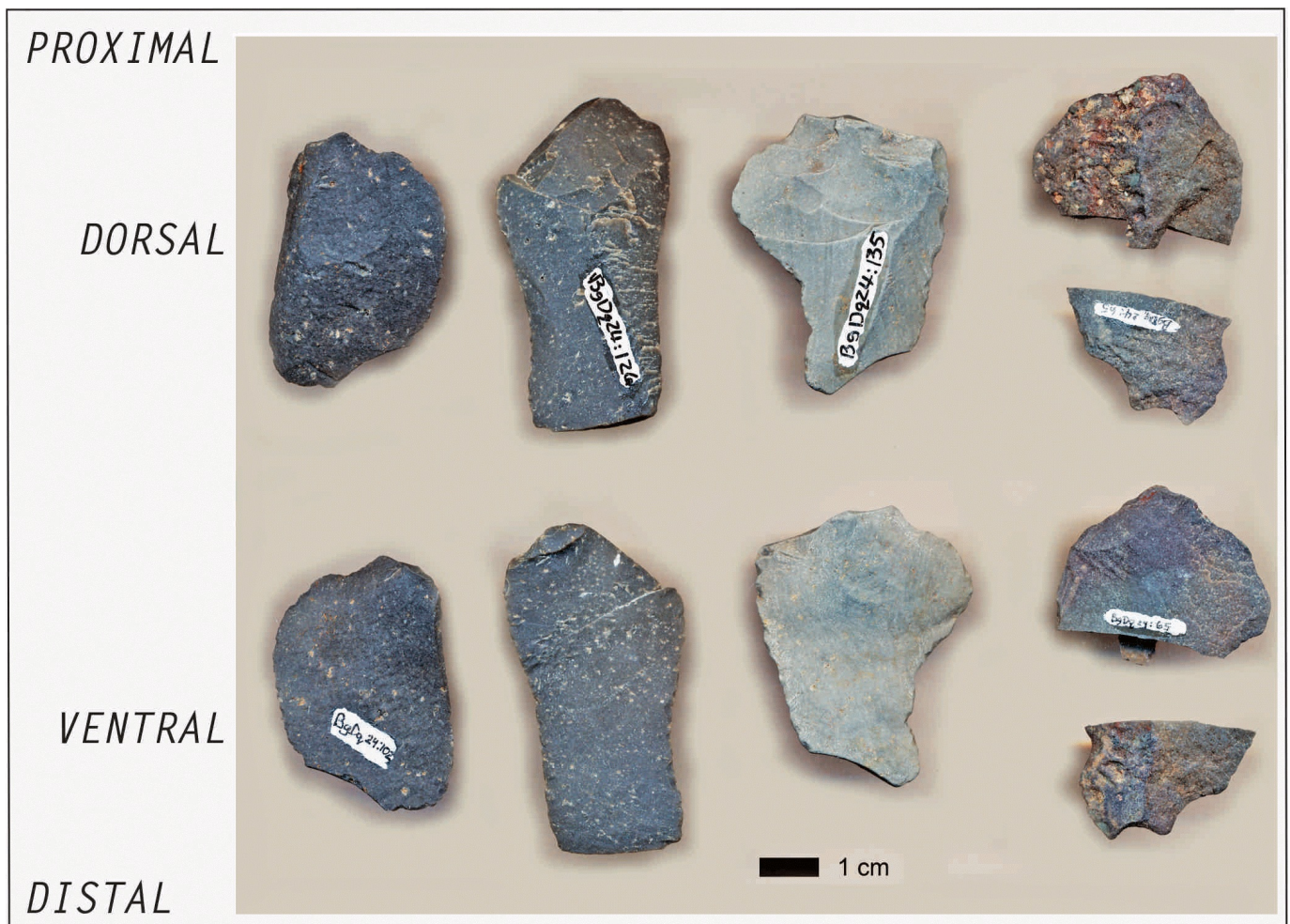


Figure 37: Four primary and secondary flakes from the Rum Beach assemblage (BgDq24:102, 126, 135, 65). Note that the flake on the right (BgDq24:65) is not beach rolled, and was recovered as two associated pieces that refit to form a single flake.

⁴⁹ Several archaeologists, including William Ritchie, Dena Dincause, David Sanger and Bruce Bourque, have commented on the distinctiveness of Terminal Archaic flaked stone reduction techniques and the flake debitage produced by them. However, little description or analysis of the flake debitage assemblages has appeared in the literature. Even John Cross's (e.g., 1993) analysis of Susquehanna Tradition flaked stone technology, which led him to postulate that flaked stone preforms were made by craft specialists, focused almost exclusively on formal tools. I have illustrated a range of debitage from Rum Beach here to underline its distinctiveness.

Beach, is inevitably biased toward recovery of the larger and thus more easily recognizable pieces of debitage. Moreover, the processes of erosion and beach rolling more rapidly eliminate smaller pieces or, at least, render them unrecognizable.⁵⁰

That said, it is my impression that the larger pieces of flaked debitage in the Rum Beach assemblage are absolutely larger than any flakes recovered from nearby Middle and Late Maritime Woodland components in the Quoddy Region. Moreover, several of the larger flakes from Rum Beach exhibit marginal modifications similar to those observed on the flake/blades (e.g., Figure 38),⁵¹ which, for the most part, is not the case in Middle and Late Maritime Woodland assemblages. Taken together, these observations, coupled with the cortical spalls and flake/blades described above, suggest that the flaked stone technology employed by the Indigenous people who left their tools at Rum Beach was distinctly different from the technology employed by their descendants and successors.

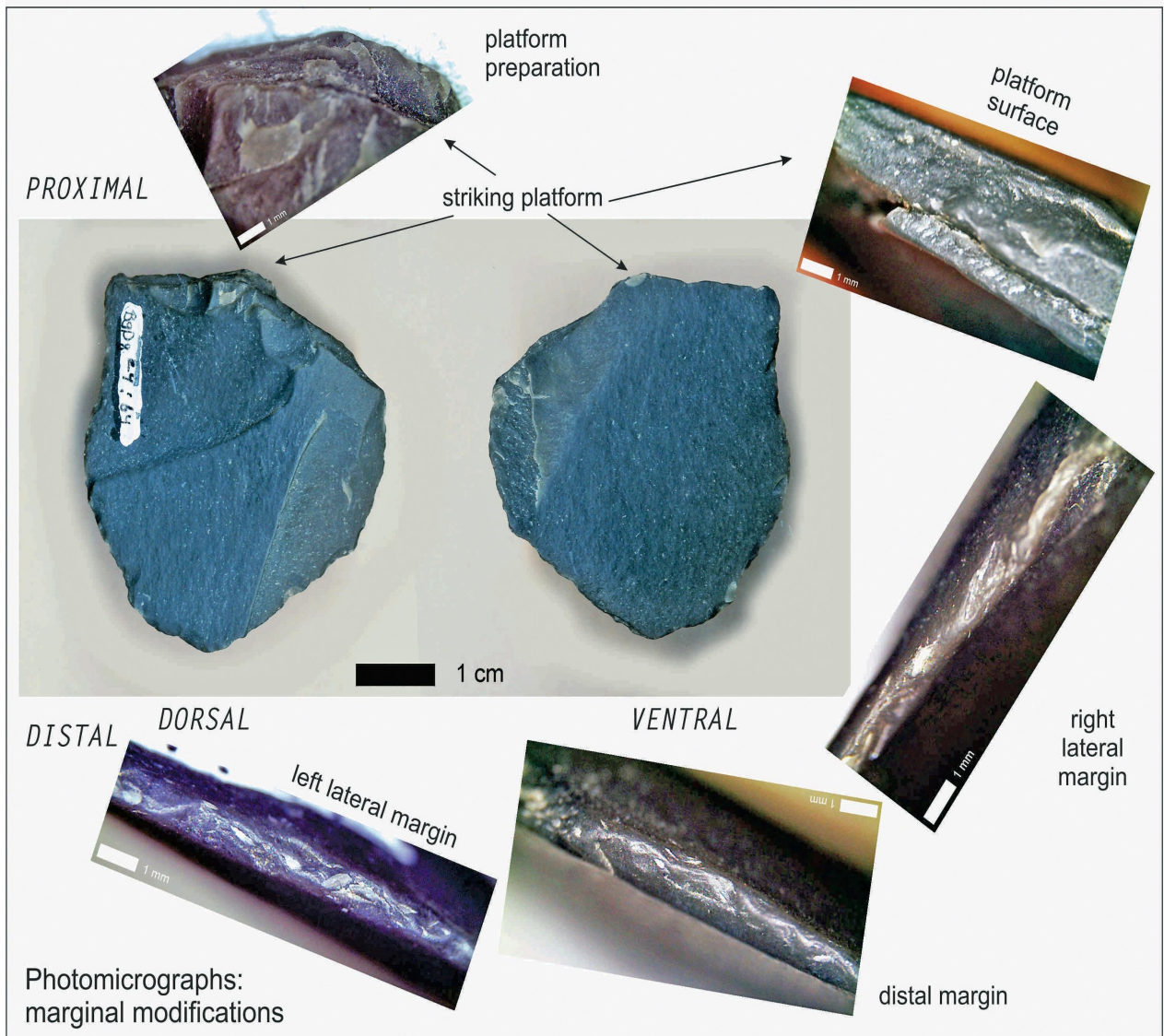


Figure 38: Secondary flake made of Apple-Green Glassy Rhyolite (BgDq24:64). Note the various marginal modifications.

⁵⁰ For more on this see the section on the taphonomy of flaked stone below.

⁵¹ For more on this see the section on modifications to flaked tool margins below.

Technological Analyses

Modifications to Flaked Tool Margins. There are three types of modifications to the margins of flaked stone artifacts in the Rum Beach assemblage: 1) intentional retouching by tool-makers as they shaped working edges for particular tasks; 2) incidental use-wear produced on margins as tool-users employed the artifacts for various tasks; and 3) damage to the margins produced by environmental processes after the artifacts were incorporated into the archaeological record. Intentional retouch on formal tools is expected and its identification is generally uncontroversial. Conversely, the frequency and degree of microflaking on the margins of flake/blades and flakes is a feature that distinguishes the Rum Beach assemblage from later flaked stone assemblages in the Quoddy Region. About 65% of the artifacts identified as flake/blades, and ca. 25% of the flake debitage, exhibit marginal microflaking. The challenge this assemblage presents is distinguishing between microflaking on tool margins resulting from use-wear as opposed to post-depositional processes.

Platform preparation on the striking platforms and proximal dorsal faces of flakes (e.g., Figure 38) are forms of intentional marginal modification. Intentional retouching of formal bifacial tools, such as the projectile points and preforms described above, was inherent to the processes of manufacturing, resharpening and rejuvenating these tools (e.g., Figures 18, 19, 20). Some informal tools, such as cortical spalls, also were bifacially retouched (e.g., Figure 27). Intentional unifacial retouching, especially of the type used to produce formal scrapers (Whittaker 1994:19, 116–118), is conspicuously absent from the Rum Beach assemblage.

Post-depositional microflaking of tool margins is obvious in some cases. For example, microflake removals on the margins of some artifacts clearly occurred after the artifact surfaces were bleached or polished through burial and/or beach rolling and these artifacts were recovered before continued abrasion could mute the resulting flake scars. Figure 40 shows a salient example on the margin of a flake of flow-banded rhyolite (BgDq24:9). In other cases, the forms of the modifications, such as crescentic fractures (e.g., Figures 2, 39), are typical of pressure-induced breakage. These types of modifications tend to be unsystematic, occurring randomly on the most fragile margins of the artifacts, and probably represent post-depositional damage.

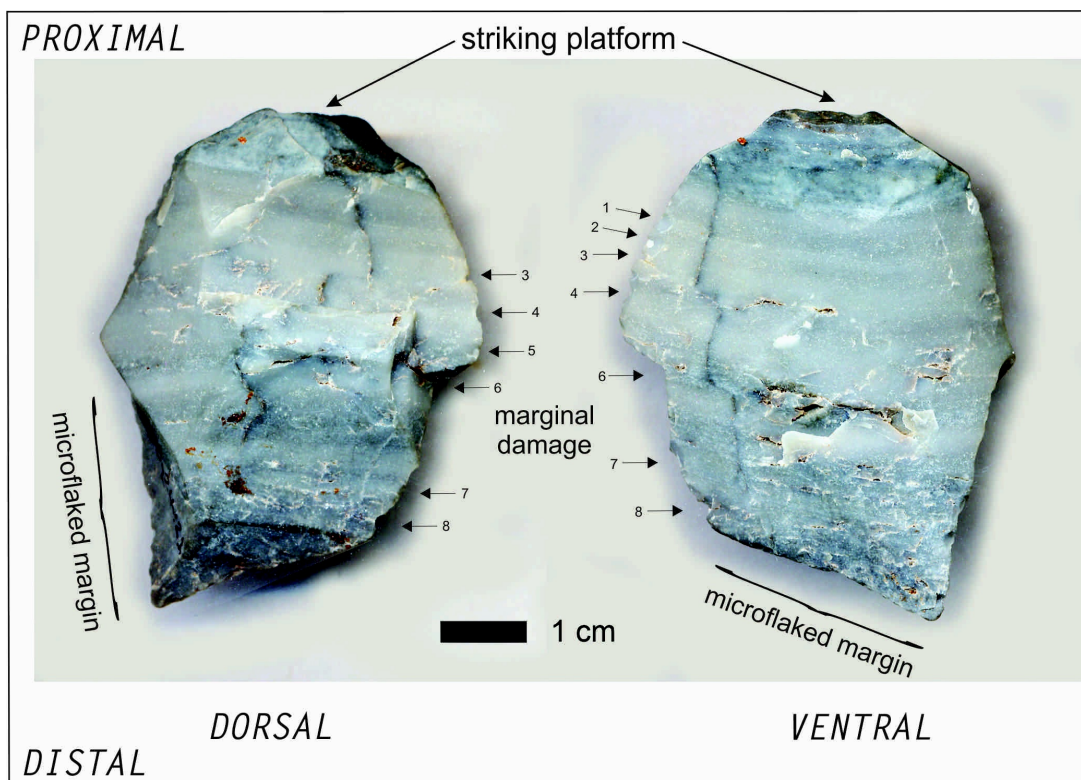


Figure 39: Secondary flake made of light flow-banded volcanic (BgDq24:21). Note the variety in marginal damage and microflaking.

A series of flake/blades and flakes exhibit extensively and continuously microflaked lateral and distal margins. I describe a brief selection of these below.

- The flake/blade (BgDq24:1) shown in Figure 8 exhibits continuous bifacial microflaking on the left lateral margin and near-continuous bifacial microflaking on the right lateral margin. The artifact has been slightly beach rolled subsequent to the microflaking.

- The flake/blade (BgDq24:59) shown in Figure 30 exhibits near-continuous bifacial microflaking on the right lateral margin. The artifact was slightly beach rolled subsequent to this modification. An area on the ventral surface of the left lateral margin exhibits irregular unifacial (dorsal–ventral) microflaking that appears to have occurred subsequent to the beach rolling.

- The flake/blade (BgDq24:119) shown in the upper part of Figure 31 exhibits near-continuous bifacial microflaking on both lateral margins. The artifact was slightly beach rolled subsequent to this modification. There is one larger microflake removal on the ventral face of the right margin that appears to have occurred subsequent to the beach rolling.

- The flake/blade (BgDq24:136) shown in the lower part of Figure 31 exhibits continuous bifacial microflaking of both lateral margins and the left portion of the distal margin. These modifications appear to have occurred prior to both the moderate beach rolling of the artifact and the bleaching of the lithic material.

- The partial flake/blade (BgDq24:94) shown in Figure 32 exhibits near-continuous microflaking on both lateral margins and the distal margin. The microflaking is largely unifacial (dorsal–ventral) and appears to have occurred prior to the slight beach rolling of the artifact.

- The flake/blade (BgDq24:123) shown in Figure 41 exhibits continuous bifacial microflaking along the entire left lateral margin and the distal margin. This modification occurred before the slight beach rolling of the artifact and the strong bleaching of the lithic material.

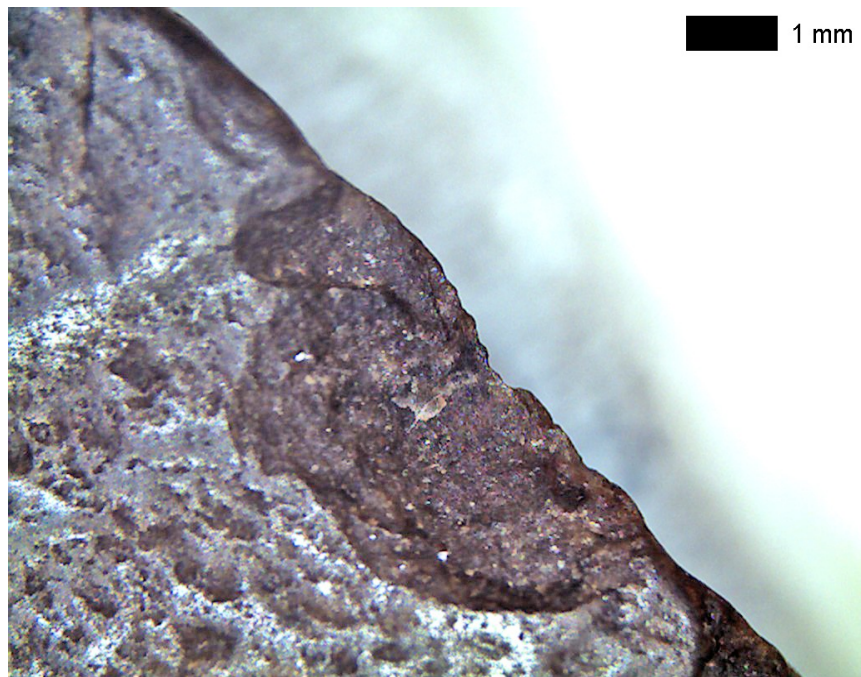


Figure 40: Photomicrograph showing microflaking on the distal margin of the ventral face of a secondary flake made of flow-banded rhyolite (BgDq24:9). The freshly exposed appearance of the material in the flake scar indicates that the flake removal occurred after the artifact surface was polished by beach rolling.

- The continuum from marginally modified flake/blades to marginally modified debitage flakes is illustrated by the Welch flake (BgDq24:10; Figure 2). This primary flake, made from a dark volcanic with faint flow-banding, exhibits a large, acutely angled striking platform, a dorsal arris partly parallel to the long axis and a small area of cortex on the left lateral margin. L = 9.2 cm; W = 7.2 cm; T = 0.75 cm; M = 47.5 g. It appears to have been detached from a very large biface or bifacial core. The material is not bleached and is

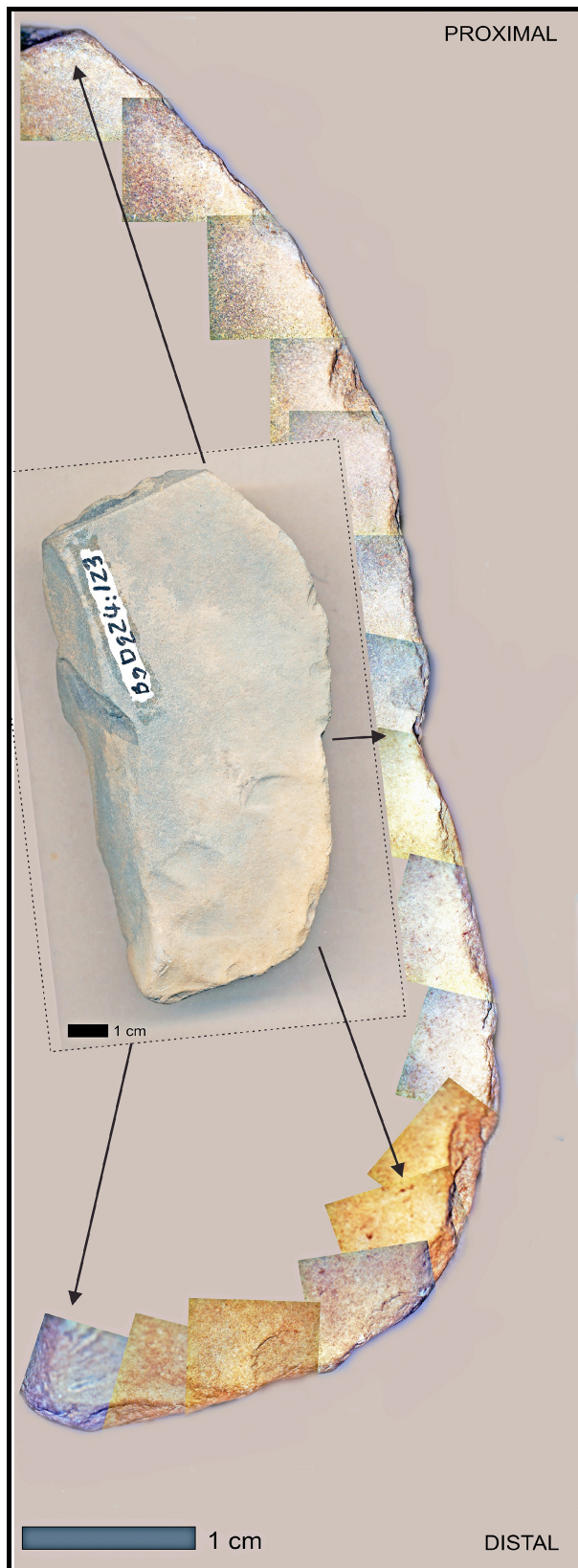


Figure 41: Flake/blade made of bleached volcanic material (BgDq24:123). Note the near-continuous bifacial microflaking on the right lateral and distal margins.

only slightly beach rolled. The left proximal margin exhibits several dorsal–ventral microflake removals and one crescentic fracture; these could be pressure fractures that occurred while the artifact was in site context or could be more recent fractures incurred during beach rolling in erosional context. A short series of unifacial (dorsal–ventral) microflakes that appear to have been removed prior to beach rolling occur on the left distal margin; these may represent use-wear.

- Figure 39 shows a relatively large and thick secondary flake (BgDq24:21) made of a light coloured, flow-banded vesicular volcanic material. Bleaching may account for the light color. This flake exhibits an unafaceted striking platform; at the distal end of the dorsal face an arris nearly parallel to long axis has produced a pointed distal termination. $L = 6.10$ cm; $W = 4.70$ cm; $T = 1.35$ cm; $M = 34.0$ g. It is only slightly beach rolled. This artifact exhibits a variety of marginal modifications. Much of the right margin presents a jagged appearance produced by a series of microflake removals, some visible only on the dorsal face (5), some on the ventral face (1, 2) and some on both faces (3, 4, 6, 7, 8). These include V-shaped fractures (8), notch-like fractures (3), crescentic snaps (4) and a larger L-shaped fracture (6) probably enhanced by a flaw in the material; these fractures resemble those produced by post-depositional processes in experimental contexts (e.g., Pevny 2012). Note the hanging errillure flake in the microflake scar numbered 2, which indicates a relatively recent flake removal. In contrast series of mainly ventral–dorsal oriented microflakes, on both distal lateral margins, and slight rounding of distal point of the flake may indicate use-wear.

- The primary flake (BgDq24:132) shown in Figure 43 is relatively large ($M = 25.2$ g), triangular in shape and made of dark volcanic. It has been only slightly beach rolled and only the striking platform is bleached. Both lateral margins exhibit discontinuous microflaking. The short sequence of unifacial (dorsal–ventral) microflakes on the proximal right margin may represent use-wear. The other marginal modifications appear more random; they, and especially the relatively large crescentic fracture on the central right margin, may represent post-depositional damage.

From these observations, I suggest that the more systematic sequences of marginal microflaking, especially those that appear to have been produced before bleaching and beach rolling, probably represent use-wear that was

present on the artifacts at the time of they were incorporated into the archaeological record. That these modifications are unlikely to result from concatenations of random microflakes incurred post-deposition and as the artifacts were beach rolled over long periods is substantiated by the following comparison of two artifacts made from the same lithic material and in similar states of preservation.

- The Apple-Green Glassy Rhyolite cortical spall (BgDq24:60) shown in Figure 28 is only slightly bleached on the cortical surface (which could have occurred before the cobble was flaked); the ventral fracture surface is not bleached. This artifact is not damaged by beach rolling; probably it was eroded onto the beach a relatively short time before it was collected. Portions of the distal margin exhibit fragile feathered terminations. There are no deliberate marginal modifications. The lateral and distal margins of this spall could have been retouched to produce a cortical spall tool (as was the spall in Figure 27), or it could have been used for some task to produce a regularized (use-worn) distal margin (resembling that of the spall in Figure 29). However, it was not so modified. In contrast...

- The margins of the Apple-Green Glassy Rhyolite flake (BgDq24:64) shown in Figure 38 have been extensively modified. This relatively small flake (M = 10.8 g) is not bleached and has not been damaged by beach rolling. Probably it was eroded onto the beach a relatively short time before it was collected. The faceted striking platform and platform preparation scarring on the proximal dorsal surface show that it was removed from a prepared core edge. The cross-section profile of the flake suggests that the distal margin would have exhibited a feathered termination at the time it was made. However, both lateral margins and the distal margin now exhibit continuous bifacial microflaking. This microflaking has been obscured neither by bleaching nor by beach rolling.

The margins of neither of these artifacts exhibit intentional retouching, nor do they exhibit breakage suggesting post-depositional damage. The differences between their margins suggest that while the flake (BgDq24:64) was used as a tool the spall (BgDq24:60) was not.

It would be instructive to know how widespread the types of modifications described above are in Quoddy Region intertidal assemblages. However, further interpretation of the significance of these modifications probably will require the recovery of land-based assemblages including flake/blades and debitage flakes bearing microflaked margins. Land-based Terminal Archaic sites exist in both NB and NS, but only the Boswell site in NS (Campbell 2016) has been documented in any detail in the literature.

Flaked Lithic Materials. The Rum Beach assemblage includes 13 of the 24 flaked lithic material types identified in the Bliss Islands sites. More than any land-based assemblage from the islands, the Rum Beach flaked stone assemblage is dominated by dark coloured aphanitic volcanics and these are distinctive from most dark volcanics found at other sites. Moreover, the Rum Beach assemblage includes artifacts made of Kineo-Traveler Mountain Porphyry and flow-banded rhyolites, the two material types most associated with Terminal Archaic flaked stone assemblages in Maine (Doyle 1995:315–316; Spiess 1989).

Figure 42 shows the quantitative distribution of lithic materials from Rum Beach.⁵² Notes on each of the material types follow:

Local Materials. These materials are known to be available from Quoddy Region bedrock and/or secondary sources (Gilbert et al. 2007a).

Bull Quartz (QTZ). Bull quartz varies from opaque milky white to semi-translucent grey. It is available from veins in some volcanic bedrocks and as clasts in conglomerates and unconsolidated sediments. It occurs mainly as cores, core fragments and debitage. One formal, temporally diagnostic Terminal Archaic tool made of bull quartz (Figure 9) was recovered from Rum Beach. Spiess and Hedden (2000:45) note that “quartz does not seem to have been used for making finished tools at Susquehanna Tradition sites in Maine.”

⁵² The total mass of flaked lithics in the assemblage is 3297.12 g. Miscellaneous and unclassifiable materials (38.80 g) were omitted from the graphic presentation in Figure 42.

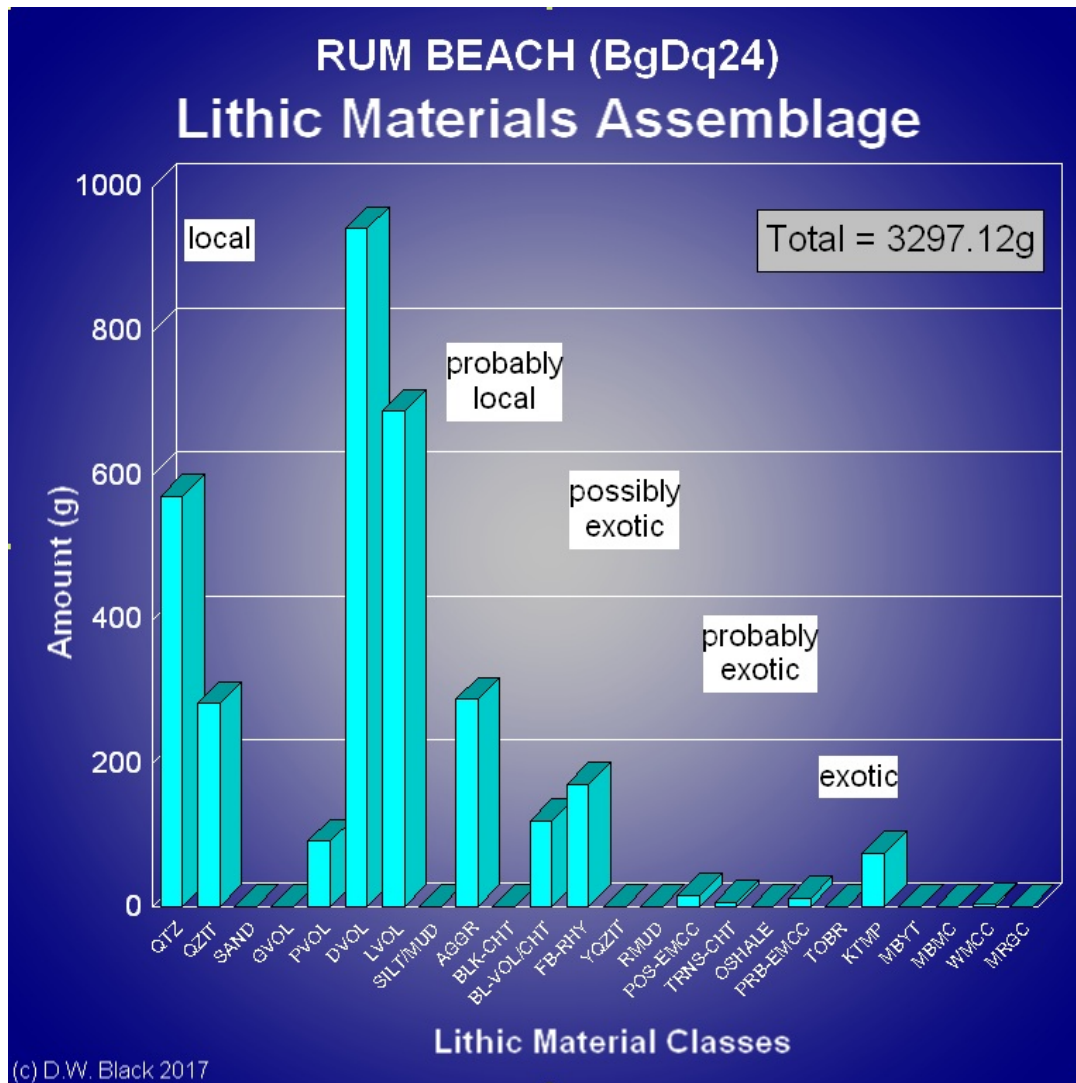


Figure 42: Quantitative distribution of flaked lithic materials in the Rum Beach assemblage.

Quartzites (QZIT). Quartzites vary from medium- to fine-grained in texture and from light grey to purple-brown in color. They are available as clasts in conglomerates and unconsolidated sediments and occur mainly as spalls (Figures 27, 29) and debitage.

Porphyritic Volcanics (PVOL). Most porphyritic volcanic artifacts in the Rum Beach assemblage are exotic, classified as Kineo-Traveler Mountain Porphyry below. Locally available porphyritic volcanics are rare; an example is shown in Figure B4. These materials, which occur as debitage, probably grade into aphanitic felsic volcanics⁵³ having grey-green groundmasses.

Dark coloured Volcanics (DVOL). This most common lithic material type in the Rum Beach assemblage is distinctive and may be a mafic intrusive rock, perhaps glassy diabase.⁵⁴ It is characterized by very fine-grained aphanitic groundmasses (e.g., the inset in Figure 2) that vary from black, to blue-black and blue-grey in colour. The conchoidal⁵⁵ fracture is excellent and flaws appear to be uncommon. Some pieces are slightly

⁵³ “Felsic” refers to igneous rocks composed of light coloured minerals such as quartz, feldspars and micas.

⁵⁴ “Mafic” refers to igneous rocks composed mainly of dark minerals, typically iron–magnesium silicates. “Diabase” is a black or dark grey aphanitic mafic rock that usually occurs as intrusive dikes and sills. It has a conchoidal fracture and closely resembles basalt, but often is somewhat harder, denser and glassier.

⁵⁵ Conchoidal fracture: a smoothly curving fracture pattern characteristic of fine-grained glassy materials.

bleached on flaked surfaces (Figures 18, 21, 32). There is no bedrock source of DVOL on the Bliss Islands although dikes of mafic volcanics occur in bedrocks on some islands nearby;⁵⁶ none of the pieces from Rum Beach appear to have come from secondary geological sources such as glacio-fluvial cobbles or clasts from conglomerate. Some pieces exhibit strongly bleached cortex and/or unflaked weathered striking platforms (e.g., Figures 8, 33, inset in Figure 43); these surfaces may represent weathered joint faces (quarry fracture faces), suggesting that DVOL was acquired from a bedrock source. DVOL occurs as formal tools including temporally diagnostic Terminal Archaic types (Figures 18, 21), bifaces (Figure 23), informal tools (Figures 8, 32) and debitage. I interpret DVOL as a local lithic material brought to Rum Beach by Terminal Archaic people and fashioned into artifacts there.

Light coloured Volcanics (LVOL). This material type includes a range of aphanitic felsic volcanics. Such materials are widespread in the coastal volcanic belt of Maine and NB. LVOL exhibits fine-grained grey-green groundmasses susceptible to bleaching, and good conchoidal fracture. At Rum Beach, LVOL appears mainly as cores and debitage, but occasionally as formal (Figure 24) and informal (Figure 31 lower) tools. *Probably Local Materials*. These materials are thought to be available from Quoddy Region sources, but may have been acquired from sources outside the region.

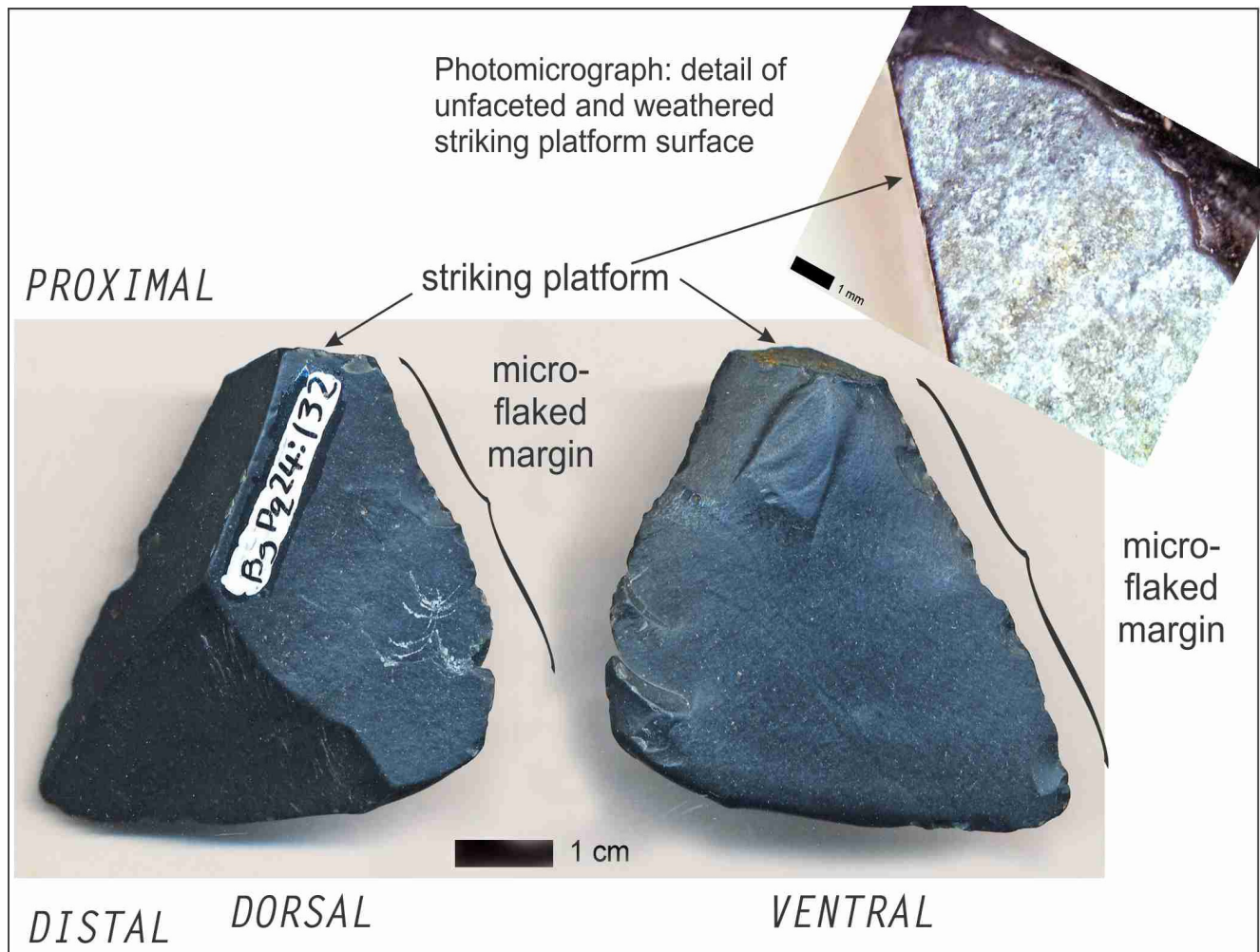


Figure 43: Primary flake of dark volcanic (BgDq24:132). Note the microflaked margins and the weathered striking platform.

⁵⁶ Sanger (2008:23–26, 2012:254) indicates that blades and blade cores recovered from a sub-midden black soil layer on the Roque Islands, Washington County, Maine may be made of diabase. He notes that diabase dikes occur in the local bedrocks. The DVOL in the Rum Beach assemblage may be the same or a similar material.

Apple-Green Glassy Rhyolite (AGGR). This material is tentatively identified as a very fine-grained felsic volcanic exhibiting a green groundmass with thin-edge translucency and excellent conchoidal fracture. Some variants are susceptible to bleaching (Figure 19). AGGR has occasionally been identified as clasts in conglomerates and unconsolidated sediments in the Quoddy Region; primary and secondary sources have been reported elsewhere in NB. At Rum Beach AGGR occurs as formal (Figure 19) and informal (Figure 28, 30, 38) tools and debitage.

Bleached Volcanics and Cherts (BL-VOL/CHT). In the Rum Beach assemblage these materials probably are felsic volcanics too bleached to be further identified. They probably are from local sources and may be redundant on materials described in other classes. The most salient example is the stemmed projectile point shown in Figure 15.

Possibly Exotic Materials. These materials may have been acquired from sources outside the Quoddy Region, but this is not definitely known to be the case.

Flow-banded Rhyolites (FB-RHY). The flow-banded rhyolites in the Rum Beach assemblage vary in color from orange-browns and purple-browns to blue-greys, and in texture from distinctly and minutely to more vaguely banded. All are fine-grained; some exhibit surface sheen from beach rolling (Figures 14, 40), others exhibit bleached surfaces with enhanced structural details (Figures 46, B5). They exhibit good, although somewhat asymmetrical conchoidal fracture. FB-RHY may be local or exotic, or a combination of local and exotic. Banded spherulitic rhyolite from the source at Vinalhaven Island in the mouth of the Penobscot River is a common lithic material in Terminal Archaic assemblages in Maine (Bourque et al. 1984). However, none of the pieces from Rum Beach is completely consistent with the hand specimens of Vinalhaven material that I have for comparison. Moreover, clasts of flow-banded rhyolites have been observed in Quoddy Region sediments and bedrock sources of banded rhyolites are known from northern Maine to Massachusetts (Boudreau 2016:160, 167–168; Georgiady and Brockman 2002; Pollock et al. 2008). At Rum Beach FB-RHY occurs as formal, temporally diagnostic Terminal Archaic artifacts (Figures 14, 20), as informal tools and as debitage (Figures 40, 46, B5).

Possibly Exotic Multi-coloured Cherts (POSS-EMCC). The small bipolar core shown in Figure 36 is made on a pebble of waxy cryptocrystalline variegated chert. This material resembles some exotic cherts from Maine (e.g., Pollock et al. 1999); however, the pebble cortex makes this interpretation unlikely. Small pebbles of chert have been reported from Perry Formation conglomerates; this may be one that was selected as toolstone. Bipolar cores of chert have been identified in Late Maritime Woodland assemblages on the Bliss Islands and elsewhere in the Quoddy Region.

Probably Exotic Materials. These materials probably were acquired from sources outside the Quoddy Region.

White-Spotted Translucent Chert (TRNS-CHT). The small biface shown in Figure B2 (left) is made of White-Spotted Translucent Chert. This material appears in several Maritime Woodland assemblages in the Quoddy Region. It resembles Carboniferous-associated cherts from interior NB (Gilbert et al. 2006) and may be an exotic material.

Probably Exotic Multi-coloured Cherts (PROB-EMCC). Figure 44 shows two artifacts made of what are probably exotic cherts. The upper artifact is a small flake of opaque olive-brown cryptocrystalline chert. Spiess and Hedden (2000:44) indicate that, while “chert... is not generally characteristic of Susquehanna Tradition sites in Maine, it does appear as a trace lithic material.” They report small amounts of grey-green to tan chert associated with a Terminal Archaic component at the Waterville–Winslow bridge. The flake from Rum Beach may be the same or a similar material.

The core fragment shown in Figure 44 (lower) is made from a waxy cryptocrystalline chert variegated in white, red and grey speckles and bands. This material is somewhat consistent with Minas Basin Multi-coloured Chert from NS (Gilbert et al. 2006, 2007b) but the surface is too bleached to allow a definite

identification. Artifacts made from NS cherts have been identified at several Maritime Woodland components on the Bliss Islands and elsewhere in the Quoddy Region.

Exotic Materials. These materials definitely were acquired from sources outside the Quoddy Region (Gilbert et al. 2007b).

Kineo-Traveler Mountain Porphyry (KTMP). Five artifacts from the Rum Beach assemblage are made of Kineo-Traveler Mountain Porphyry, a distinctive felsic volcanic material from sources in central interior Maine (Boudreau 2016:166; Doyle 1995:304). These include two pieces of debitage (Figure 47), a biface (Figure 22) and two formal, temporally diagnostic Terminal Archaic tools (Figures 16, 17). KTMP has been identified in both earlier Archaic assemblages and later Maritime Woodland assemblages in the Quoddy Region, elsewhere in NB and in Maine. In Maine KTMP is the most common lithic material used by Terminal Archaic people. It also has been identified in Terminal Archaic sites in NS (Campbell 2016).

Washademoak Multi-coloured Chert (WMCC). The small flake shown in Figure B6 is made of Washademoak Multi-coloured Chert (Black and Wilson 1999; Gilbert et al. 2007a). Artifacts made of this material have been identified at Late Maritime Woodland components on the Bliss Islands and elsewhere in the Quoddy Region.

Spies (1989) noted that most Terminal Archaic flaked stone artifacts in Maine are made of relatively intractable, locally available lithic materials (often volcanics such as KTMP and Vinalhaven Banded-spherulitic Rhyolite), or exotic materials transported relatively short distances. For the most part the Rum Beach assemblage is consistent with this pattern. The few Rum Beach artifacts that deviate from this pattern appear to date to periods subsequent to the Terminal Archaic.

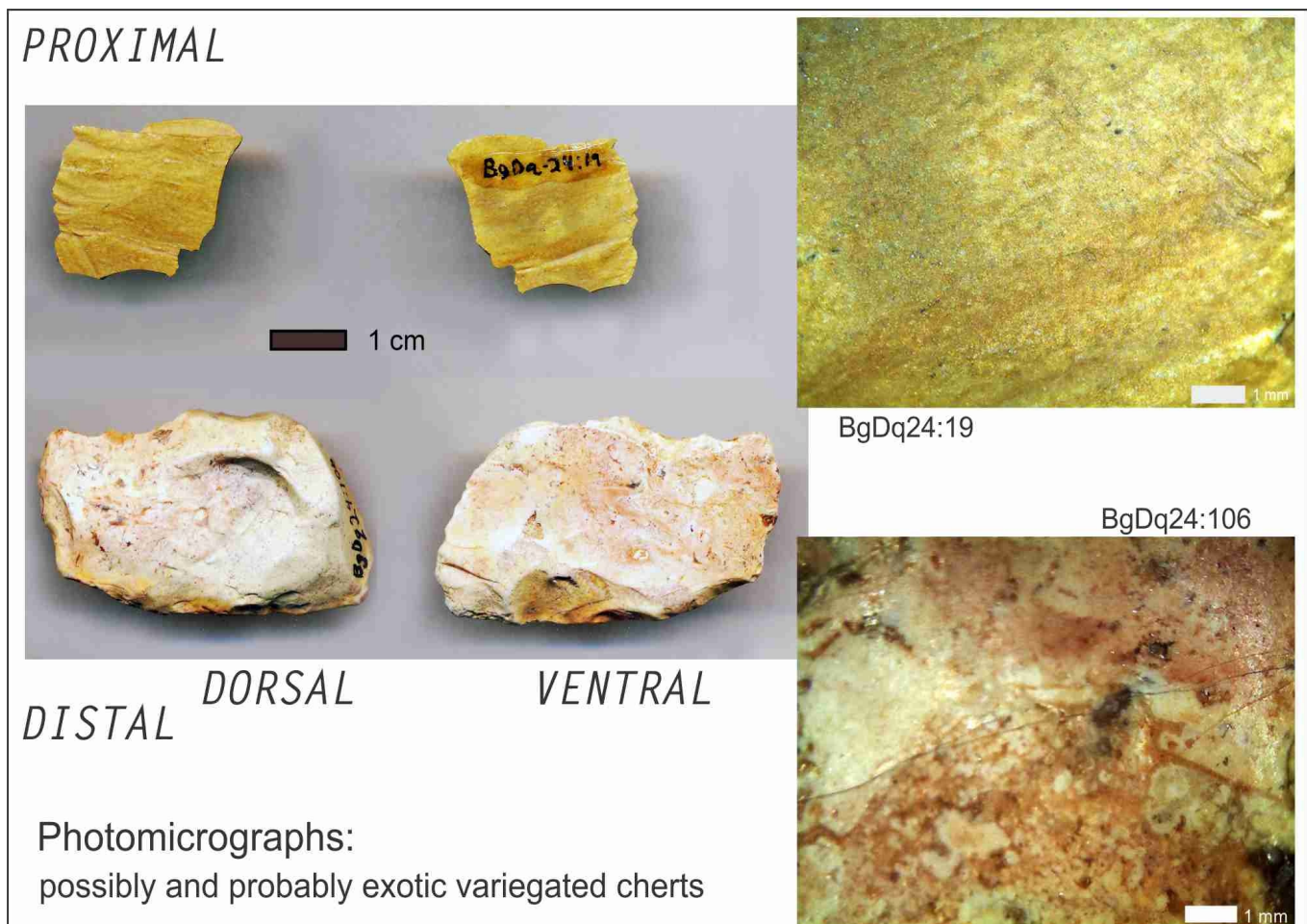


Figure 44: Possibly and probably exotic chert artifacts (BgDq24:19, 106) from the Rum Beach assemblage.

Taphonomy of Flaked Stone Tools. For the purposes of this report I define taphonomy as the study of what has happened to the Rum Beach stone tool assemblage from the time the artifacts were incorporated into the archaeological record until they were collected from the surface of the beach.⁵⁷ The effects of two taphonomic processes are most obvious in the assemblage: 1) bleaching of lithic materials; and 2) beach rolling of artifacts. Bleaching refers to loss of colour and structure in the groundmass of a lithic material as a result of exposure to sunlight and/or acidic soil and groundwater, which could occur prior to the lithic material being flaked, on/in the archaeological site before erosion or on the beach sediments after erosion. Beach rolling refers to blunting of edges and muting of surface features of stone artifacts as a result of impacts and abrasion, which could occur on/in the beach sediments as/after the artifacts were eroded from the archaeological site onto the beach. The effects of both processes vary among lithic materials, with felsic volcanics being most susceptible to these effects, other volcanics and cherts less susceptible and quartz and quartzites least susceptible. Despite these variations, I infer that, in general, the more extensive the bleaching and beach rolling, the longer the artifact has been exposed to these processes.

In the descriptions above I have assessed the degree of bleaching and beach rolling using a simple qualitative scale (slightly, moderately, strongly, extremely). Some artifacts in the Rum Beach assemblage are strongly bleached (Figures 15, 19), while others are not bleached at all (Figures 2, 38). Almost all of the artifacts recovered from Rum Beach have been beach rolled to some extent; however, while some are strongly beach rolled (Figures 23 center, 31), others are as undamaged macroscopically as artifacts excavated from land-based sites (Figures 17, 20, 37 right).

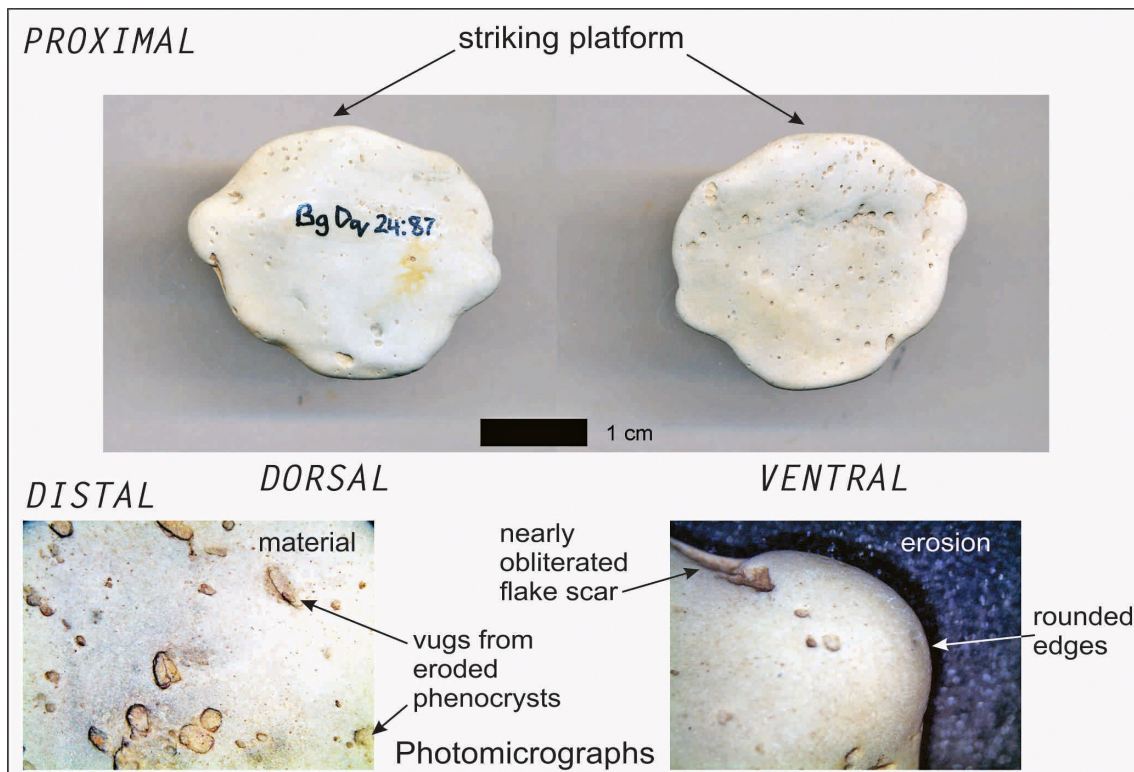


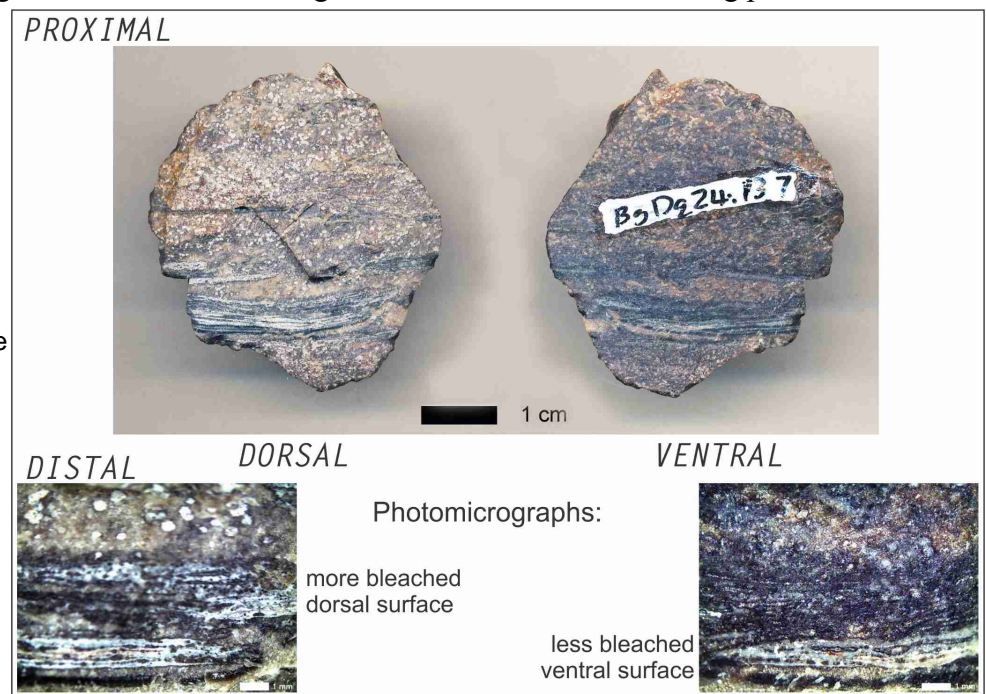
Figure 45: Extremely bleached and beach rolled tertiary flake (BgDq24:87).

⁵⁷ “Taphonomy,” sometimes referred to as “the science of burial,” is a term originally defined in paleontology in the mid-20th century to describe studies of the effects of processes such as decay, burial and preservation of organic remains as they became fossilized. The term was borrowed into archaeology in the 1970s, initially with reference to studies of the appearance and preservation of animal bones found in archaeological sites (see, e.g., <https://en.wikipedia.org/wiki/Taphonomy>). Now it has been extended to studying the preservation histories of both organic and inorganic archaeological remains including flaked stone (e.g., Dolan and Cooney 2010; Pevny 2012).

The extremes of bleaching and beach rolling are illustrated by the flake (BgDq24:87) shown in Figure 45. The striking platform and dorsal and ventral faces are still identifiable on this small ($M = 3.7$ g) tertiary flake. However, all of its surfaces have been extremely bleached to a near-uniform porcelain-white colour. The lithic material is no longer identifiable, although it is probably a felsic volcanic, and may have been vesicular (or porphyritic, if the voids represent the former locations of weathered-out phenocrysts).⁵⁸ Moreover, all of the margins of the flake have been highly rounded by beach rolling and surface features on both faces (e.g., voids, marginal microflakes) have been muted to near invisibility. As I noted previously, these processes probably have skewed the Rum Beach assemblage toward larger, less beach rolled artifacts made of less bleached materials, as these are more readily recognized by surface collectors. If the flake shown in Figure 45 was even a small degree more beach rolled, it would be indistinguishable from many natural small clasts⁵⁹ in the beach sediments.

It is most useful to consider bleaching within lithic material categories. For example, most strong bleaching of dark volcanics is restricted to striking platforms and portions of dorsal surfaces (e.g., Figures 8, 33, 43) suggesting that this bleaching occurred before the material was flaked to make stone tools. Similarly, some flow-banded rhyolite artifacts exhibit flat bleached dorsal faces that may represent surfaces weathered before the material was flaked (Figure 46); in this material, bleaching often makes structural details more salient (Figures 46, B5). In contrast, bleaching of light volcanics tends to be more extensive, to occur on most or all surfaces (Figures 24, 31 lower, B1) and to obscure structural details, making these materials more difficult to identify. However, bleaching sometimes enhances the visibility of marginal microflaking (Figure 41). In some cases, bleaching on light volcanic artifacts is more pronounced on one surface than on the other (Figures 17, 22; Footnote 40). This phenomenon also is observed on artifacts from land-based sites and usually is interpreted as resulting from artifacts remaining *in situ* and undisturbed for long periods.⁶⁰

Figure 46: Secondary flake made of flow-banded rhyolite (BgDq24:137) showing differentially bleached faces.



⁵⁸ A “phenocryst” is a macroscopically visible larger crystal in the finer-grained groundmass of a volcanic rock.

⁵⁹ A “clast” is a rock fragment broken off a larger mass of rock by physical weathering.

⁶⁰ The inference is that upward facing surfaces of such artifacts were subjected to more intense exposure to percolating acidic groundwater than the downward facing surfaces, resulting in more extensive bleaching of the upward facing surfaces.

Kineo-Traveler Mountain Porphyry is a material known to be particularly susceptible to bleaching in acidic soil environments.⁶¹ The five KTMP artifacts in the Rum Beach assemblage exhibit varying degrees of bleaching. The projectile point shown in Figure 16 exhibits a surface sheen, probably from abrasion in fine beach sediment. It is slightly and uniformly bleached; the groundmass appears pale green in color and the quartz and feldspar phenocrysts are readily apparent. The projectile point shown in Figure 17 exhibits no surface sheen and little evidence of beach rolling. It is slightly but differentially bleached; the groundmass colour of the obverse face is paler green, in contrast to the darker green of the reverse face. The phenocrysts are readily apparent on both faces. The biface shown in Figure 22 is moderately bleached over most of its surfaces; however, the bleaching is differential, with the obverse face somewhat paler green than reverse face. Moreover, both faces exhibit blue-green patches, in the deeper portions of flake scars, where the groundmass is much less bleached. Also, the bleaching of this biface is restricted to the near-surface; the phenocrysts are readily apparent and the blue-green groundmass colour is visible through the clear quartz phenocrysts, giving the artifact a speckled appearance. Similarly, the biface thinning flake shown on the right in Figure 47 is moderately bleached; the groundmass colour is only partly obscured and is clearly visible through the quartz phenocrysts. In contrast, the small secondary flake shown on the left in Figure 47 is strongly bleached to a porcelain-white colour. The original blue-green of the groundmass is completely obscured, perhaps through the entire thickness of the piece. This flake can be confidently identified as KTMP, but only through a microscope where quartz phenocrysts reflecting the bleached white color and rectangular voids resulting from weathered-out feldspar phenocrysts are visible. Taken together, I interpret these observations as indicating that much bleaching of artifacts occurred before they were eroded onto Rum Beach.

Clearly, some artifacts from the Rum Beach assemblage have been on the beach longer than others. They range from slightly (Figure 2, 9, 14) to moderately (Figure 15, 16, 18) to strongly and extremely (Figures 45, 47) beach rolled. The process of beach rolling of artifacts in intertidal assemblages deserves more attention than it has received to date. For example, it would be useful to devise a set of criteria for classifying degrees of beach rolling on artifacts. Mapping artifacts and correlating the maps to degree of beach rolling might reveal patterns pointing to the locations of artifacts still *in situ*.

I have not been able to systematically undertake this sort of analysis for Rum Beach, but from my own experience and the anecdotal accounts of others it seems that artifacts recovered near the intertidal creek are generally less beach rolled than those recovered further from the intertidal creek. This suggests that most artifacts at Rum Beach are initially eroded into the creek and subsequently distributed across the beach by current and wave actions.

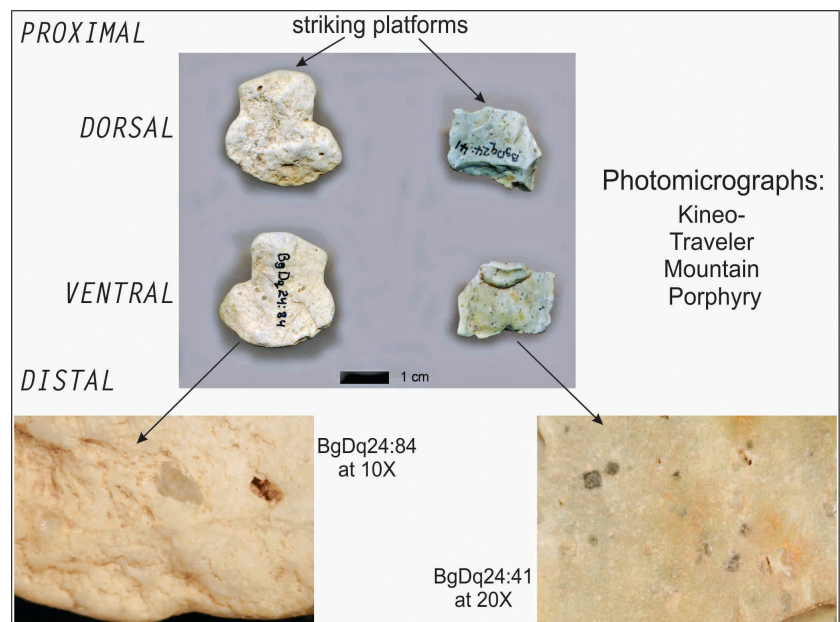


Figure 47: Two small tertiary flakes made of KTMP (BgDq24:41, 84).

⁶¹ I have seen centuries-old KTMP artifacts from shell midden contexts (where soil acids are buffered by calcium carbonates) that appear as brightly blue-green as if they had just been flaked from freshly quarried stone. I also have seen millennia-old KTMP artifacts from strongly acidic soil contexts so weathered that the groundmass has been bleached to a chalky color and texture and most feldspar and quartz phenocrysts weathered out.

Summary

Rum Beach is located on the northwestern margin of a salt marsh that bisects the northeastern Bliss Island. The beach is exposed in a westerly direction onto Bliss Harbour (Figure 48). The salt marsh and the beach have formed in a low area between outcrops of conglomerate bedrock; sea level rise and tidal action are causing the beach to migrate across the marsh, gradually destroying it in the process. The Rum Beach archaeological site consists, in part, of a scatter of prehistoric artifacts eroded onto the beach as a result. The marsh began forming about 3000 years ago; before that time, Indigenous people apparently inhabited a land surface now sandwiched between the marsh peat deposit and the gravel deposit beneath the marsh. Erosion brought prehistoric artifacts from this buried land surface onto the beach, where avocational and professional archaeologists were able to identify and collect them.

The Rum Beach assemblage is an archaeological palimpsest⁶² of several historical episodes. One artifact (a grooved cobble) indicates occupation of the Rum Beach area as early as the Middle Archaic period. Several artifacts (bipolar cores and flakes of exotic cherts) are similar to those recovered from Late Maritime Woodland components on the Bliss Islands. And, as at many other archaeological sites in the Quoddy Region, Euro-Canadian artifacts occur side-by-side with stone tools at Rum Beach.

Most temporally diagnostic stone tools from Rum Beach resemble those associated with assemblages dating to the Terminal Archaic period and the Terminal Archaic–Maritime Woodland transition (about 4100–2700 years ago) in the Maine/Maritimes area and in southern New England. These include stemmed and fishtailed projectile points, pentagonal projectile points, drill bits, and a flaked and ground axe blade. These artifacts are made from lithic materials commonly associated with Terminal Archaic technology elsewhere in the coastal Northeast (e.g., Boudreau 2016; Doyle 1995). The Rum Beach assemblage also includes examples of technologies that are less commonly recognized and more enigmatic—cortical spall tools, flake/blades and sizeable utilized flakes. Taken together, these finds indicate that Rum Beach represents a type of archaeological site not recognized or recorded during the ASNB-sponsored coastal surveys of the 1970s to 1990s.



Figure 48: Viewscape from Rum Beach southwest toward Bliss Harbour and the entrance to Fishermans Cove at low tide. Note the intertidal ledge extending offshore; this is where the seals hauled out during the 1980s.

⁶² Here “palimpsest” refers to a collection of archaeological artifacts that are spatially associated but are not all culturally and/or chronologically related; rather, they have come together by accident or through natural processes. The Rum Beach assemblage is, in Geoff Bailey’s (2007:205–206) terms, a cumulative palimpsest of considerable time depth but of relatively low resolution. The original (literary) meaning of palimpsest is a manuscript on which later writing has been superimposed on effaced earlier writing (see <http://www2.iath.virginia.edu/elab/hfl0243.html>).

Other Bliss Islands Intertidal Sites

The Rum Beach site is not unique on the Bliss Islands. In the course of investigating it my colleagues and I discovered two other intertidal sites.

The Pocket Beach Site. The Pocket Beach site (BgDq27) was discovered in 1999 (Figure 49) during a surface collection of the Rum Beach site. I took two students with me to search the shoreline segment ca. 50 m southwest of Rum Beach on the same side of the northeastern Bliss Island (Figure 6). Within a few minutes we found a small flake (Figure 50) in the upper intertidal zone. I left the students there with instructions to examine the rest of the intertidal zone as it was revealed by the receding tide.

The students did something that I probably never would have done—they walked the length of the beach kicking over the bands of rockweed that had been stranded near the high water line after a recent storm (Figure D1).⁶³ In so doing, they discovered a triangular biface of bleached dark volcanic (Figure 51). Further down the foreshore they found a quartzite cortical spall tool (Figure D2). The site has been surface collected four times subsequently by professional archaeologists, students and avocational archaeologists. Several additional artifacts have been recovered.

I decided that these finds were sufficiently distinct from the Rum Beach assemblage to warrant a separate designation and completed a MARI report on the Pocket Beach site (Black 2000c). This site's configuration is similar to Rum Beach—a cove with an unconsolidated gravel substrate at a steep gradient eroding a salt marsh between conglomerate bedrock outcrops—but on a much smaller scale and lacking a significant drainage channel. Like Rum Beach, Pocket Beach is exposed to the west and northwest onto Bliss Harbour.



Figure 49: The Pocket Beach site (BgDq27) near high tide.

⁶³ Rockweed strandlines are yet another impediment to closely examining Quoddy Region intertidal zones for archaeological artifacts. They tend to be thoroughly unpleasant—viscous, rancid, malodorous and alive with beach fleas and other disconcerting littoral lifeforms. In fact, rockweed strandlines always remind me of one of the idiosyncratic descriptors H.P. Lovecraft used in his Cthulu Mythos stories: “putrescent ichor.”

The artifact assemblage from the Pocket Beach site consists of 11 items of flaked stone (3 bifaces, 1 projectile point, 1 cortical spall tool, 1 bipolar core fragment and 5 flakes):

- A secondary flake (BgDq27:1) made of dark blue-green aphanitic volcanic, somewhat porphyritic or vesicular (Figure 50). M = 10.0 g. The lateral and distal margins exhibit continuous bifacial microflaking. The flake is moderately beach rolled and is bleached all over except in the deepest parts of microflake scars. This suggests that the microflaking occurred before burial and exposure on the beach.

- A triangular biface (BgDq27:2) made of dark aphanitic volcanic with some indication of flow banding (Figure 51). There are some reddish-brown (organic?) stains, especially on the obverse face. The flaking pattern is random. L = 8.27 cm; W = 4.33 cm; T = 0.73 cm; M = 25.8 g. This artifact is moderately beach rolled and strongly bleached on all surfaces. It exhibits straight blade margins, a slightly convex base and somewhat rounded tip. It is similar to Meadowood cache blades, a widely distributed horizon style dating to the Early Woodland period (Clermont and Chapdelaine 1982:59; NYNE, WTPP), except that it is larger than most (SOPP). A few similar artifacts have been reported from Early Maritime Woodland sites in the Maine/Maritimes area (Blair 2004:257; McEachen 1996; McEachen et al. 1999).

- A cortical spall (BgDq27:3) made of purple-brown quartzite (Figure D2);⁶⁴ the cortex on the obverse face is brownish, exhibiting overlapping Hertzian cone fractures, while the ventral face is darker and more purple. L = 9.46 cm; W = 5.97 cm; T = 1.85 cm; M = 132.2 g. The distal margin may be modified, possibly exhibiting faint use-wear, but this has been obscured by beach rolling.

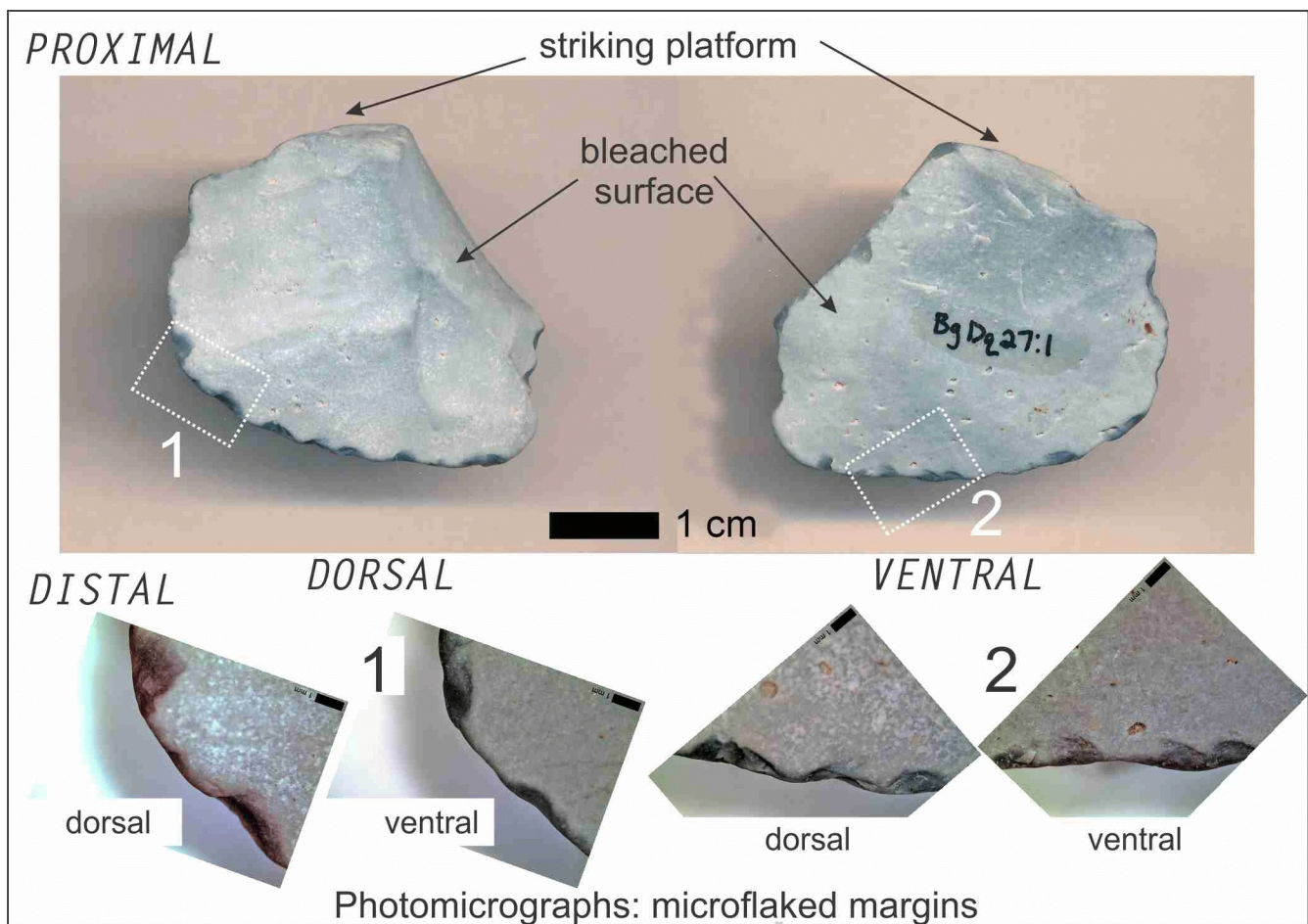


Figure 50: Secondary flake of dark volcanic (BgDq27:1) showing marginal microflaking partly obscured by beach rolling and bleaching.

⁶⁴ Additional artifacts from the Pocket Beach site are shown in Appendix D.

- A side-notched projectile point (BgDq27:10) made of white, waxy, cryptocrystalline material (Figure 52). L = 5.08 cm; W = 1.74 cm; T = 0.80 cm; M = 6.37 g. This projectile point exhibits a narrow side-notch, convex blade margin, salient shoulder and convex base on the left lateral margin. The right lateral margin of the artifact is missing; it has been split away by an orthogonal, burin-spall fracture initiated at the tip of the artifact. This type of damage, sometimes called “impact burination,” is consistent with the artifact having been used to tip a projectile (Whittaker 1994:163–165). The white colour does not appear to result from bleaching. The material is probably a chert and may be exotic to the Quoddy Region; it is not consistent with the most commonly identified exotic cherts in Quoddy Region assemblages (Washademoak Multi-coloured Chert, Minas Basin Multi-coloured Chert and Munsungun Red & Green Chert). In shape and size, it is very similar to Meadowood side-notched projectile points dating to the Early Woodland period elsewhere in the Northeast (Boudreau 2016:110; DAIM, NEPP, NYNE, SOPP, SNEP). Comparable projectile points have occasionally been reported from Early Maritime Woodland period sites in the Maine/Maritimes area (McEachen 1996).

- A somewhat irregular, oval-pointed biface (BgDq27:8) made of partially bleached aphanitic volcanic (Figure D3). L = 6.05 cm; W = 4.89 cm; T = 1.32 cm; M = 51.9 g. The material consists of alternating bands and veins of bleached white and variegated green, different from any other flaked stone material observed on the Bliss Islands. The artifact is moderately beach rolled.

- A secondary flake (BgDq27:4) made of translucent grey quartzite with red staining and banding. M = 5.1 g. The edges and arrises are unmodified. It was found eroding from soil over a rock outcrop adjacent to Pocket Beach.

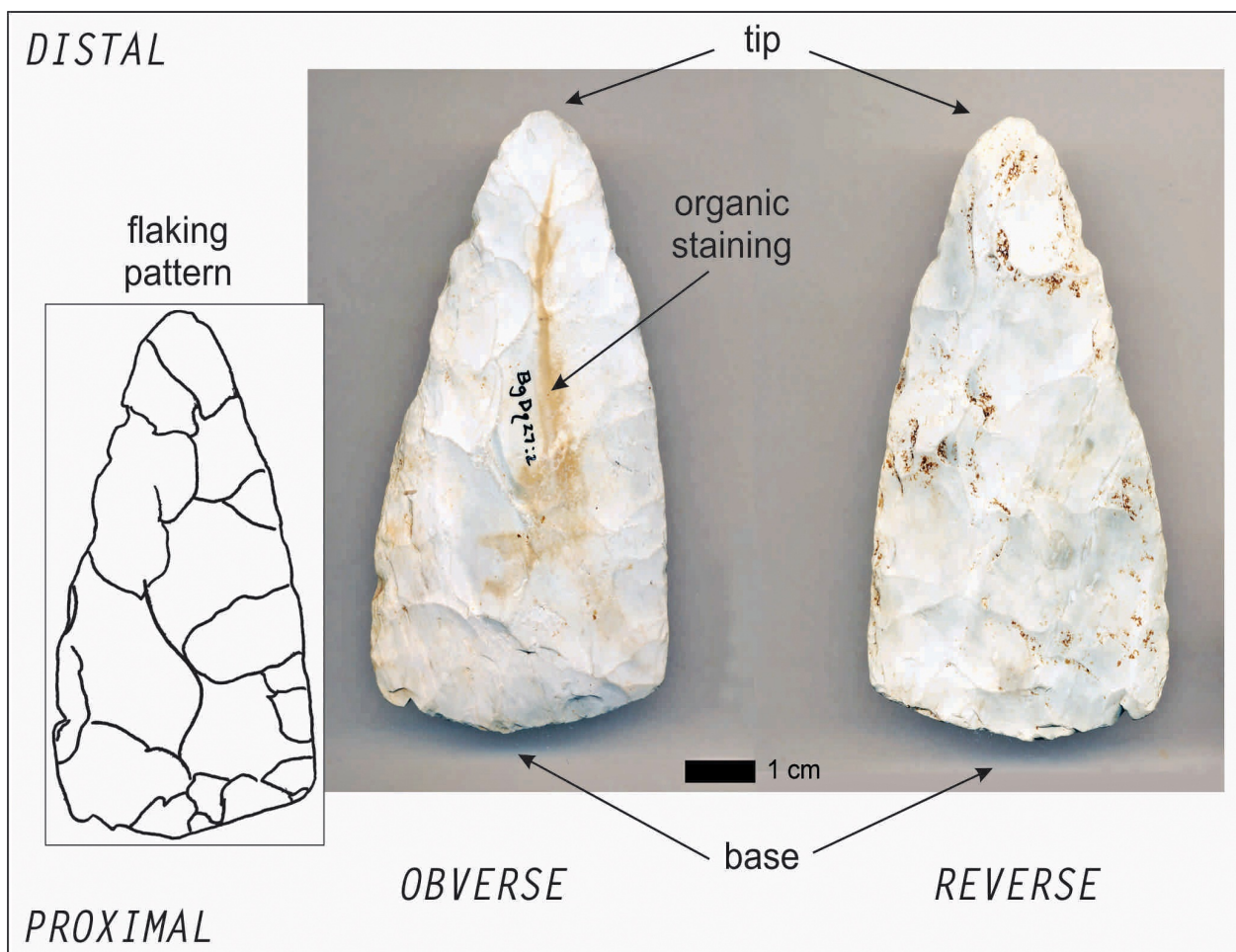


Figure 51: Triangular biface made of bleached volcanic material (BgDq27:2). Note the random flaking pattern (line drawing: K. Palmer).

- A secondary flake (BgDq27:5)—probably a biface reduction flake—made of blue-green aphanitic volcanic. M = 6.9 g. It is bleached similarly to BgDq27:1 and exhibits brown staining similar to BgDq27:2. This artifact is slightly beach rolled.

- A small primary flake (BgDq27:6) made of bleached greenish aphanitic volcanic. M = 0.8 g. The striking platform is more bleached than the other surfaces, suggesting that it is cortical. It is slightly beach rolled.

- A split pebble (BgDq27:7) made of translucent bull quartz. M = 8.1 g. This artifact superficially resembles some Late Maritime Woodland scrapers but probably is a bipolar core fragment.

- A secondary flake (BgDq27:9) made of dark aphanitic volcanic. M = 14.7 g. It is moderately beach rolled; the lateral and distal margins are microflaked.

- The midsection of a lanceolate biface (BgDq27:11) made of dark aphanitic volcanic. M = 17.1 g. There are transverse fractures at both ends. It is moderately beach rolled.

Figure D4 shows the lithic material distribution for the Pocket Beach site on a graph similar to that used for Rum Beach (Figure 42). The Pocket Beach assemblage is dominated by quartzites and aphanitic volcanics, some bleached. In this respect and some others, including the microflaked margins of some flakes, it resembles the Rum Beach assemblage. However, the two temporally diagnostic artifacts, the projectile point and the complete biface, both resemble types associated more with the earlier part of the Early Woodland than with the Terminal Archaic period. Thus, I infer that the temporal range of the Pocket Beach assemblage is somewhat later than the Rum Beach assemblage, in the Terminal Archaic–Maritime Woodland transition, but still predating the earliest land-based assemblage at the Weir site.

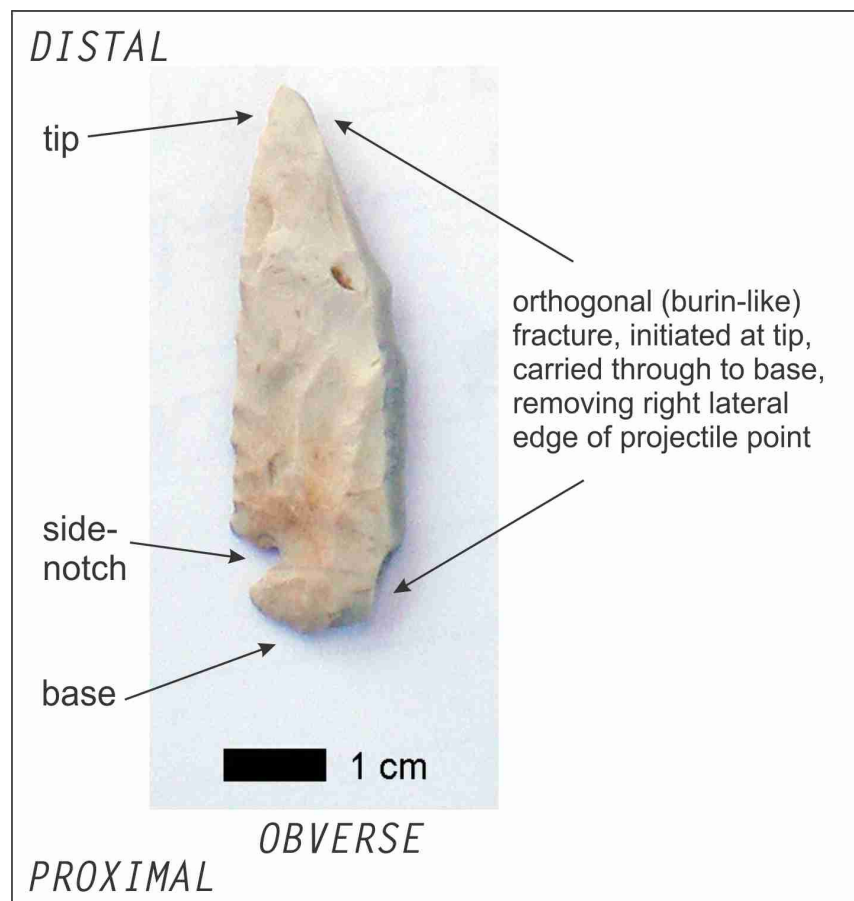


Figure 52: Obverse face of the side-notched projectile point made of chert (BgDq27:10). Note the probably use-related fracture on the right lateral margin.

The Seebeskok Site. After some of my colleagues found prehistoric artifacts in the intertidal thoroughfare between the northeastern and central Bliss Islands (Figure 6), I completed a MARI report (Black 2004a) and the location was designated the Seebeskok site (BgDq33). The thoroughfare is inundated at high water during all tidal cycles.⁶⁵ It is oriented on an northeast–southwest axis between Fishermans Cove and Spider Cove and is exposed in those directions but sheltered to the north by tree-covered conglomerate outcrops. The highest part of the intertidal thoroughfare, where the artifacts were found, is at about the same topographic level as the base of the marsh peat. From this point, the intertidal zone slopes northeastward toward the intertidal peat and Spider Cove, and southwestward toward a large tide pool (Black 2000b:147) and Fishermans Cove. Probably, this area supported a meadow/marsh complex bordered by conglomerate outcrops before it was eroded and inundated by rising sea levels. It may have been completely overridden by the tides as recently as the mid-19th century (Black 2000b:148).

The artifacts were found on a mixed substrate surface dominated by small bedrock outcrops, cobble and pebble lag deposits and gravelly mud (Figure 53). Rockweed cover is light and sporadic. My colleagues and I have walked through this area dozens of times over several decades, but artifacts were found on only one occasion.

The artifact assemblage from the Seebeskok site consists of three items of flaked stone:



Figure 53: The Seebeskok site (BgDq33) looking toward the Weir site and Spider Cove.

⁶⁵ “Seebeskok” is the Peskotomuhkati name for the Bliss Islands. One interpretation of the meaning is “high tide flows through it” (Rayburn 1975:57). This seems a particularly appropriate name for a site located in an intertidal thoroughfare. Note, however, Ganong’s (1896) quite different translation of Seebeskok: “three peninsulas.”

- A very large primary flake made of dark aphanitic volcanic (Figure 54). L = 15.52 cm; W = 9.22 cm; T = 4.81 cm; M = 663.5 g. This is the largest flake tool—indeed, the largest piece of flaked stone—recovered from the Bliss Islands. It exhibits an unfaceted striking platform and a sinuous dorsal arris nearly parallel to the long axis. The left lateral margin is convex, while the right lateral is concave. Two portions of the lateral margins appear to have been intentionally unifacially retouched (ventral–dorsal). When found, this artifact had small rockweed plants anchored to the cortical part of its dorsal surface. There are slightly bleached patches on both faces. In comparison to the other two artifacts found at the Seebeskok site, this flake exhibits little evidence of beach rolling, probably because its considerable mass and flat ventral face kept it relatively stable in the intertidal zone.

- The basal portion of a triangular biface made of dark aphanitic volcanic (Figure E1).⁶⁶ L = 4.33 cm; W = 2.78 cm; T = 0.67 cm; M = 11.5 g. The biface was truncated by a transverse fracture oblique to the long axis. It exhibits bifacial retouch on both lateral margins, but has been so heavily beach rolled that the flake scars are nearly obliterated.

- A cortical spall tool made of medium-grained, yellow-brown quartzite (Figure E2). L = 9.09 cm; W = 5.36 cm; T = 1.69 cm; M = 104.3 g. This artifact has been moderately beach rolled. Both lateral margins were bifacially retouched.

The artifact forms and lithic material types (Figure E3) represented in the Seebeskok assemblage are similar to some of those recovered from the Rum Beach site. They probably represent a completely eroded site contemporaneous to the Rum Beach Terminal Archaic component.

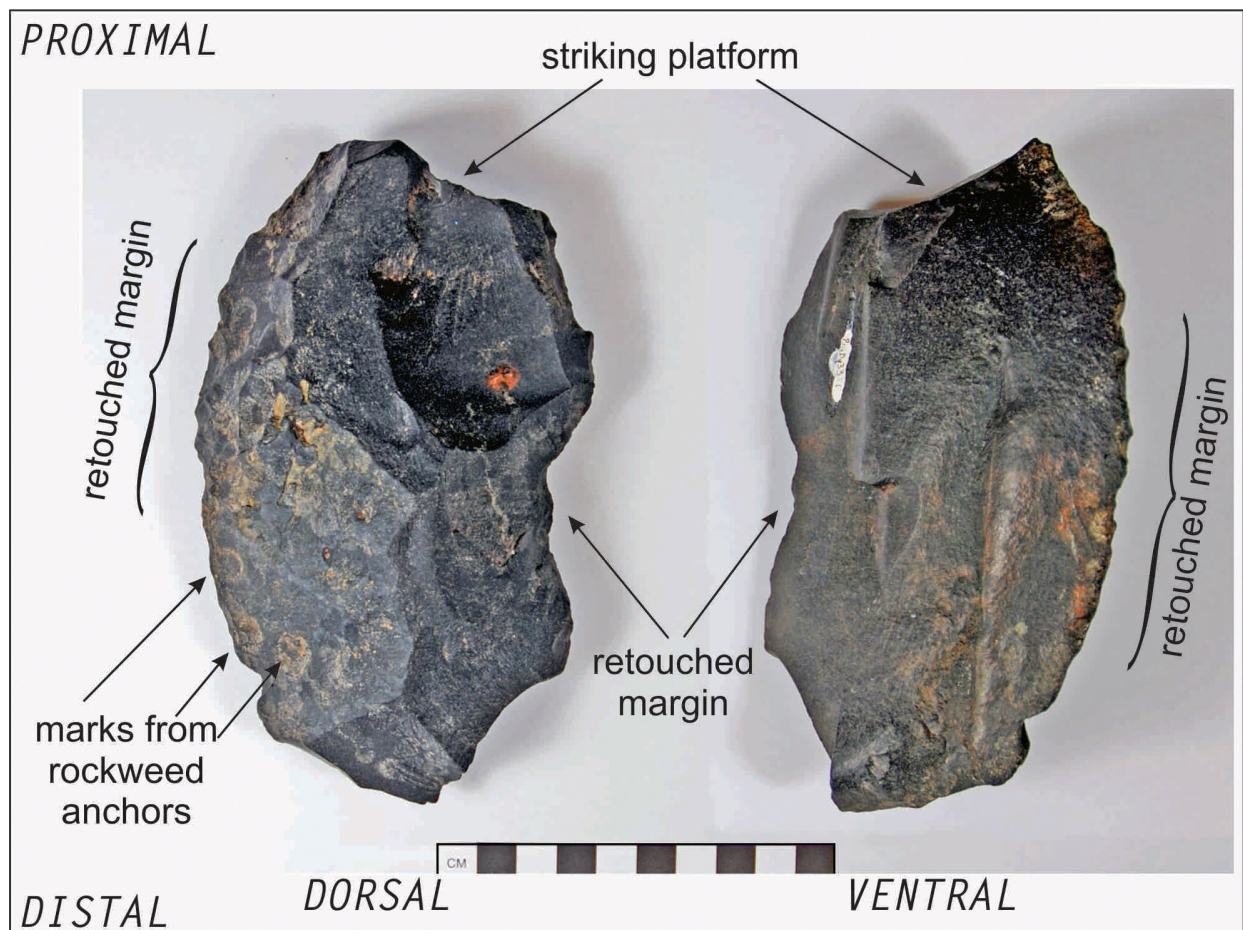


Figure 54: Very large primary flake made of dark volcanic material (BgDq33:1).

⁶⁶ Additional artifacts from the Seebeskok site are shown in Appendix E.

Other Quoddy Region Intertidal Sites

The Rum Beach site is not unique in the Quoddy Region; soon after I began investigating it, avocational archaeologists brought similar sites and assemblages to my attention. Several of these—I have deliberately selected those most resembling Rum Beach—are described briefly below. Thus far only one of them, the Deer Island Point site, has been studied in detail.

Deer Island Point. The Deer Island Point site (BfDr5) is the first archaeological site I examined in NB. Early in the summer of 1981, I traveled to the province to work on the Partridge Island Archaeology Project (Bishop and Black 1988), directed by Jennifer Bishop and funded by ASNB. While conducting the Partridge Island research, Bishop's crew, myself included, lived for three months at the Deer Island Point campground.⁶⁷ The Deer Island Point site, recorded by Davis and Ferguson (1980a), is located nearby, just across the Deer Island–Campobello Island ferry landing from the campground. We examined the eroding edges of the site several times during that summer and found some artifacts there, but at that time it did not occur to us to look for artifacts in the adjacent intertidal zone.

Time passed and I went on to other projects; then, about 2000, avocational archaeologists on Deer Island—in particular, Bob Bosien—brought collections of artifacts from the Deer Island Point site to my attention. I jumped at the opportunity to become reacquainted with the site and recruited UNB graduate student Drew Gilbert to study it. In 2005, Gilbert conducted testing of the remaining land-based portion of the site with support from UNB and ASNB. Over the next several years he completed an analysis of the excavated materials and avocational collections and wrote a thesis (Gilbert 2011) showing that the area was inhabited over a period of at least 4000 years. Most of the stone tools that Gilbert analyzed date to the Maritime Woodland period and he interpreted the site as a way-point on a short portage route across Deer Island Point that allowed prehistoric canoe travelers to bypass the Old Sow Whirlpool⁶⁸ between Deer Island Point and Moose Island/Eastport.

The Deer Island Point site is located in a broad cove exposed to the east and the south, on the east side of Deer Island Point, a peninsula projecting southeastward from the southern end of Deer Island. The southern margin of the cove is stabilized by roadway maintenance to provide access to the ferry landing and the campground. The extreme northern margin of the cove is an east–west oriented, bedrock-cored shoreline segment; it is along this shoreline that the remaining land-based archaeological deposits are eroding. The cove itself consists of a basin-shaped intertidal zone dominated by unconsolidated coarse- to medium-sized gravel substrates with some bedrock pinning. Artifacts have been recovered over much of its surface. At the head of the cove the shoreline grades into a northwest–southeast oriented marshy area that straddles the narrowest portion of Deer Island Point. The marsh is drained by small creeks that flow into the cove on the east side of the point.

On the west side of Deer Island Point the marshy area is bordered by a smaller cove exposed to the west and northwest. Peat deposits are exposed in the intertidal zone and Bob Bosien found a Late Archaic ground stone axe blade made of greenstone tuff (Gilbert 2011:147; Gilbert et al. 2007b) associated with this peat. On the east side of the marsh, the peat is usually buried beneath unconsolidated sediments deposited during high water events. However, during extreme erosional events, the creeks cut through the beach sediments and peat bringing stone tools to the surface. Some of these artifacts—including several Broadpoints (Gilbert 2011:132–134) and some ground stone axe blades presumably from beneath the peat (Bob Bosien 2017: pers. comm.)—date to the Terminal Archaic period.

⁶⁷ That three-month sojourn, my first visit to NB and my introduction to the Quoddy Region, led to my conviction to invest a substantial portion of my academic career into creating knowledge about the past of this remarkable area.

⁶⁸ See, e.g., Bay of Fundy, <https://www.bayoffundy.com/about/old-sow-whirlpool>

Casco Bay Island. The Casco Bay Island site (BfDr18) was brought to my attention by avocational archaeologists in the early 1990s. I visited the site in 1995⁶⁹ and completed a MARI report (Black and Blair 1995). The site is located on a small island in the midst of Head Harbour Passage between Deer and Campobello islands. The long axis of Casco Bay Island is oriented north–south. A low marshy area between two bedrock-cored, tree-covered knolls forms a narrow neck toward the northern end of the island. The marsh itself is oriented roughly west–east.

In structure and exposure the Casco Bay Island site is strikingly similar to Rum Beach. At the western end of the marsh a broad, shallow cove is exposed to the west and northwest. At the eastern end of the marsh a narrower, deeper cove between steep rock outcrops is exposed to the northeast. Both coves have mixed substrate intertidal zones, with fringes of unconsolidated beach sediments adjacent to the high water lines; both beaches are bedrock pinned and both intertidal zones are partly sheltered by small islets and ledges immediately offshore. The marsh is covered by low vegetation and drained by a small creek emptying into the western cove. The subsurface structure of the marsh has not been investigated.

Figure 55: Triangular flake with marginal microflaking and large stemmed Broadpoint from the Casco Bay Island site (BfDr18).



⁶⁹ I was accompanied on this foray by my colleague Susan Blair (then a UNB graduate student), and by Bob Bosien (then skipper of the UNB research vessel *Mary O*). It was a memorable trip in a small open boat: shredded clouds pierced by shafts of sunlight, squalls and swells, wheeling sea birds, a grey seal poking its head up within an oar's length of the boat, a 30-foot climb in a full gale up an algae-encrusted metal ladder to the top of a wharf (and later, of course, the climb back down) and a classic archaeological picnic lunch on the blasted verge of a marsh at low tide, sandwiches seasoned with shell hash and salt spray. Paradise!

The archaeological contents of the Casco Bay Island site are known only from large numbers of lithic artifacts collected in the intertidal zones. The artifacts have been found at both ends of the marsh, but predominantly at the western end. There may be *in situ* artifacts beneath the marsh, but apparently much of the original site has been eroded away.

Temporally diagnostic artifacts are predominated by Terminal Archaic types—Broadpoints, large bifaces, drill bits, grooved axe blades and marginally modified flakes. Two examples are shown in Figure 55: A relatively large, near-triangular secondary flake made of flow-banded aphanitic volcanic. L = 5.21 cm; W = 4.45 cm; T = 0.71 cm; M = 13.9 g. It exhibits ventral–dorsal microflaking on all margins except the striking platform. A very large Broadpoint made of dark aphanitic volcanic, with an asymmetrical stem–shoulder configuration and a straight stem with a contracting base. L = 6.83 cm; W = 5.64 cm (at shoulders, the widest point); T = 1.17 cm; NW = 2.30 cm; SL = 2.10 cm; M = 36.2 g. The asymmetrically retouched blade suggests that this artifact functioned as a hafted knife blade. A large grooved ground stone axe blade from the site is shown in Figure 56. L = 22.80 cm; W = 10.70 cm; T = 5.15 cm; M = 1814.4 g.⁷⁰

In addition to the Terminal Archaic artifacts, a few Late Archaic artifacts and a range of Maritime Woodland artifacts have been recovered from Casco Bay Island. The number and diversity of these finds indicate that a substantial archaeological site, inhabited over a long period and perhaps on the scale of the Turner Farm site at the mouth of the Penobscot River (Bourque 1995), once existed in Head Harbour passage. The Casco Bay Island site is worthy of a comprehensive thesis-length study comparable to that produced by Gilbert (2011) for the Deer Island Point site.

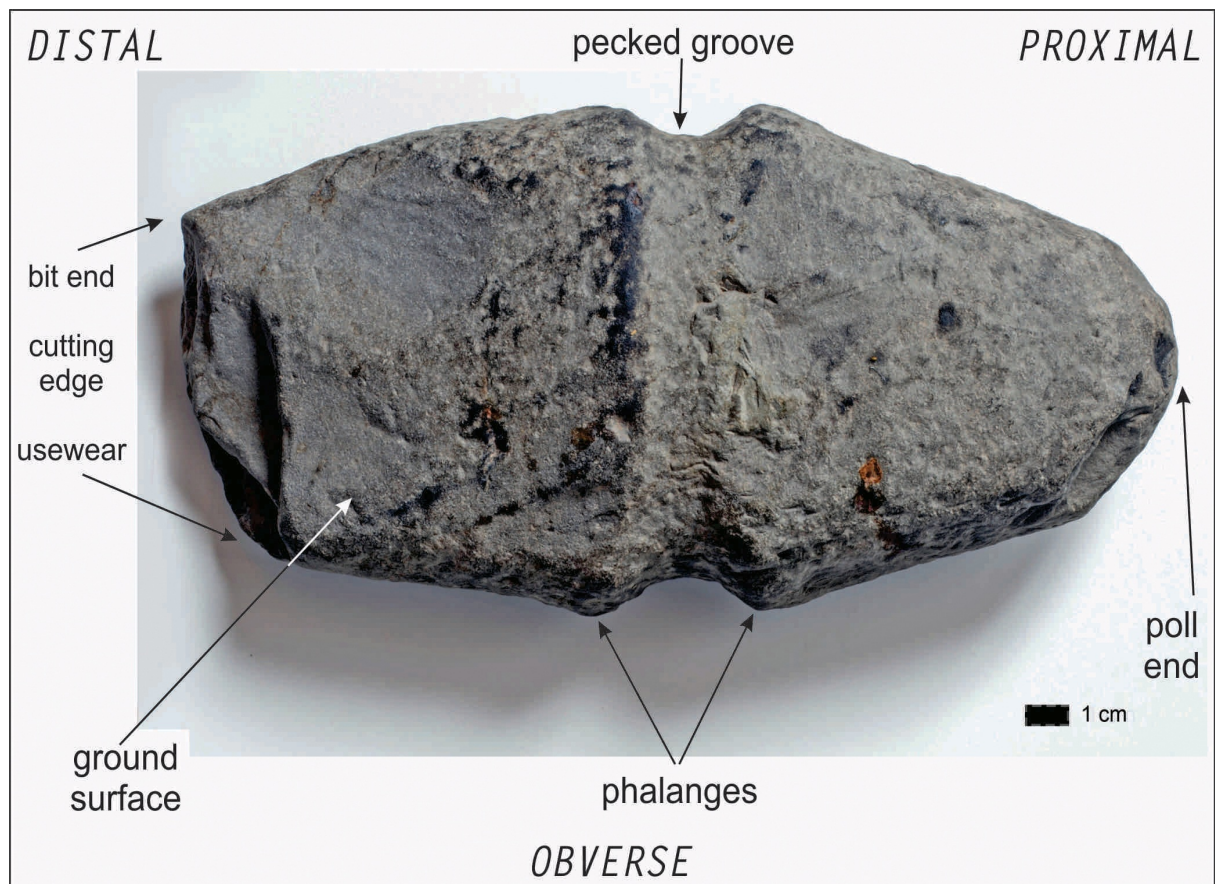


Figure 56: A grooved axe blade from Casco Bay Island.

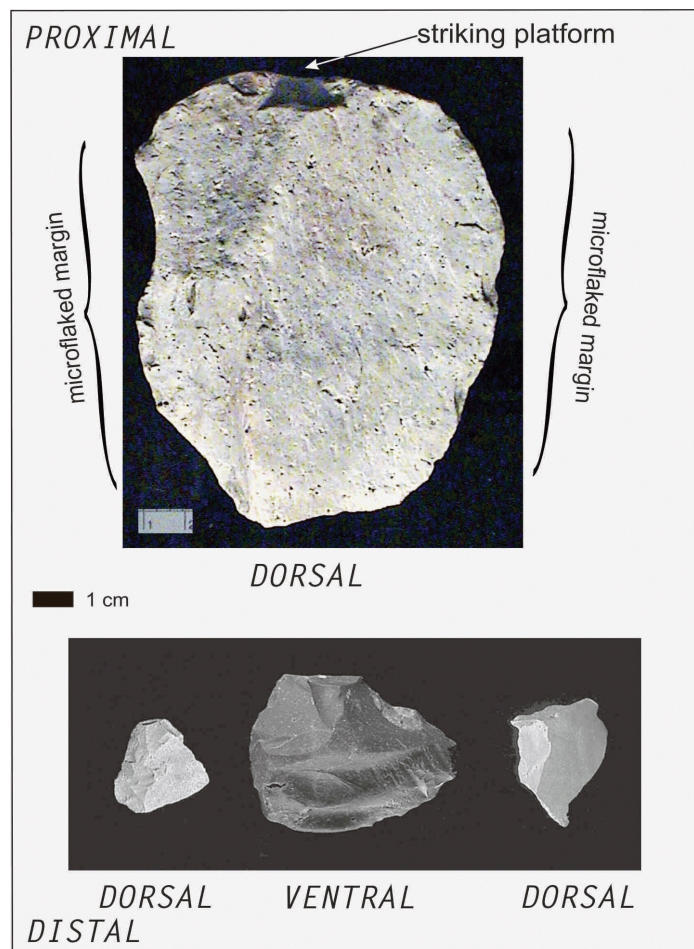
⁷⁰ Bourque (2012:67) illustrated how this type of grooved axe blade may have been hafted. Campbell (2016:104) reported a grooved axe blade from NS with remarkably similar usewear on the cutting edge.

Wallace Cove. The Wallace Cove site (BgDq29) was discovered in 2002 when Brent Suttie found flaked stone artifacts in the intertidal zone adjacent to the parking lot and recreation area at the Blacks Harbour terminus of the Grand Manan ferry route. He subsequently completed a MARI report on the site (Suttie 2003). Soon after, the Wallace Cove area was subject to an environmental impact assessment in the lead-up to building a new ferry wharf. Archaeological testing was conducted and a Late Maritime Woodland feature was discovered on a rock outcrop near where the intertidal artifacts had been found. I was contracted to analyze the lithic artifacts from the site (Black 2003). The feature was subsequently excavated and reported by Suttie (2015; see also Hrynick and Black 2016:41).

The site is located on the east side of the mouth of Blacks Harbour, on a northeast–southwest oriented shoreline segment exposed to the northwest. It consists of a mixed substrate intertidal zone with a fringe of unconsolidated sandy gravel at the high water line. It is partly bedrock pinned and partly sheltered by islets and ledges immediately offshore. A low area extends inland from the shoreline; this appears to have been a marsh that was filled when the parking lot and recreation area were developed. Testing in this area suggests there may be artifacts *in situ* beneath the fill and organic sediments (Black 2003).

There are no temporally diagnostic formal tools among the ca. 40 pieces of flaked stone recovered from the intertidal zone at Wallace Cove. However, the intertidal assemblage resembles the Rum Beach assemblage—it is dominated by bleached and dark aphanitic volcanics, Apple-Green Glassy Rhyolite and Kineo-Traveler Mountain Porphyry—and strongly contrasts with the Late Maritime Woodland assemblage from the nearby feature, which is dominated by brightly coloured exotic cherts (Black 2003). Among the artifacts from the intertidal zone are cores, flake/blades and flakes, including a large (M = 323.7 g) Kineo-Traveler Mountain Porphyry flake with marginal microflaking (Figure 57).

Figure 57: Large flake with marginal microflaking made of Kineo-Traveler Mountain Porphyry and three smaller flakes from the Wallace Cove intertidal zone (BgDq28).



Kellys Cove. Kellys Cove is located on the west side of the northeast–southwest oriented causeway that connects Greens Point to the Letete Peninsula. It is a broad cove with a mixed substrate intertidal zone and a fringe of coarse unconsolidated sediment, exposed to the west and northwest. The sediments are partly bedrock pinned. The narrow isthmus upon which the causeway was constructed would be partially intertidal in the absence of roadway maintenance and artificial reinforcement of shorelines to protect houses and infrastructure. In the past, when sea levels were lower, this isthmus probably was an expanse of salt marsh.

A land-based archaeological site (BgDr57) was registered at Greens Point by Davis and Ferguson (1981). This site reportedly bordered on the smaller unnamed cove exposed to the southeast on the east side of the isthmus opposite Kellys Cove. It was described as an eroding shell-bearing site on a rock outcrop; no artifacts were found. No obvious indications of this site remain; it may have eroded away completely or may be covered by fill and riprap.

The Kellys Cove site was brought to my attention by avocational archaeologists and through my affiliation with the Greens Point Light Association. Beginning in the 1990s, a series of local residents showed me pieces of flaked stone found on nearby shorelines. It is not clear that these were associated with the recorded site. More recently, Kellys Cove has been subjected to increased boat traffic because of aquaculture development in the area. This may have increased the exposure of artifacts buried beneath the intertidal sediments. Some of the artifacts definitely date to the Terminal Archaic period, including the Mansion Inn- and Orient Fishtail-style projectile points shown in Figure 58. The Kellys Cove site also is worthy of a comprehensive thesis-length study.

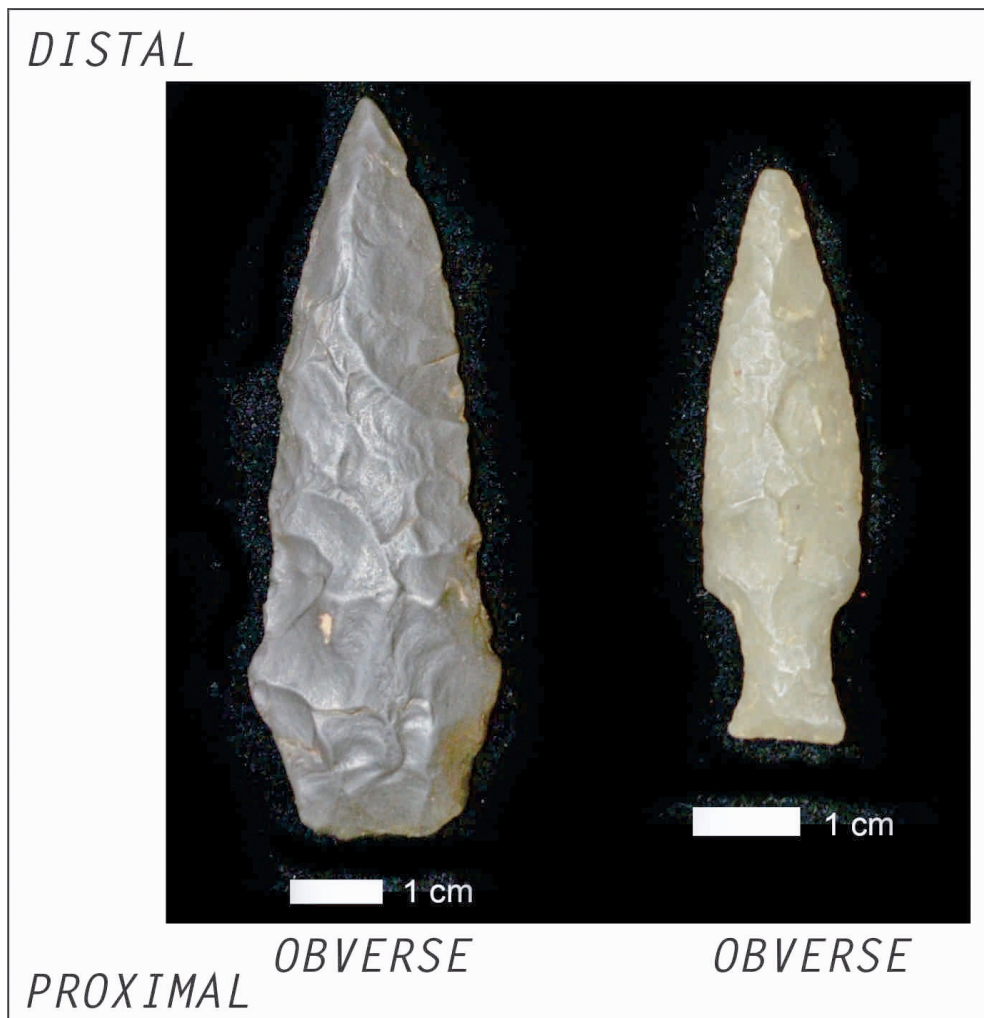


Figure 58: Mansion Inn-style (left) and Orient Fishtail-style (right) projectile points (photos: A. Pelletier-Michaud) from the Kellys Cove intertidal zone.

Hardwood Island. Another place where Terminal Archaic artifacts have been found is Hardwood Island, just offshore from Stuart Town on Deer Island. The bulk of Hardwood Island is an west–east oriented, bedrock-cored knoll covered by forest. At its eastern end a narrow crescent-shaped, north–south oriented gravel beach, pinned at its northern and southern ends by bedrock outcrops, is exposed to the east. This beach is separated from the bulk of the island by a northward exposed cove that leads into an intertidal pond. The pond fills and drains through an intertidal creek that connects the pond and the cove through a marshy area. The marsh, pond and cove appear to be remnants of a formerly more extensive, relatively level landform underlain by unconsolidated gravelly sediments. This landform probably extended offshore to the Hardwood Island Ledges. A peat deposit that apparently formed when this landform was above the tidal range is exposed on the eastern erosional face of the beach.

Artifacts have been found in the vicinity of the peat exposure, including the two Broadpoints shown in Figure 59. Both are made of dark aphanitic volcanics and both are only slightly beach rolled; neither is bleached. The Broadpoint on the left exhibits convex blade margins, a random flaking pattern, rounded shoulders, moderate stem–shoulder asymmetry and a short stem with parallel margins and contracting base. L = 12.24 cm; W = 5.47 cm; T = 1.52 cm; M = 64.4 g. It bears some resemblance to Early Woodland/Andena-style contracting-stemmed projectile points (Boudreau 2016:111). The Broadpoint on the right exhibits straighter blade margins, a random flaking pattern, pointed shoulders, pronounced stem–shoulder asymmetry and a rectangular stem with parallel margins and straight base. L = 11.36 cm; W = 4.71 cm; T = 1.21 cm; M = 61.1 g. It resembles large Atlantic-style broadpoints from New England (Boudreau 2016:84–87).

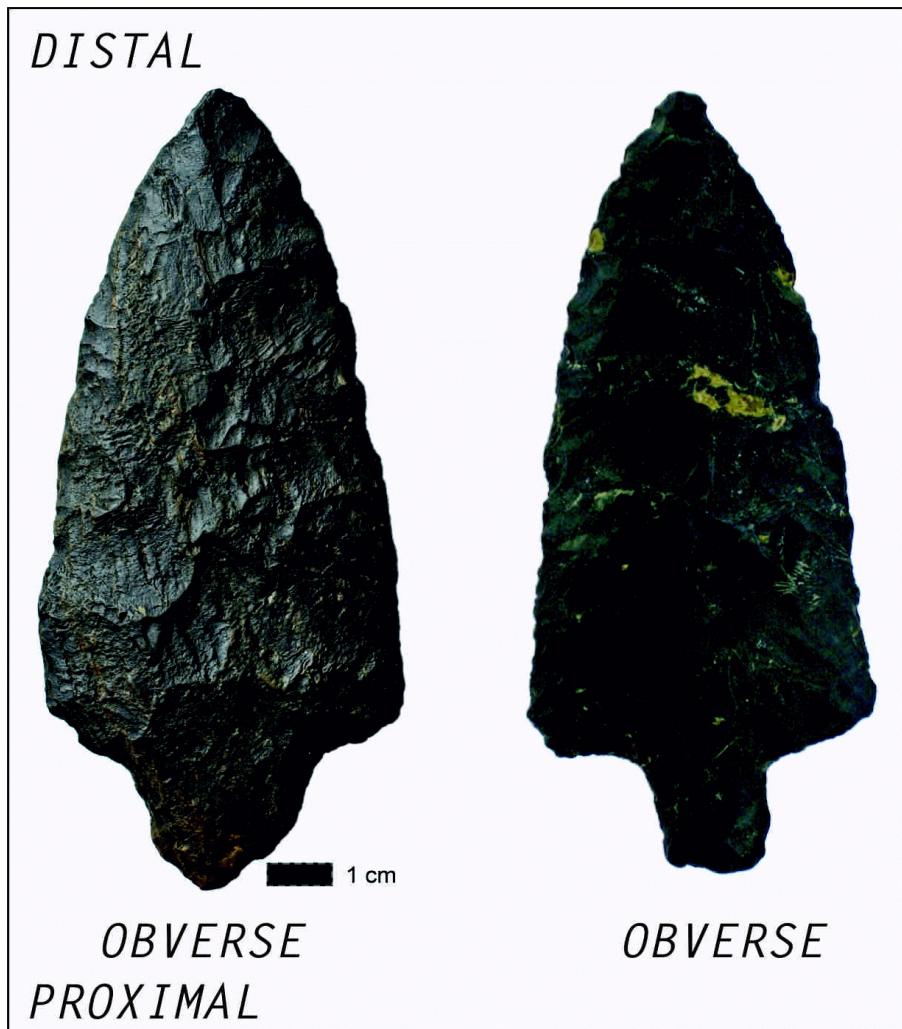


Figure 59: Broadpoints from the Hardwood Island intertidal zone (image on left: C.D. Gilbert; see also Abbott 2020:83–84).

One of the most unusual intertidal artifacts I have seen also was found at this site—an organic tool made from the lower beam and burr portion of a deer-sized antler (Figure 60). It exhibits a cut end, cut-marks and polish on some beam surfaces and considerable polish on the burr. L = 12.71 cm; W = 2.86 cm; T = 2.06 cm; M = 62.6 g. This artifact may be used as a pestle or as a flaking hammer. Its age is unknown and it is not necessarily contemporaneous with the Terminal Archaic stone tools. There is some black staining and a few surface cracks; otherwise, this artifact is well preserved and shows little evidence of damage from erosion. Whatever its age, its remarkable state of preservation presents something of a mystery.

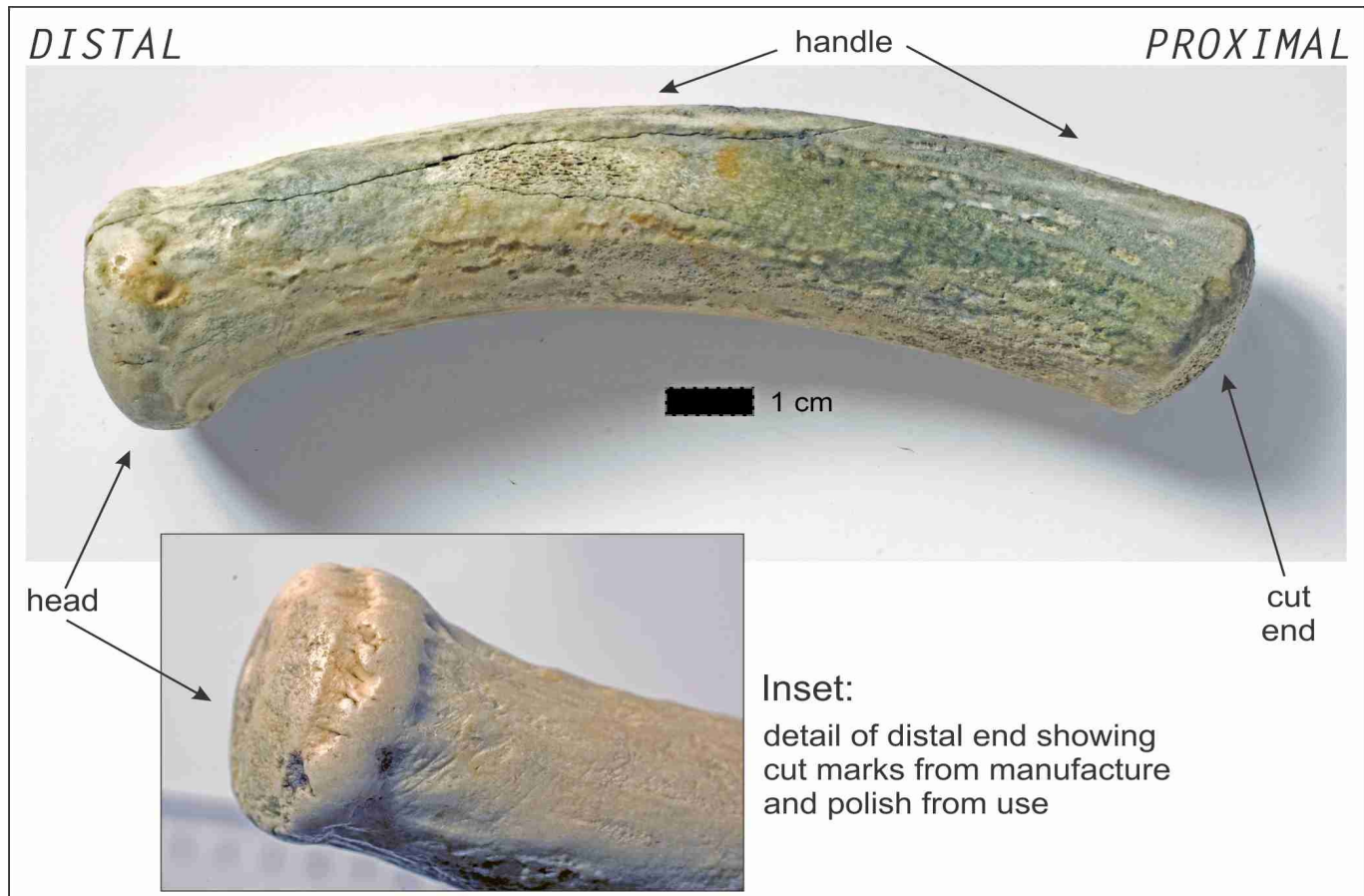


Figure 60: Antler artifact from Hardwood Island (photos: C.D. Gilbert; see also Abbott 2020:89).

Other Relevant Finds

Intertidal Sites.

Rouen Islet. Davis and Ferguson (1980) recovered five ground stone axe blades on the eastern shoreline of Rouen Islet, a small island attached to the southern end of Indian Island by an intertidal bar. The findspot (BfDr8) is exposed to the east, but is sheltered by Cherry Islet just offshore. One axe blade was partially exposed (but apparently *in situ*) at the extreme high water line, protruding at 30 cm depth from a soil deposit above a rock outcrop. Three other axe blades were scattered immediately downslope; the fifth was found nearby in the upper intertidal zone. Davis (1982) interpreted this find as the remains of an artifact cache. No feature was visible in the soil profile and subsequent testing by ASNB adjacent to the shoreline revealed no additional prehistoric artifacts. All five axe blades are grooved (two are double-grooved), and four of the five were flaked then ground. Davis noted their similarity to Archaic axe blades from Massachusetts reported by Dincauze. He did not specifically associate them with the Susquehanna Tradition but they almost certainly date to the Terminal Archaic period. The Rouen Islet find probably represents a ceremonial context, a type of intertidal site different in exposure and content from those described above.

St. Andrews Harbour. While I was writing this monograph, a member of the public brought an Atlantic-style stemmed projectile point to the UNB Anthropology Department (Figure 61). The finder recovered the artifact from the extreme low water line on Niger Reef, a ledge that extends offshore from the St. Andrews Blockhouse toward the western end of Navy Island. St. Andrews Harbour is a northwest–southeast oriented channel between the town of St. Andrews and Navy Island. The findspot is located toward the western end of the channel and is exposed to the west. The projectile point exhibits many of the characteristics of Atlantic-style Broadpoints, including a square stem and marked stem–shoulder asymmetry, and is similar in size to one found at Rum Beach (BgDq24:27; Figure 15). The artifact is made of a dark grey-green aphanitic volcanic; it is not bleached and beach rolling is negligible.

Land-based Sites. Analysis of comparable land-based components from shoreline or near-shore contexts in the Quoddy Region would provide much-needed clarification of intertidal assemblages dating to the Terminal Archaic period and Terminal Archaic–Maritime Woodland transition. Several pieces of tantalizing evidence suggest that such components may exist.

Sub-midden contexts. Terminal Archaic components and assemblages dating to the earliest part of the Early Maritime Woodland often are found beneath Maritime Woodland shell-bearing sites on the Maine coast (Spiess 1989; Yesner 1983). Occasional finds, such as an Atlantic-style Broadpoint found beneath the Teachers Cove shell-bearing deposits (Davis 1978; Sanger 1987:103), suggest that similar components may exist in the Quoddy Region (Sanger 1986:145).

Deer Island Point. Gilbert (2011:99) recovered the base and midsection of a pentagonal biface resembling the Mansion Inn type and made of Kineo-Traveler Mountain Porphyry from a land-based soil feature at the Deer Island Point site. Unfortunately an associated organic sample returned a radiocarbon age much later than the apparent age of the biface. This artifact may have been introduced into the feature by some natural or cultural disturbance process.

Saint Croix Island. Sanger (2012:247–268) reported aboriginal artifacts recovered during 1960s excavations focused on the early French occupation at Saint Croix Island (Pendery 2012), on the American side of the international boundary. A substantial portion of the prehistoric assemblage appears to date to the Terminal Archaic (large bifaces and stemmed projectile points, a grooved ground stone axe blade) and Early Maritime Woodland (a small side-notched projectile point, flaked and ground axe blades). The assemblage also includes large unifacial scrapers, an artifact type not found at Rum Beach or in the other intertidal assemblages described above. The Saint Croix Island prehistoric artifacts were recovered near the high water line on a low bluff above an west–east oriented landform similar to those associated with intertidal Terminal Archaic artifacts in the Canadian Quoddy Region. There is no indication in the archaeological literature that the adjacent intertidal zone has been searched for artifacts.



Figure 61: Broadpoint from Niger Reef, St. Andrews Harbour (photo: anonymous).

Interpreting a Drowned Archaic Landscape

The Canadian Quoddy Region includes a drowned prehistoric landscape, the littoral margin of which is sometimes concealed, sometimes revealed by the restless turns of the most powerful force on Earth.⁷¹ The archaeological sites and assemblages I described above provide a partial view of that landscape. I briefly substantiate and discuss three generalizations about this archaeological record in the following pages: 1) There are commonalities among the assemblages recovered from the Quoddy Region intertidal sites that characterize them as a group and distinguish them from later land-based prehistoric assemblages. 2) There are commonalities among the Quoddy Region intertidal sites that characterize them as a group and distinguish them from later land-based prehistoric sites. And 3) just as the ancestral Peskotomuhkati lifeways of the Maritime Woodland period cannot be understood simply by extrapolating accounts of Indigenous life during the protohistoric and early historic periods into the pre-European past, so lifeways on the drowned Archaic landscape cannot be understood simply through extending understandings of the Maritime Woodland period into the distant past. The distant past was different.

Commonalities Among Assemblages. Prehistoric assemblages from intertidal sites:

- predominantly consist of scatters of lithic artifacts (other types of material culture are rarely preserved).
- are dominated by flaked stone tools; ground stone tools are rare.
- are dominated by bifacial artifacts with random flaking patterns; evidence of bipolar reduction is rare.
- frequently include relatively large stemmed projectile points that resemble Terminal Archaic named types (e.g., Broadpoints, Atlantic, Susquehanna, Orient Fishtail).
- frequently include oval and pentagonal bifaces that probably served as preforms for stemmed projectile points and other bifacial tools, and that resemble Terminal Archaic named types (e.g., Boats, Mansion Inn).
- include relatively large bifaces and projectile points exhibiting extensive marginal modification and asymmetrical resharpening, suggesting that many were hafted and used as knife blades.
- frequently include flaked stone drill bits that resemble Terminal Archaic forms.
- are dominated by dark coloured aphanitic volcanics and other relatively intractable lithic materials.
- frequently include flaked stone tools made of lithic materials acquired from Maine sources and used extensively during the Terminal Archaic period (e.g., Kineo-Traveler Mountain Porphyry), or from lithic materials with appearances and flaking characteristics similar to materials frequently used in Maine during the Terminal Archaic (e.g., flow-banded rhyolites).
- include debitage qualitatively and quantitatively distinct from that in Maritime Woodland assemblages.
- sometimes include relatively large flakes and flake/blades that exhibit systematic marginal microflaking, probably representing use-wear.
- sometimes include cortical spalls, some of which exhibit systematic retouch and/or use-wear.
- sometimes include grooved ground stone axe blades that resemble those associated with Terminal Archaic assemblages elsewhere in the coastal Northeast.
- sometimes include flaked and ground stone axe blades that resemble those associated with Terminal Archaic and Early Woodland assemblages elsewhere in the Maine/Maritimes area.
- rarely include scrapers and other formal unifacially retouched tools.
- sometimes include artifacts associated with later parts of the Maritime Woodland and historic periods, similar to those found in land-based sites in the Quoddy Region.⁷²

⁷¹ As the tides have been masterfully portrayed by Hugh Aldersey-Williams in his (2016) book, *The tide: the science and stories behind the greatest force on Earth* (Norton & Co., London, UK).

⁷² These later artifacts vary in frequency from common, as at Deer Island Point (where land-based Maritime Woodland and historic components are eroding into the same intertidal zones that earlier components are eroding into), to rare, as at Rum Beach (where land-based Maritime Woodland and historic components are located at some distance from the intertidal zones that earlier components are eroding into).

- sometimes include artifacts associated with earlier parts of the Archaic period, similar to those recovered subtidally in the Quoddy Region.

Thus, these assemblages possess both positive and negative characteristics that distinguish them from earlier and later prehistoric assemblages. The assemblages are different than any recovered from Maritime Woodland period shell-bearing or black soil contexts. Since the latter are reliably radiocarbon dated from the Early Maritime Woodland radiocarbon plateau through the protohistoric period and many are associated with historic period components, a logical inference is that the intertidal prehistoric assemblages largely pre-date the preserved land-based components.

Many artifacts found in intertidal assemblages resemble those associated with Terminal Archaic occupations elsewhere in the Maine/Maritimes area, New England and the greater Northeast. I believe they show that Indigenous people in the Quoddy Region were fully integrated into the large scale cultural phenomena I refer to here as the Broad Point Archaic, the first of the expansive interaction spheres that blossomed among the prehistoric cultures of the Northeast from the Terminal Archaic through the early historic periods. They reveal a time when Indigenous people living in the Quoddy Region connected culturally with contemporaries from the Mississippi basin to the Atlantic seaboard, and from the Chesapeake to the St. Lawrence.

Terminal Archaic people employed stone tool technologies distinctly different from those of their Late Archaic ancestors and predecessors, and from their Woodland and contact period descendants and successors. Broadpoint technology was pervasive and persistent: I infer that this technology provided enduring solutions to important technological needs—although the specifics remain enigmatic, that Broadpoints and pentagonal bifaces also served as social technology—symbolically mediating issues of recognition, identity and cooperation, and that these distinctive formal stone tool types spread as flint-knapping memes.⁷³

Few Terminal Archaic artifacts recovered from Quoddy Region intertidal zones, at least so far, are spectacularly large variants like those sometimes associated with Susquehanna Tradition mortuary and ceremonial contexts in Maine and New England. As well, none exhibit obvious damage of the sort that would indicate they were interred in cremation features (e.g., Dincauze 1968; Leveillee 1999; Winter 2006). Rather, they tend to be smaller, sometimes broken, often extensively utilized variants. I infer that they have in large part been eroded from habitation and workshop sites.

All of these intertidal prehistoric assemblages are palimpsests. Their contents vary from site to site and the significance of this variation is poorly understood at present. Some of the variation may result, as Sanger (2008) has suggested, from people maintaining their regional distinctiveness even as they participated in larger cultural phenomena. At least some of the variability almost certainly reflects cultural change through time over the near-millennium of the Terminal Archaic period (e.g., Campbell 2016:138; Ellis et al. 1990:102; Hranicky 2014:248–249; Justice 1987:167). Other aspects of the variation almost certainly reflect the transition to Early Maritime Woodland lifeways and participation in subsequent interaction spheres (e.g., Blair 2004; McEachen 1996; Turnbull 1976).

Commonalities Among Sites. The assemblages described above have been recovered from intertidal archaeological sites with all or some of the following characteristics:

- the sites are located on elongated landforms—especially islands and peninsulas—with their long axes oriented approximately north–south (8 of 9 cases).⁷⁴

⁷³ For an introduction to the notion of “social technology” see Hayden (1993:159–161); for “meme” go to <https://en.oxforddictionaries.com/definition/meme>

⁷⁴ The nine cases considered are: Rum Beach, Pocket Beach, Seebeskok, Deer Island Point, Casco Bay Island, Wallace Cove, Kellys Cove, Hardwood Island and St. Andrews Harbour.

- the elongated landforms are bisected at the site locations by smaller scale landforms having their long axes oriented approximately west–east (6 of 9 cases).
- the landforms immediately adjacent to the landward margins of the intertidal zones where the artifact assemblages have been collected are underlain by unconsolidated sediments (7 of 9 cases).
- the adjacent landforms, and/or the intertidal surfaces on which the artifacts were recovered are topographically lower, by 2 m or more, than the landforms on which nearby, more recent archaeological sites are located (9 of 9 cases).
- the adjacent landforms are frequently covered by salt marshes (7 of 9 cases).
- the substrates of the salt marshes are peat deposits that accumulated, in part, under subaerial conditions (6 of 9 cases).
- the salt marshes are sometimes drained by short creeks that empty onto the shorelines where most of the artifacts are recovered (4 of 9 cases).
- in some cases, erosion has converted the low-lying landforms to intertidal thoroughfares (3 of 9 cases).
- the intertidal zones where the artifacts are recovered tend to be exposed to the west and/or northwest (6 of 9 cases) onto relatively large coves or channels (7 of 9 cases), although east and northeast exposures sometimes occur (4 of 9 cases).

These sites exhibit differences from later prehistoric sites in the Canadian Quoddy Region. Rum Beach can serve as a type site for the relevant characteristics, which comprise a predictive model for locating additional intertidal sites.⁷⁵ The more particular locations conform to the characteristics noted above, the more likely that prehistoric artifacts will be found on them and the more the intertidal assemblages recovered from them will be dominated by Terminal Archaic and/or Early Woodland artifact types. That all of these sites have come to the attention of archaeologists since 1993, rather than during the archaeological surveys of the 1970s and 1980s, suggests that such sites may be common—but occulted—in the archaeological record. On the other hand, the known sites may represent the remnants of a once-common site type, most examples of which are now destroyed or inaccessible. The somewhat exceptional location of the Rouen Islet axe blade cache suggests that the characteristics listed will serve to predict the locations of Terminal Archaic habitation and workshop components but not the locations of more specialized types of Terminal Archaic sites (such as ceremonial and mortuary features).

The Quoddy Region intertidal sites described above exhibit similarities to intertidal Terminal Archaic sites found elsewhere in the Maritimes (e.g., MacKinnon 2003; Turnbull 1988). While most coastal Susquehanna Tradition components in Maine are stratified beneath later Woodland period components (Spiess 1989; Yesner 1983), Terminal Archaic assemblages associated with coastal marsh contexts are known (e.g., Bourque and Weddle 2016). Further south in New England, intertidal marsh-associated Terminal Archaic components are more common (e.g., Adamczyk 2017; Dincauze 1972; Rae and Jones 2017; Robinson 1985). Several of the Maine and Massachusetts sites have northerly and westerly exposures similar to the intertidal sites in the Quoddy Region. That Quoddy Region intertidal sites are more eroded, more submerged and more exposed than those further south almost certainly results from the greater sea level rise and tidal amplitude in the Bay of Fundy marine system as compared to that of the Gulf of Maine. Taken together, these sites indicate that Indigenous settlement patterns on the Northeast coast differed between the Terminal Archaic and Woodland periods.

Terminal Archaic Settlement in the Quoddy Region. The locations of coastal archaeological sites leave no doubt that both Terminal Archaic and Maritime Woodland inhabitants of the Quoddy Region depended on watercraft for subsistence-, residential-, social- and exchange-related transportation (e.g., Blair 2010; Shaw 2018). In the Maritime Woodland period, these watercraft probably were mostly birchbark canoes; in earlier times, dugout canoes may have been used more commonly. Whatever the details of the development and

⁷⁵ For more on testing this model see Appendix F.

spread of bark canoe technology, landing and securing small watercraft would have been important considerations for locating habitation sites on both mainland and insular shorelines and during both the Terminal Archaic and Maritime Woodland periods.

Locational Model for Maritime Woodland Sites. More than a century of research into Quoddy Region shell-bearing archaeological sites has resulted in the identification of several criteria Indigenous people took into account when selecting locations for their coastal habitation sites, providing an empirical model of coastal site location for the Maritime Woodland period (Black 2004:62–70; Sanger 1988:92, 1996:344). This model applies equally to mainland and insular shell-bearing sites; the locations of Maritime Woodland sites without shell middens also generally conform to it. Maritime Woodland land-based coastal sites generally are:

- located on low gradient, well-drained landforms immediately adjacent to the high water line.
- located at or near the heads of small coves (or former coves).
- exposed to the south, southeast and/or southwest and sheltered to the northwest.
- sheltered toward the open ocean.
- located near small freshwater sources (e.g., springs, small streams).
- located near high productivity intertidal zones (e.g., clam flats, intertidal ledges, tide pools).
- located adjacent to shorelines where small boats could have been landed and secured conveniently.

Locational Model for Terminal Archaic Sites. Terminal Archaic intertidal sites generally are:

- located on low gradient marshy landforms immediately adjacent to the high water line.
- located at or near the western ends of topographic depressions oriented west–east.
- exposed to the west and/or northwest and sheltered to the north and the south.
- located adjacent to shorelines where small boats could have been landed and secured conveniently.

Some locational characteristics of Terminal Archaic intertidal sites are difficult to assess because of environmental changes, including at least a couple of meters of sea level rise over the past 3000 years.⁷⁶ The landforms associated with Terminal Archaic assemblages generally are more extensive and may have been more level than the landforms on which more recent sites are located. Adjacent intertidal zones may have been at relatively lower gradients. These landforms probably supported forest-fringed marsh–meadow complexes with accessible freshwater sources at the time they were occupied.

Vegetation cover on these landforms during the Terminal Archaic occupations is difficult to assess at present. Logically, habitation sites would have been located preferentially in natural near-shore clearings that required low investments in surface preparation. Forest cover sheltering the sites toward the offshore seems likely in most cases. Similarly, it is difficult now to assess intertidal zone characteristics and productivity adjacent to Terminal Archaic sites at the time they were inhabited. Currently, these locations give the impression of lower productivity than the shorelines adjacent to Maritime Woodland sites. However, as I have argued elsewhere (Black 2000b), rising sea levels change coastal resource patch configurations above and below the high water line, and in response people may have changed their preferred habitation- and subsistence-related site locations through time. Terminal Archaic sites may have been adjacent to high productivity resource patches 3–4000 years ago.

The most dramatic differences between the locations of Terminal Archaic and Maritime Woodland sites are in orientation and exposure. These differences are illustrated in Figure 62 by contrasting Rum Beach with the large Maritime Woodland site, the Weir site, at the opposite end of the marsh that bisects the northeastern Bliss Island (Figure 53). Most intertidal sites are, like Rum Beach, oriented toward relatively broad expanses of open water and exposed to the west and northwest. Rum Beach may have been somewhat less exposed to the northwest 3–4000 years ago, but the difference would not have been dramatic. The

⁷⁶ Climate change may also be implicated. Fiedel (2014:87–89) suggests the Broadpoint phenomenon took place during a roughly 1500 year period (4200–2700 cal BP) at the onset of neoglaciation, characterized by megadrought conditions in the North American interior and bracketed between two abrupt cold events.

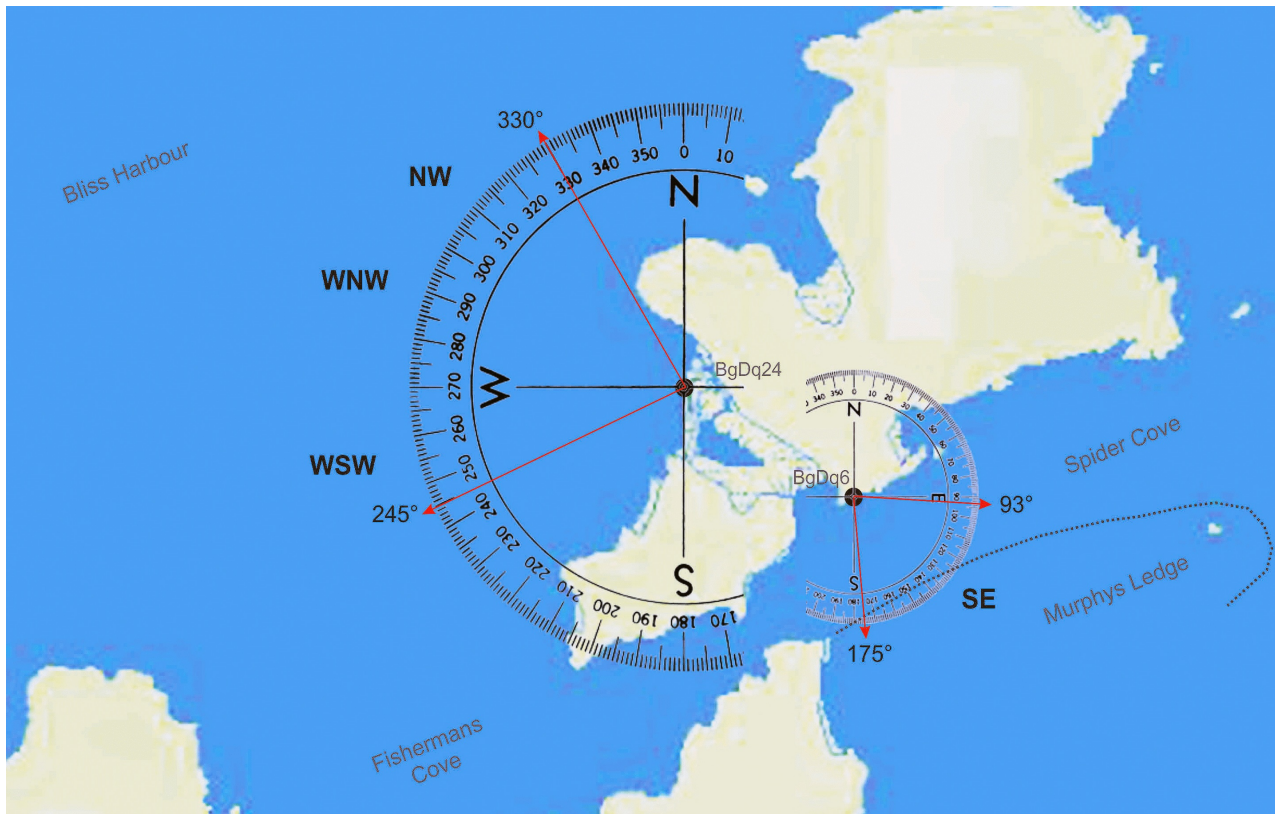


Figure 62: A comparison of the orientations and exposures of the intertidal Rum Beach site (BgDq24) and the land-based Weir site (BgDq6). The prehistoric components at Rum Beach largely date before 2700 BP; the prehistoric components in the Weir site date after 2500 BP (base map from GeoNB).

exposures of Maritime Woodland sites are almost diametrically opposite—generally, like the Weir site, they are located on relatively narrow water bodies and exposed to the south, southeast and/or southwest. In many cases, they would have been significantly less exposed at the time they were inhabited. For example, for most of the time that the Weir site was inhabited, Murphys Ledge would have been above the high water line and covered by forest, and would have sheltered the site from the open ocean. As well, the northeastern and central Bliss Islands would have been joined above the high water line and, as a result, the Weir site's exposure to the southwest would have been much more limited. This contrast between Terminal Archaic and Maritime Woodland coastal habitation choices cannot be explained simply by alterations to shoreline geomorphology. Environmental differences, before and after the Early Woodland radiocarbon plateau, appear to have been so significant that they elicited different human perceptions of and responses to the opportunities and challenges presented by living on Quoddy Region shorelines.

The locations of intertidal archaeological sites attest to the importance of making, using and securing watercraft for the littoral hunter-gatherers who lived on the shorelines of this dynamic and productive marine system. Since most evidence from the intertidal sites is in the form of stone tools, a challenge for the future lies in relating specific lithic technologies to the specifics of watercraft production and use. Some are skeptical about establishing such relationships (e.g., Sanger 2009); others are more optimistic (e.g., Rae and Jones 2017). Archaeologists have speculated that Archaic ground stone technology related to the making of dugout canoes (an analogy with aboriginal boat-making on the Northwest Coast), and that Maritime Woodland flaked stone technology related to birchbark canoe-making (similar to historic aboriginal bark boat-making technologies in the Northeast). In the Quoddy Region and its immediate vicinity, a salient challenge is to place utilized cortical spall, flake and flake/blade technologies in culture-historical context and to establish how these technologies may have contributed to boat-making and other tasks.

Conclusion

My primary purposes in writing this monograph have been to update and enhance the available information on the Rum Beach site and to summarize information about comparable intertidal archaeological sites in the Canadian Quoddy Region. I have attempted to demonstrate that despite degradation and disturbance these sites hold value for archaeological interpretation of both Indigenous and Euro-Canadian histories. I hope that I have convinced readers that a strategy of periodic surface collection is a viable method of investigating them.

Evidence from the intertidal sites connects the past of Peskotomuhkati traditional territory to the cultural history of northeastern North America as a whole, especially to the controversial Terminal Archaic period and the enigmatic Terminal Archaic–Maritime Woodland transition. Some formal artifacts from the intertidal sites show affiliations with the Broad Point Archaic of the Northeast culture area and especially with its Atlantic coastal variant, the Susquehanna Tradition. Others suggest affiliations with the cultural phenomena of the Early Maritime Woodland period. This evidence shows that Indigenous people living in the Quoddy Region participated in large scale cultural interaction spheres in the distant past.

Similarities in site locations and exposures show that people living in Peskotomuhkati traditional territory shared orientations toward life on the Atlantic littoral with their contemporaries to the south during those times. Because of the submergence of relevant coastal sites, the details of those lifeways remain obscure in the Quoddy Region. One challenge for the next generation of archaeologists is to find creative ways to learn more about Archaic adaptations to the tidal foreshore.

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This all began with the avocational archaeologists, and so I must end with them (Figure 63). They are the folks with their boots on the ground and their boats in the water. They know the waterscapes and landscapes of the Canadian Quoddy Region. They are there... to find sites, to monitor sites, to collect and conserve artifacts, to observe and record shoreline change. They are able to do these things as soon as the winds drop, as soon as the tides fall—at times when and in places where governments and educational institutions (in these risk-averse and litigious times) are less and less inclined to support professional archaeologists to go. Professional archaeologists have an ethical responsibility to work with avocational archaeologists, to exchange knowledge with them, and to support them in their efforts to preserve important pieces of the past (e.g., Pitblado 2014a, 2014b). In turn, avocational archaeologists in the Quoddy Region have a responsibility to share their knowledge with professional archaeologists and to develop their expertise as citizen scientists, while they wrest pieces of the past from the grasp of the most powerful force on Earth.



Figure 63: One more look at the Rum Beach site.

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- LNPP**: Lithics-Net Projectile Point Data, <http://www.lithicsnet.com/byshape.html>
- NEPP**: New England Projectile Point Typology, <http://webhost.bridgew.edu/c1hoffman/an410a.htm>
- NRCS**: NRCS East Region Projectile Point Identification Guide. [http://efotg.sc.egov.usda.gov/references/public/DE/Cultural\\_Resources\\_Point\\_Guide.pdf](http://efotg.sc.egov.usda.gov/references/public/DE/Cultural_Resources_Point_Guide.pdf)
- NYNE**: New York State and Northeast Projectile Points, <http://creeksideartifacts.com/typology/>
- NYSM**: New York State Museum, Archaeological Collections, Projectile Point Types, <http://collections.nysm.nysed.gov/projectilepoints/>
- OSNE**: Official Overstreet Indian Arrowhead Identification, Online Database, [http://typology.arrowheads.com/region\\_list.php?region\\_id=NE&&al=a](http://typology.arrowheads.com/region_list.php?region_id=NE&&al=a)
- PPIG**: Projectile Point Identification Guide, [http://www.projectilepoints.net/Search/Northeast\\_Stemmed.html](http://www.projectilepoints.net/Search/Northeast_Stemmed.html)
- SNPP**: Southern New England Projectile Point Types, <http://www.nativetech.org/stone/pointtypes/>
- SOPP**: Southern Ontario Projectile Points, <http://www.ssc.uwo.ca/assoc/oas/points/sopoints.html>
- WTPP**: What's the Point? Identifying Flint Artifacts, <http://oplin.org/point/indexes/archindx.html>

### Appendix A: The *Cora Gertie* Incident.

Bliss Harbour and the Bliss Islands have been the scene of a series of historic shipwrecks. These include the barque *George W. Hunter* (1872), the full-rigged ship *Humber* (1873), the schooner *Levi Hart* (1874) and the schooner *Horace G. Morse* (1906), to mention a few that have been written up in the shipwreck literature (e.g., Allaby 2022:170–180, 248; Parsons 2006:169–171).<sup>77</sup> However, I know of only one wreck on the islands that has been the source of persistent stories and has been recognised in archaeological evidence.

*Cora Gertie* was a 72-foot, 30-ton, two-masted wooden schooner with auxiliary power supplied by a 25-horsepower make-and-break gasoline engine.<sup>78</sup> The vessel was designed and built in the shipyard of George Richardson at Lords Cove, Deer Island, NB, and launched early in 1910; it was built to order for owner and Captain M.G. Crocker of Freeport, Long Island, NS, who used the schooner to transport fish for the Maritime Fish Corporation. The ship was designed to carry up to 70,000 pounds of fresh fish; its participation in the fishery was reported in several issues of *Canadian Fisherman*.

Even during its years in the fishery, *Cora Gertie* had a somewhat checkered career. Just over a year after it was launched, in July 1911, the schooner was involved in a marine accident significant enough to be reported nationally. In dense fog at Digby, NS, it was struck by a larger schooner, *Evolution*; its masts and pilot house were carried away and it was cut down to the waterline. However, *Cora Gertie* did not sink and was subsequently repaired. On the evening of Feb. 7, 1916, the schooner was stranded for several hours on ledges at the west side of Digby Gut; there was no serious damage to the vessel on that occasion.<sup>79</sup>

The 1916 edition of *Canadian Fisherman* reported the death of Captain Crocker and that his business had been passed on to his sons.<sup>80</sup> Presumably they continued to employ *Cora Gertie* in the fishery. However, at some point between then and the mid-1920s, the ownership of *Cora Gertie* changed hands and

Figure A1: Historic liquor bottle base, *White Horse* blended Scotch whisky (BgDq24:89).



<sup>77</sup> Allaby, E. 2022. *The sea wins: shipwrecks of the Bay of Fundy* (Nimbus Publishing, Halifax), pp. 170–180, 248. Parsons, R.C. 2006. *Shipwrecks of New Brunswick* (Pottersfield Press, Lawrencetown Beach, NS), pp. 169–171.

<sup>78</sup> In some documents, this vessel was referred to as “Cora Gertrude” or “Cora & Gertie.”

<sup>79</sup> *Digby Courier*, <http://www.municipalities.com/digby/articlecourier1910.htm>

<sup>80</sup> *Canadian Fisherman*, [http://www.archive.org/stream/canadianfisherma03cana/canadianfisherma03cana\\_djvu.txt](http://www.archive.org/stream/canadianfisherma03cana/canadianfisherma03cana_djvu.txt)

the schooner was employed in a different trade. By 1925, the vessel was owned by Harry Stone of Saint John, NB, and was being used to transport and sell illegal liquor.<sup>81</sup>

On October 10, 1925, the schooner *Cora Gertie*, under the command of Captain Gee and carrying about 500 cases of liquor in boxes and burlap sacks, was anchored offshore from Passamaquoddy Bay at the 12-mile limit.<sup>82</sup> Small boats would come out from shore and the occupants would purchase liquor from the crew of the schooner. When a strong gale came up that night, the crew attempted to bring the schooner to the safety of a harbour—perhaps they were making for Blacks Harbour or Back Bay. At any rate, *Cora Gertie* struck a ledge on the Bliss Harbour side of White Head at the seaward end of Fryes Island. The vessel was driven by the wind into Bliss Harbour, struck another small island (probably Man of War Islet) and sank at the entrance to Fishermans Cove on the Bliss Islands. The crew was able to get ashore safely in a small boat.

The authorities apparently recruited local fishermen to guard the illegal cargo in the sunken schooner. These guards and their confederates proceeded to salvage the cargo, with the help of grapples, an improvised trawl and a diver. When they had raised all the liquor they could by these means, they brought *Cora Gertie* ashore, wrecked the schooner and spirited away the remaining liquor. For a time, the beach where the schooner was wrecked was called “Cora & Gertie Beach” but, by the time I came to the Bliss Islands in the early 1980s, this apparently had been simplified as “Rum Beach,” no doubt an acknowledgment of the broken bottles that litter the intertidal zone.

Only one specific brand of liquor was mentioned as being part of *Cora Gertie*’s cargo—*White Horse* whisky. *White Horse* is a blended Scotch whisky registered in 1890 by Sir Peter Mackie, a distiller and blender, and named for a famous coaching inn in Edinburgh, Scotland. It became one of the foremost blends in the world, perhaps because it contained a substantial proportion of an acclaimed Islay malt whisky *Lagavulin*,<sup>83</sup> and was popular during the Prohibition era. I have collected only a few pieces of historic glass from the Rum Beach site but, significantly, one of these is from the base of a green, flask-shaped bottle with part of the *White Horse* brand name on it (Figure A1). The bottle shard shown in Figure A2 appears to be from a bottle of *Old Smuggler*, another blended Scotch that became popular during Prohibition. The brand names embossed on the glass bottles indicate that they were made before 1930.<sup>84</sup>



Figure A2: Historic liquor bottle sherd, *Old Smuggler* blended Scotch whisky (BgDq24:90).

<sup>81</sup> B.J. Grant mentioned this incident in his (1984) book *When rum was king: the story of the Prohibition Era in NB* (Goose Lane Editions, Fredericton); unfortunately, he got several details wrong including the ship’s name, which he recorded as “Cara Gertie.”

<sup>82</sup> This account of the shipwreck is drawn from, and partially inferred from J. Cunningham’s (1980) newspaper article (“The ballad of the good ship Cora & Gertie,” *Saint Croix Courier*, Dec. 3), for which he interviewed several men involved in the salvage of schooner’s cargo, and E. Allaby’s (2022:230–231) account (see note 77).

<sup>83</sup> Shaw, C.P. 1999. *Whisky* (3<sup>rd</sup> ed., HarperCollins Publishers, Glasgow, Scotland), pg. 229. And special thanks to Darcy Dignam for his research on *White Horse* whisky.

<sup>84</sup> See, e.g., <http://www.glassbottlemarks.com/bottlemarks>

**Appendix B:** Additional Rum Beach Images and Prehistoric Artifacts.



Figure B1: Obverse faces of six bifaces (BgDq24:145, 146, 147, 148, 149, 150).

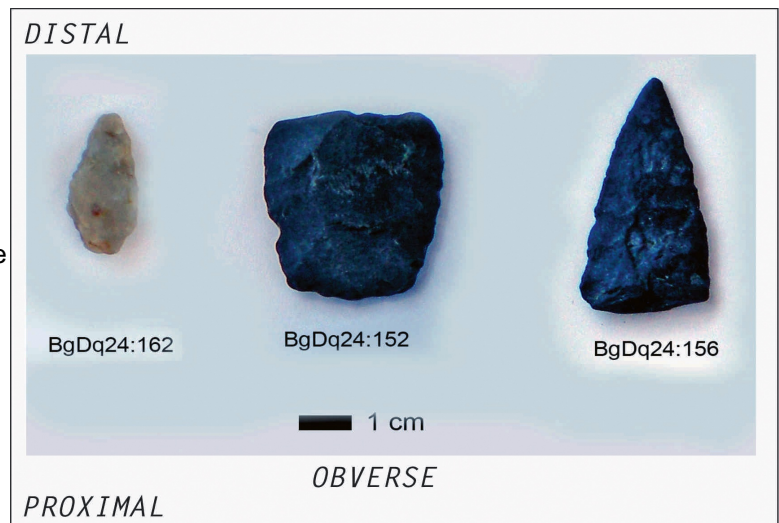


Figure B2: Obverse faces of three bifaces (BgDq24:152, 156, 162).

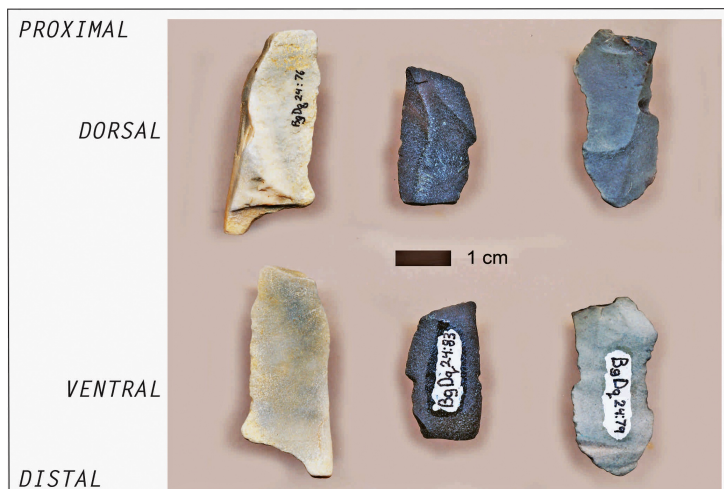


Figure B3: Three microblade-like flakes (BgDq24:76, 79, 83).

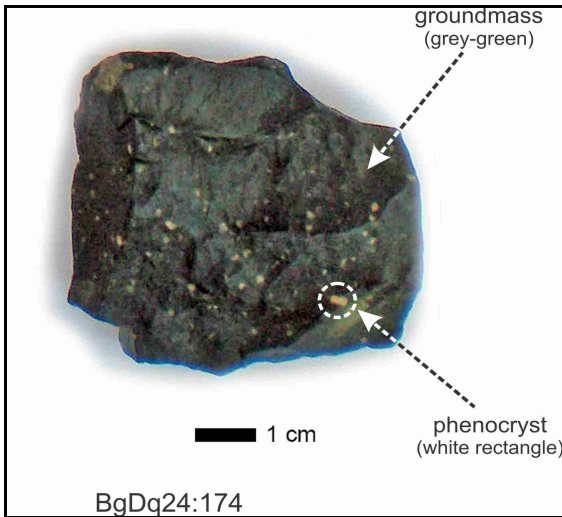


Figure B4: Dorsal face of a secondary flake made of porphyritic volcanic (BgDq24:174).

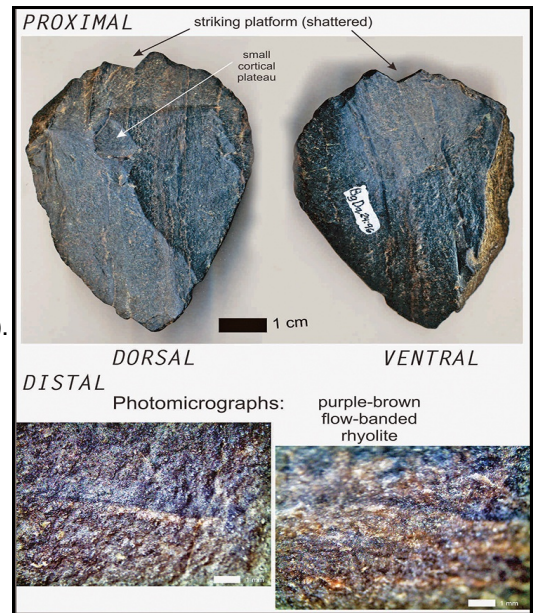


Figure B5: Primary flake made of flow-banded rhyolite (BgDq24:96).



Figure B6: Dorsal face of a small flake made of Washademoak Multi-coloured Chert (BgDq24:159).

**Appendix C: An Unusual Potential Prehistoric Artifact from Rum Beach.**

A small flat piece of specularitic hematite<sup>85</sup> (BgDq24:104), irregular oval in shape (Figure C1), was found on Rum Beach. The piece has not obviously been modified as an artifact; the obverse face appears to be a natural surface and the reverse a fracture surface. It is included here for the following reasons:

- 1) It is an unusual find and its presence on Rum Beach is unlikely to be a natural occurrence; specularitic hematite is not known to occur in the bedrocks on the Bliss Islands.
- 2) Specularitic hematite is known to occur as veins in the granite batholiths that outcrop in the interior of Charlotte County—this piece could have been transported from the mainland to the islands by Indigenous people.
- 3) Specularitic hematite is known to have been used by Indigenous people to make artifacts; Suttie (2005:171–175) reported an Archaic plummet made of specularitic hematite from a lake margin findspot in interior Charlotte County.

Thus, the specularitic hematite object found at Rum Beach may be part of the Archaic period assemblage recovered there.

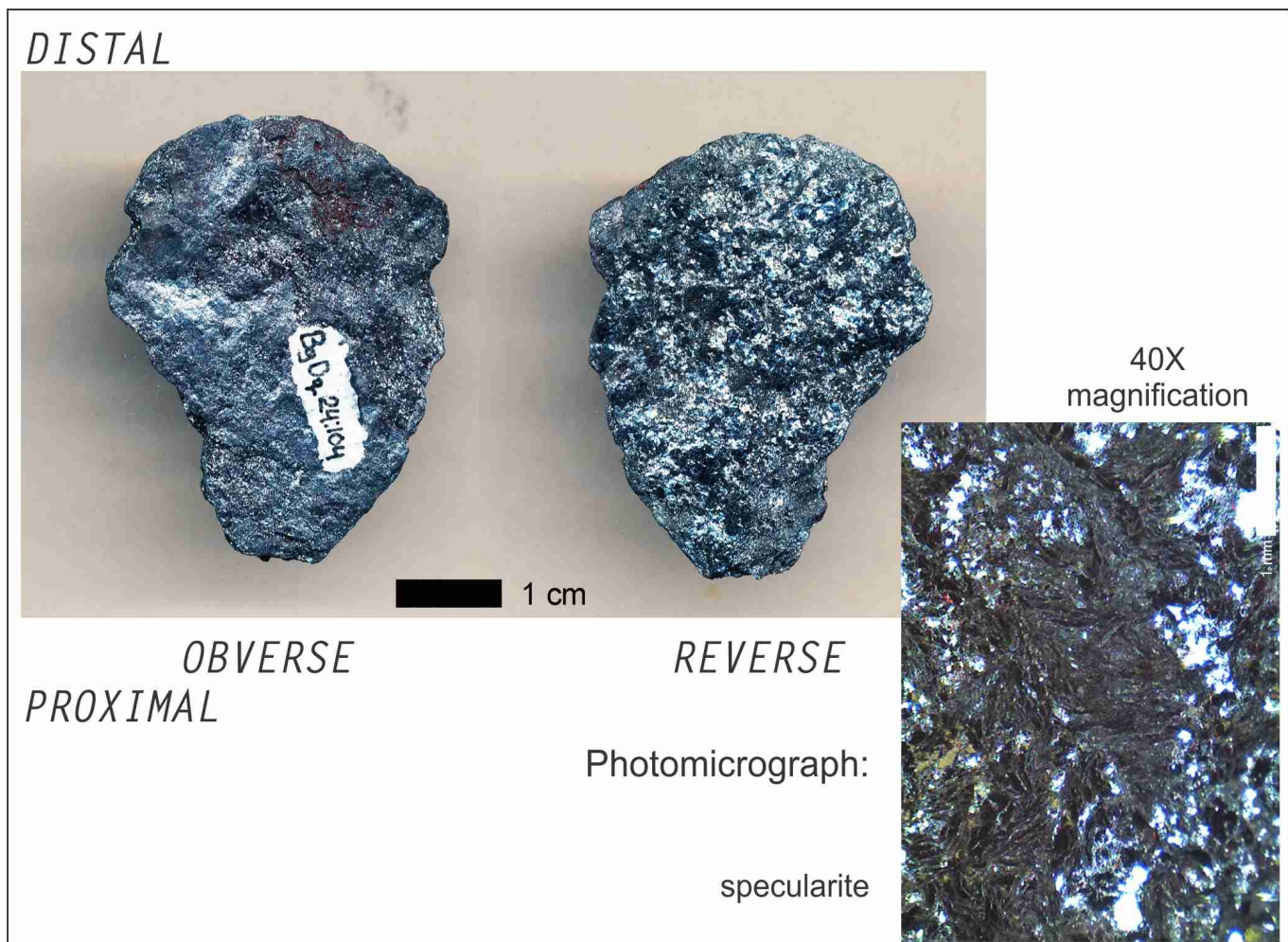


Figure C1: Specularitic hematite object (BgDq24:104).

<sup>85</sup> Also referred to as specularite; see, e.g., <https://www.mindat.org/min-5574.html>

**Appendix D:** Additional Pocket Beach Images and Prehistoric Artifacts.



Figure D1: Surface collecting the Pocket Beach site. Note the strand lines of rockweed.

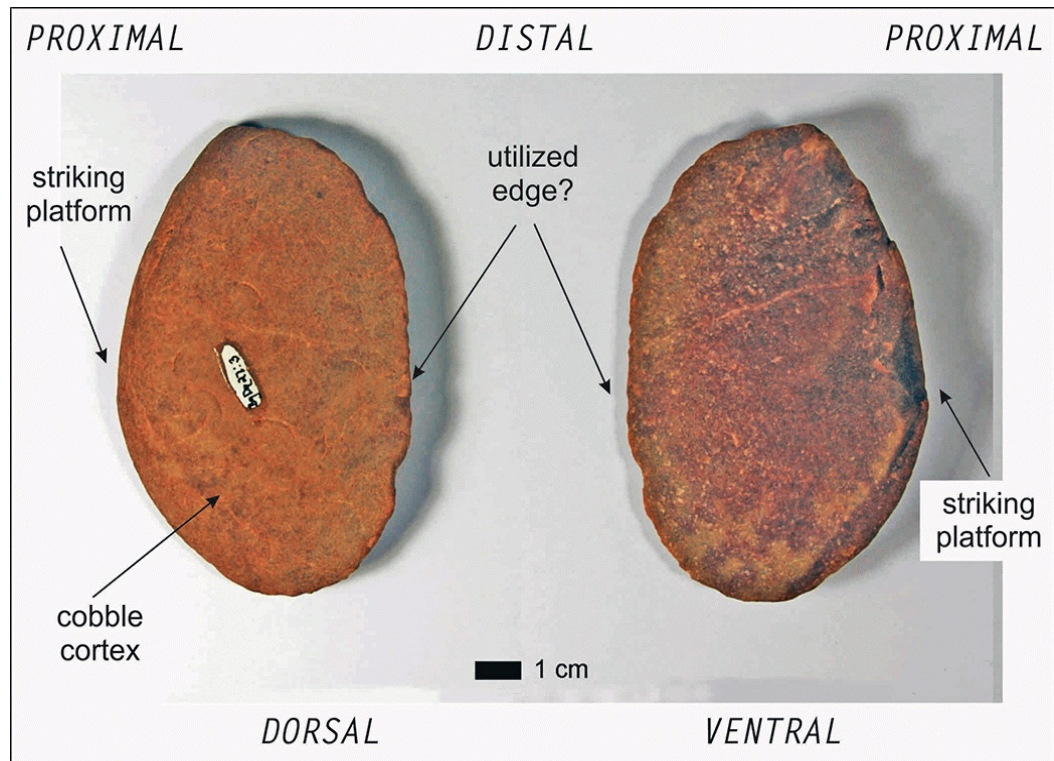
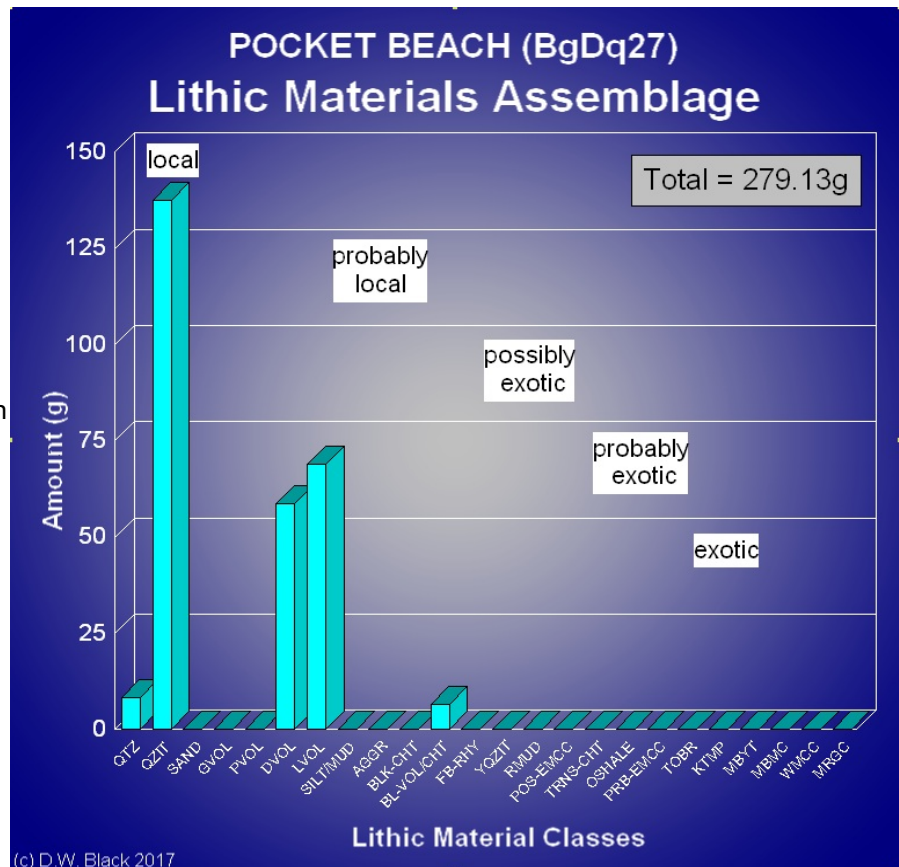


Figure D2: Cortical spall tool made of quartzite from the Pocket Beach site (BgDq27:3).



Figure D3: Oval-pointed biface made of light volcanic from the Pocket Beach site (BgDq27:8).

Figure D4: Quantitative distribution of flaked lithic materials in the Pocket Beach assemblage.



**Appendix E: Additional Seebeskok Images and Prehistoric Artifacts.**

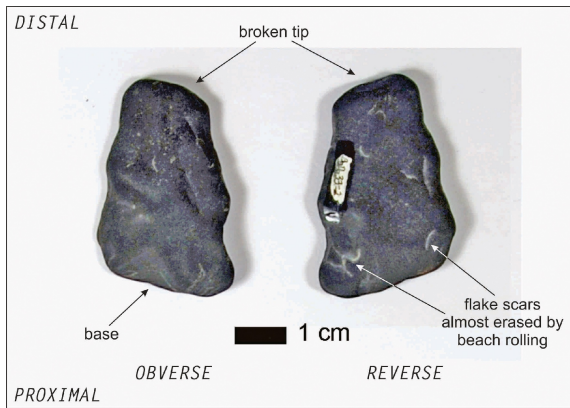


Figure E1: Biface portion made of dark volcanic from the Seebeskok site (BgDq33:2).

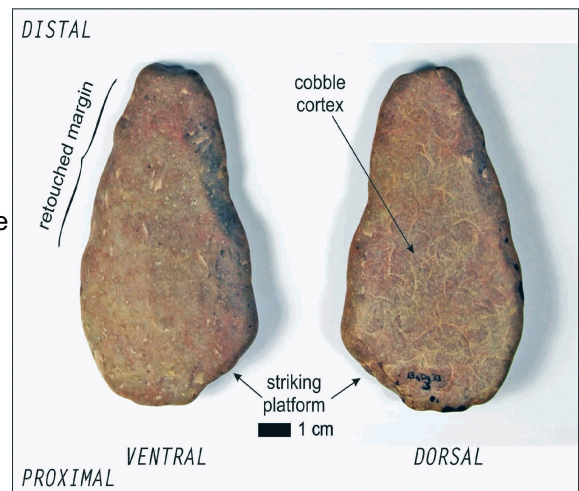


Figure E2: Cortical spall tool made of quartzite from the Seebeskok site (BgDq33:3).

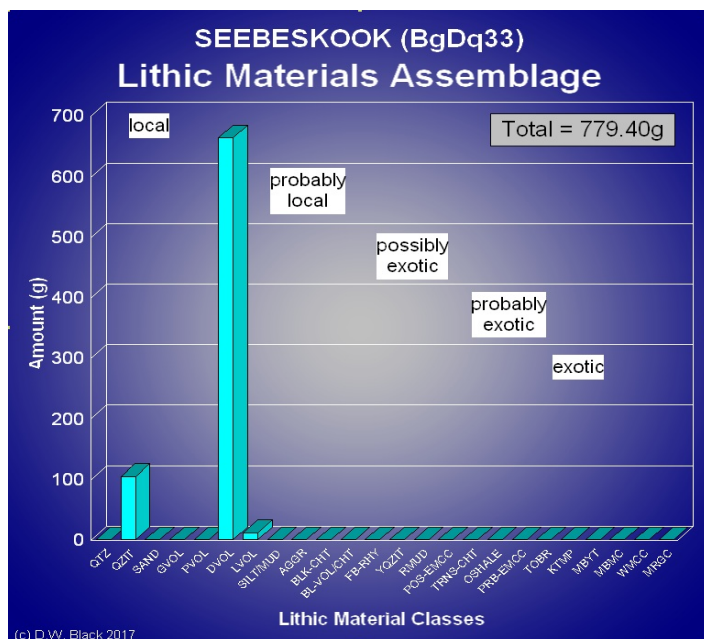


Figure E3: Quantitative distribution of flaked lithic materials in the Seebeskok assemblage.

**Postscript 2018**

When I began writing this monograph in August 2017, I confidently predicted that I would complete it by the end of October, that it would be about 20 pages in length and that it would include no more than 20 illustrations. I might have achieved that, had I stuck to the clipped and focused style of an academic paper and presented conclusions and interpretations without much data and description.

But I found that I couldn't do that.

Like many academics, I write best when I'm writing for myself, using the act of writing to force myself to closer observation and deeper consideration. But as the work progressed I found, more and more, that I wasn't writing just for myself and for my academic colleagues. More and more, I was writing for the public, for my avocational colleagues and especially for my friends in the Quoddy Region.

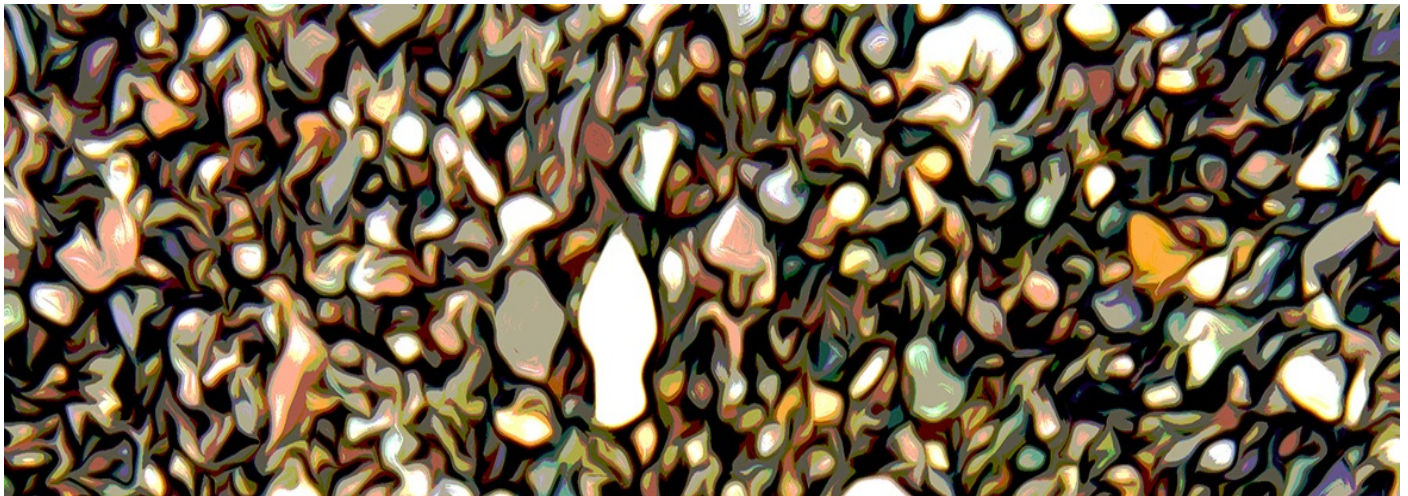
And I found myself at sea... in a sea of memories.

Some of the best days of my life have been spent on the shores of the Quoddy Region. Many of those days were spent on the Bliss Islands. And some of the best of those were days I spent scanning the ephemeral foreshore at Rum Beach.

So my monograph, like its subject—Rum Beach—has become a cumulative palimpsest... with narrative and anecdotes layered on illustrations, technical descriptions and historical discourse, and interspersed with data, definitions, digressions, speculations and clarifications, none of them in especially logical juxtaposition.

And all of them smudged, here and there, with the rose-gold of reminiscence.

Like pebbles strewn across a beach in the late afternoon sun.



April 30, 2018

**Traditional Land Acknowledgement**

The field research reported in this monograph was conducted in Peskotomuhkatikuk, the traditional territory of the Peskotomuhkatiyik (the Passamaquoddy people). The analysis of many of the archaeological objects and the writing of the monograph were undertaken in Wolastokuk, the traditional territory of the Wolastoqiyik (Maliseet: the people of the beautiful river). At several points, reference is made to archaeological sites and objects from Mi'kma'ki, the traditional territory of the Mi'kmaq (the Micmac people). The author respectfully acknowledges the unsundered and unceded status of these and other Wabanaki traditional lands.

**Appendix F: Relevant Artifacts Reported Since April 2018.**

*Introduction:* In this appendix, I present some recent finds that are relevant to the content of the monograph, many of which were found at places referred to in the previous pages. Additional recent finds are illustrated in the book published by Chad Abbott (2020); see, especially, his pages 58, 84 and 90. In the last several pages of the appendix, I summarize an attempt to test the predictive value of the locational model for Terminal Archaic intertidal sites that I presented on pages 67–69 above.

Figure F1a: Rum Beach at low tide in 2023.



Figure F1b: An unfinished biface made of dark volcanic material.

Figure F1c: An oval-pointed biface made of dark volcanic material.

Chad Abbott and Austin Paul found these artifacts on Rum Beach.



Figure F2: Austin Paul found this quartzite projectile point in the creek at Rum Beach and photographed it through the water. The tip is missing. The hafting element could be described as either expanding-stemmed or as notched.



Figure F3a: Patti Ramsey found this projectile point on the southern shoreline of Pendleton Island.



Figure F3b: The point shown in Figure F3a is made of a flow-banded volcanic material.

The artifacts in figures F2 and F3 resemble the Coburn and Dudley varieties of Wayland Notched projectile points, which date to the later part of the Terminal Archaic period (Boudreau 2016:104–105; Campbell 2016; Deal et al. 2022:73, 77).



Figure F4a: Mikki Hatt found this biface protruding from the gravel bar on the eastern end of Hardwood Island.



Figure F4b: The biface shown in Figure F4a is made of a bleached dark volcanic material. It is asymmetrically stemmed and may be unfinished. This artifact probably is Terminal Archaic or Early Woodland in age.



Figure F5: Judy McGovern found this fish-tailed projectile point at Kellys Cove. It appears to be made of Tobique Rhyolite (see Black 2022:83, note 1) and probably is Terminal Archaic or Early Woodland in age.



Figure F6: Judy McGovern found these heavily beach-rolled artifacts at Kellys Cove. The upper one appears to be an Atlantic-style Broadpoint made of dark volcanic material. Part of the stem and base are missing. The lower piece is a lanceolate biface, apparently made of Apple-Green Glassy Rhyolite (see page 44 above; Black 2004, 2022:111), and resembles some Mansion Inn-style bifaces (Boudreau 2016:101, 139).

Figure F7: Bob Bosien discovered an eroding multi-component archaeological site at Doctors Cove, Deer Island. Among the artifacts he recovered is this grooved axe blade. The location is about 2 km from the Terminal Archaic axe blade cache reported by Davis (1982).

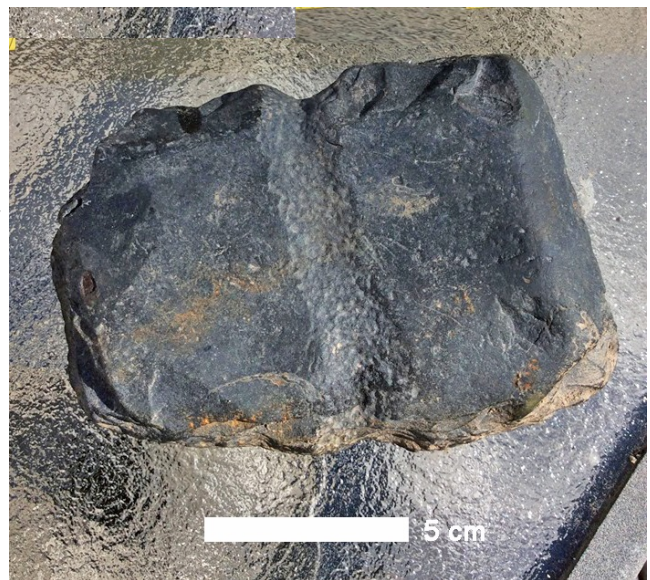


Figure F8: Patti Ramsey found this flaked stone drill bit on Indian Island. It is made of dark volcanic material. The tip is missing. Note the similarity to an artifact found by Bob Bosien on Deer Island (Abbott 2020:29). The bases of these artifacts resemble those of some Susquehanna and Wayland Notched projectile points (Boudreau 2016:94, 106).

Mikki Hatt and Judy McGovern found these artifacts at Stuart Town, Deer Island.

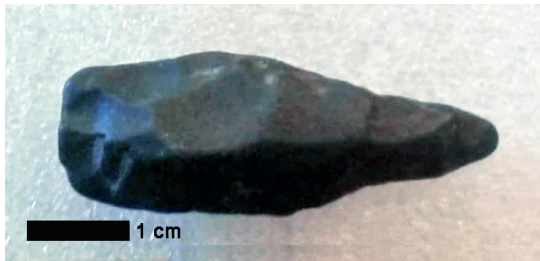


Figure F9a: A small, flaked stone drill bit or perforator made of dark volcanic material. The base resembles those of some Terminal Archaic bifacial tools.



Figure F9b: A large scraper made of green felsic volcanic material. Flaked stone scrapers are relatively rare in Quoddy Region intertidal assemblages. This artifact was recovered in a road-cut some distance from the shore.



Figure F9c: A fully grooved cobble, perhaps a maul head or a preform for a ground stone axe blade. The overall shape and the groove are reminiscent of some Terminal Archaic ground stone tools (see, e.g., page 58 above). Note the similarity to a grooved axe blade found elsewhere on Deer Island (Abbott 2020:21).

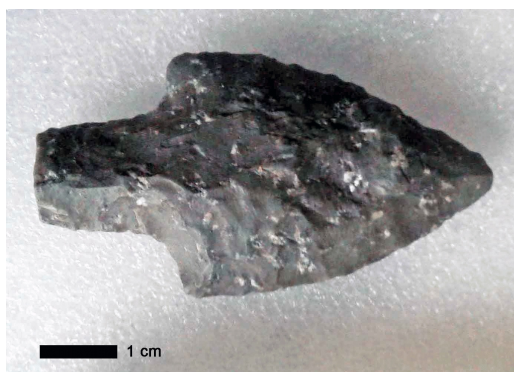


Figure F9d: A stemmed projectile point made of Kineo-Traveler Mountain Porphyry (see page 45 above). Note the arris on the stem of the point indicating the dorsal face of the flake blank from which the artifact was made.

Figure F9e: The base of the stem of the projectile point shown in Figure F9d retains the striking platform of the flake blank. This suggests the artifact may be Late Archaic in age.

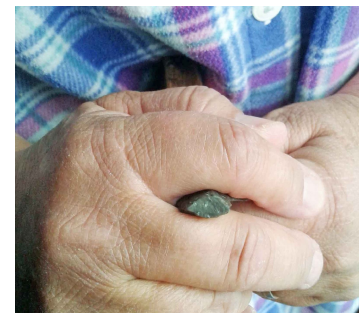


Figure F10: Mikki Hatt found this stemmed biface on Little Island, near Stuart Town. It is made of bleached dark volcanic material. The stem resembles some Adena-style Early Woodland forms (Boudreau 2016:111). Note the similarity to another from Hardwood Island shown in Figure 59, page 61 above.



Figure F11: Judy McGovern found this large stemmed projectile point on the Irish Channel shore of Little Island. It exhibits a narrow triangular blade, a slightly contracting stem, stem-shoulder asymmetry and rounded shoulders. It is made of flow-banded rhyolite strongly resembling the material from Vinalhaven Island at the mouth of the Penobscot River. This artifact bears some resemblance to a long narrow point found at Kellys Cove (Abbott 2020:44) but, in my experience, it is an unusual style in the Quoddy Region.



Figure F12: This use-worn flake/blade, made of Apple Green Glassy Rhyolite (see page 44 above; Black 2022:111), was found by an anonymous collector at Marble Island, near Indian Island, within 100 m of where Davis (1982) recovered a Terminal Archaic axe blade cache. The location is consistent with six of the “commonalities among sites” identified on pages 64–65 above. Note the similarities between this flake/blade and those shown in Figure 34, page 34 above.

Figure F13: Judy McGovern and Mikki Hatt found this use-worn flake/blade in an intertidal zone adjacent to a northwest exposed salt marsh on Jameson Island. The location is consistent with seven of the “commonalities among sites” identified on pages 64–65 above. Note the similarities to artifacts shown in Figure 31, page 32 above.



*Initial Test:* After posting the 2018 version of the monograph, I pondered how to test the locational model for Terminal Archaic intertidal assemblages that I had developed. I examined maps with an eye to places having the relevant characteristics but without recorded archaeological sites—places I believed had not been examined previously by archaeological surveyors. I decided that the simplest initial test of such an approach was to select a single place that conformed closely to the locational model. My plan was to visit this place in the field to see if I could find artifacts in the intertidal zone.

The place I selected is an unnamed cove on the west side of Fryes Island across Back Bay from Back Bay village (Figure F14). It is located about 2.5 km (as the crow flies) from Rum Beach. The unnamed cove is somewhat larger than the cove at Rum Beach and slightly less exposed. However, in most respects, the geomorphology and exposure of the shoreline at this cove are strikingly similar to those of Rum Beach.

The cove is located on a NE–SW oriented portion of Fryes Island bisected by a NW–SE oriented, low-lying landform underlain by unconsolidated sediments. The cove at the western end of the low area

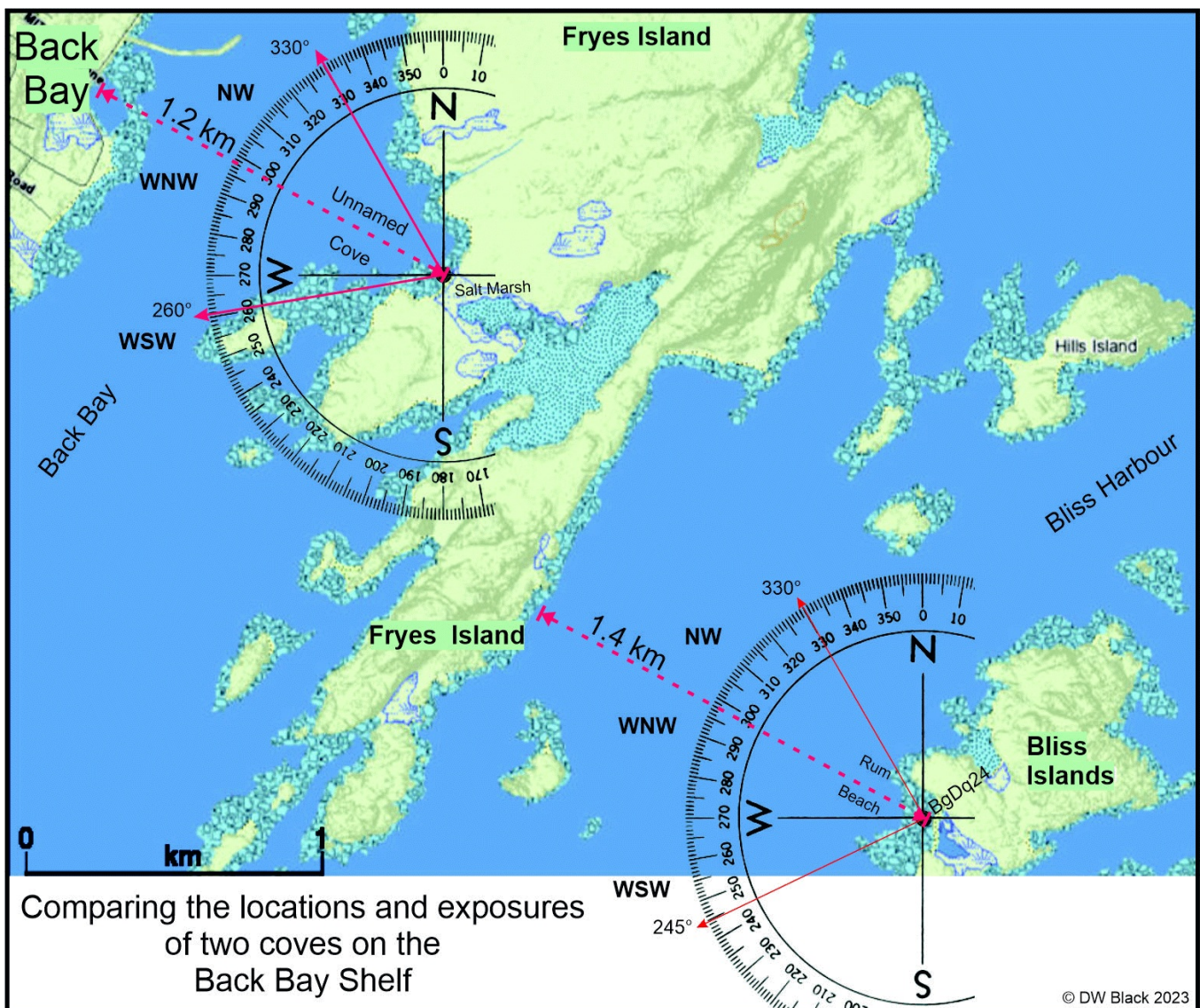


Figure F14: Comparing the geomorphology and exposure of Rum Beach and the unnamed cove on the Back Bay Shelf (base map from GeoNB).

includes an extensive low-gradient intertidal zone exposed to the west and northwest across the channel between Fryes Island and the mainland. The intertidal zone is separated from the adjacent salt marsh by a crescentic storm beach of gravel-sized sediments pinned between bedrock outcrops. The salt marsh lacks a pond; however, at its eastern end, the marsh drains into another low-gradient intertidal zone.

I confidently predicted that if this cove on Fryes Island was examined, Terminal Archaic artifacts would be found there. However, my efforts to visit the place were stymied by the vagaries of tides and weather and by the fact that UNB no longer has a research vessel. Moreover, I have reached an age where cruising around in small boats and clambering around in intertidal zones are activities not undertaken casually. So, as things transpired, avocational archaeologists Judy McGovern and Mikki Hatt visited the cove in my stead. Figure F15a shows what they found when they landed their boat.

*Conclusion:* The projectile point (Figure F15b) is not a classic example of a Terminal Archaic type. However, it has many of the characteristics of Terminal Archaic bifacial tools: dark volcanic material, squarish stem, asymmetrical stem–shoulder configuration and asymmetrical blade retouch. And, at any rate, it is different from the sorts of artifacts typically found eroding from shell-bearing sites on Fryes Island (see, e.g., Abbott 2020:65–69). This projectile point, and the flake/blades from Marble Island (Figure F12) and Jameson Island (Figure F13), suggest that systematic searches using the locational model presented above will reveal more Terminal Archaic intertidal assemblages in the Quoddy Region. I leave that work for future archaeologists.



Figure F15a: Mikki Hatt and Judy McGovern found this stemmed projectile point in the upper intertidal zone soon after they landed their boat in the unnamed cove on the west side of Fryes Island.

Figure F15b: The projectile point is made of dark flow-banded volcanic and exhibits an asymmetric triangular blade, pointed shoulders, a square stem and a straight base. It may be a relatively small Broadpoint that has undergone considerable blade attrition through use (e.g., Boudreau 2016:84, 154).

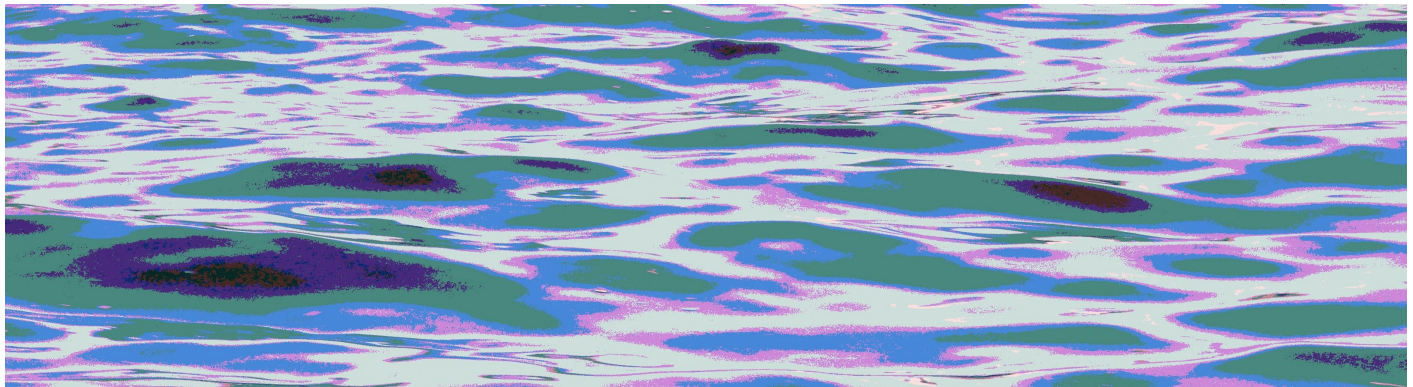


### Postscript 2023

The bulk of this monograph is the same as the 2018 version. I have made minor editorial changes and added references to a few additional publications. My purposes in extending the monograph are: 1) to acknowledge the continuing contributions of avocational archaeologists to Quoddy Region research; 2) to highlight some relevant finds made during the past several years; and 3) to show that the locational model for Terminal Archaic intertidal assemblages I presented in 2018 has predictive power. In the original version of the monograph, I argued that sites like Rum Beach are under-represented in the Quoddy Region archaeological inventory. I have added Appendix F to substantiate my claim that targeted archaeological surveys will increase the number of known Terminal Archaic intertidal assemblages.

None of the research reported here would have been possible without the friendship, cooperation and passion of avocational archaeologists. Here, I particularly wish to thank Mikki Hatt, Judy McGovern, Patti Ramsey, Austin Paul and Chad Abbott for sharing their finds and giving me permission to use their photos. And I applaud Chad Abbott for publishing his (2020) book of Charlotte County artifacts. Alas, Bob Bosien died while I was completing this version of the monograph and so my final words here must be for him.

Bob epitomized responsible and responsive avocational stewardship of the past. He became involved in archaeology as part of the BIAP while he was skipper of the UNB research vessel *Mary O*. After his retirement, archaeology became one of his main preoccupations. Bob had a keen eye for finding stone tools and developed astute instincts for where to look for them. He collected impressive assemblages of artifacts from intertidal zones at Deer Island Point and elsewhere in the West Isles, and assembled a substantial library of archaeology related books and papers. Bob could be competitive about collecting, but he was unfailingly generous to other collectors, as he was to my students and I, sharing his encyclopaedic knowledge of the Quoddy Region and loaning portions of his collection for research projects and displays. I miss his dry wit, his infectious enthusiasm, his excited telephone calls and, most of all, sitting with him on his deck, looking at the water, looking through his artifacts, looking into the past.



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