

# THE ARCHAEOLOGY OF ST. MATTHEW ISLAND, BERING SEA

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**Abstract:** St. Matthew Island in the Bering Sea is located some 322 km west of the western Alaskan coast. Previous investigations of this remote island had securely identified only historical human occupation. The 1997 expedition to the island also pinpointed three historical archaeological sites and discovered the Pottery House site (XSM-001); a single house pit feature with associated storage facilities. Radiocarbon dating and ceramic analysis demonstrate that this site is a late prehistoric Thule occupation and therefore expands the previous geographic boundaries of western Thule.

**Key words:** Thule, pre-contact, historical

## INTRODUCTION

This paper summarizes the results of the 1997 archaeological investigations of St. Matthew Island in the Bering Sea. The principal goal of this archaeological expedition was to locate any evidence of past human occupation on St. Matthew Island. During survey of the northern/northeastern part of the island's coast, three historical sites were identified; the Bull Seal Point site, (XSM-002), the Cabin site (XSM-003), and the Firewood site (XSM-004). Prior to this investigation, only historical sites had been identified on St. Matthew Island (Dixon 1979). However, the Pottery House site (XSM-001), proved to be a prehistoric Late Thule occupation which therefore expands the boundaries of western Thule (Dumond 1977, 1984b) to include this remote island in the Bering Sea.

## ST. MATTHEW ENVIRONMENT

Sponsored by the United States Fish and Wildlife Service (USFWS) Anchorage office, The first author accompanied an interdisciplinary team of scientists to survey and collect data from St. Matthew Island from July 18 to July 26, 1997. Heading north from the port of St. Paul, it took the USFWS Motor Vessel *Tiglax* twenty-five hours to reach St. Matthew Island. The island has an enchanting yet foreboding landscape with its extensive thin sandbars, sea cliffs, and difficult waters attested to by the rusting hull of a Greek tanker that went aground in the early 1980s.

The island is located approximately 442 km north of St. Paul Island, 322 km west of Nunivak Island, 523 km south of St. Lawrence Island, and 480 km east of Asia (60°30'N 173°30'W). Based largely on descriptions provided by Henry W. Elliott and Lieutenant Washburn Maynard during their 1870s visit to the island, this long, narrow island is one of the most striking land forms in the Bering Sea (Elliott 1886, 1896, 1898; Maynard 1898). Elliott called St.

Matthew geologically "the most interesting" island he encountered in Alaska (Elliott 1898:192). St. Matthew is 35 km long and surrounded by two smaller islands. To the northwest is Hall Island (10 x 5 km) separated from St. Matthew Island by the narrow (3 km) Sarichef Strait, and to the south of the main island is Pinnacle Island, an active volcanic cone which last erupted in 1870 (Maynard 1898:307).

From a distance St. Matthew Island looks like several small islands in a row, but low spits and bars connect the various parts of the island. Along the interspersed gravel beaches with modest bays and coves, are abrupt, perpendicular rises of metamorphic and igneous rock of which Glory of Russia Cape on the northern end of the island is the tallest at 2373 m above sea level. The grandeur of these landforms could not be fully appreciated for the "vast bank of fog" (Elliott 1886:463; Selkregg 1976) that continually covers the island during the summer months. The weather during this field season was typical of the Bering Sea islands in July, the days on this "damp and sunless" (Maynard 1898:164) island were cool, breezy, and misty.

The island is dotted by many lakes and ponds and numerous small streams in which Elliott and Maynard reported brook trout (Elliott 1898; Maynard 1898). Elliott believed there would be "land-locked salmon" in the small lakes, although none were caught (Elliott 1886:462; Maynard 1898). The interior of the island consists of rolling hills covered with maritime tundra fauna of lichen, mosses, grasses, and extensive carpets of summer wild flowers. During Elliott and Maynard's island exploration curious "dome-like" rises of peat struck them as Aleut style houses, but none were identified as cultural structures (Elliott 1886:462).

The sea cliffs that dramatically rise from the Bering Sea are home to tremendous numbers of sea birds including northern fulmars (*Fulmarus glacialis*), pelagic cormorants (*Phalacrocorax*



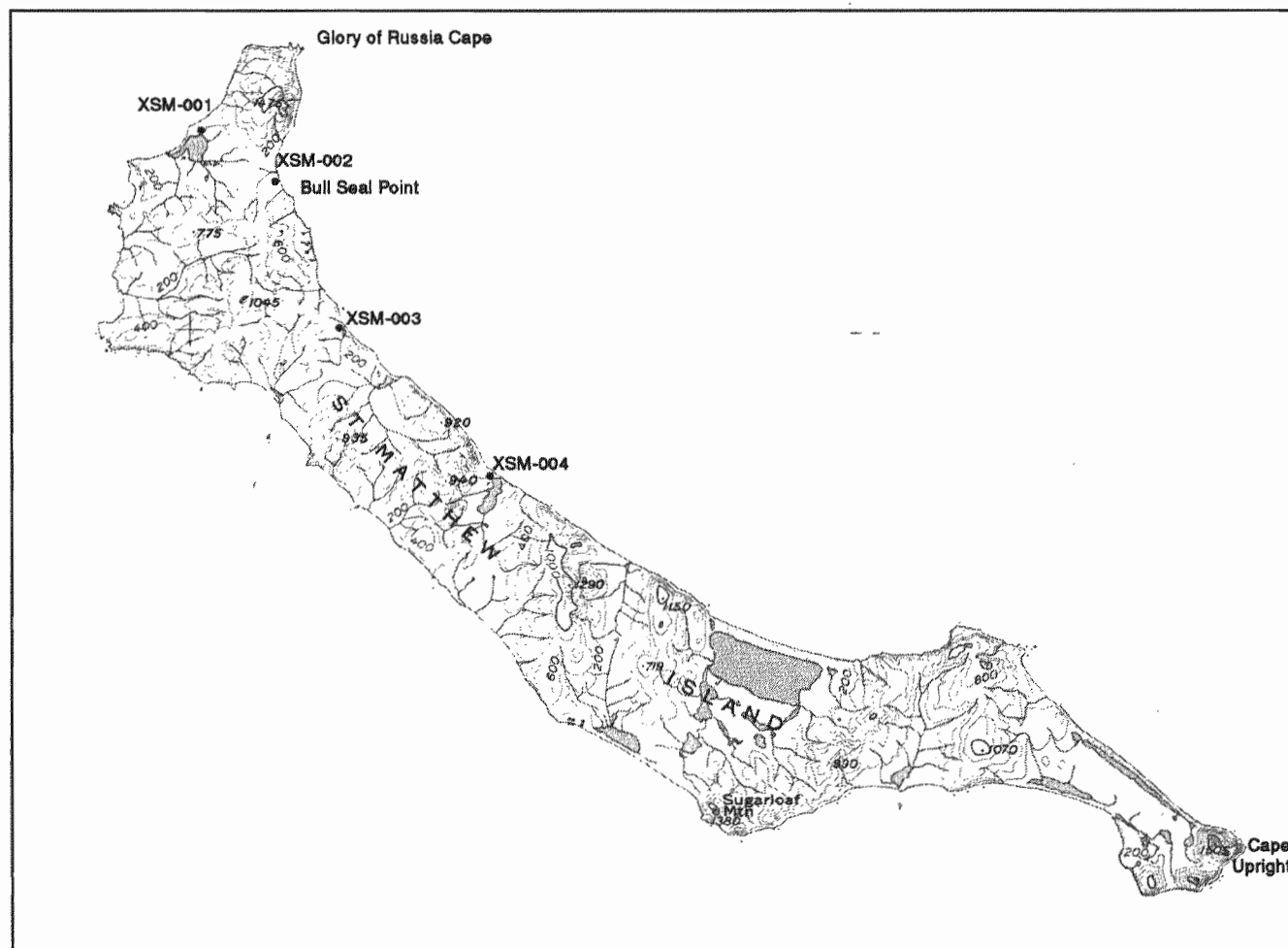


Figure 1: St. Matthew Island

*pelagicus*), puffins (*Fratercula* spp.), auklets (Family Alcidae), murres (*Uria* spp.), and black-legged kittiwakes (*Rissa tridactyla*) (Sowls et al. 1978; Selkregg 1976). The small ponds and lakes are home to common eiders (*Somateria mollissima*), Canada geese (*Branta canadensis*), sandhill cranes (*Grus canadensis*), and red throated loons (*Gavia stellata*) (Maynard 1898).

The most common sea mammals are the walrus (*Odobenus rosmarus*) and the largha seal (*Phoca largha*) (Sowls et al. 1978). Terrestrial inhabitants today are the copious vole (*Microtus* sp.) and arctic fox (*Alopex lagopus*) (Selkregg 1976). Noteworthy both on St. Matthew and Hall Islands, but not present today, was a large colony of polar bear (*Ursus maritimus*). According to William Dall, passing whalers called St. Matthew "Bear Island" (Dall 1870:249).

Although St. Matthew Island had not been systematically studied before Elliott and Maynard, the island was inhabited by an ill-fated group of Russian and Aleut hunters that stayed on the island during the winter of 1810-1811 (Elliott 1886; Dall 1870). This unfortunate group was stricken with scurvy, which killed four of the five Russians (Dall [1870:1816] asserts that all of the Russians died); and Elliot

(1886:1874) reports that all seven Aleuts lived. Elliott and Maynard claimed to identify the “ruins of those huts which had been occupied by this unfortunate and discomfited party of fur-hunters” (Elliott 1886:464).

## PREVIOUS INVESTIGATIONS

Vitus Bering first identified and named St. Matthew Island in 1741, and it was later rediscovered by Cook in 1778 (he attempted to rename it Gores Island) (Elliott 1898; Maynard 1989). It was not until 1874 that the island was formally surveyed by Elliott and Maynard (Elliott 1886 1898, 1896; Maynard 1898; Anchorage Historical and Fine Arts Museum 1982). According to Elliott the two men "surveyed and walked" over the entire coast-line of this "hitherto unexplored spot" (Elliott 1886:464). The men made and reportedly submitted a chart, but it is since "missing" (Maynard 1898:307).

Not until 1976 was an archaeological survey of St. Matthew Island conducted. E. James Dixon and his five-member crew surveyed much of the eastern half of the island during an eight-day



stay in July of 1976 (Dixon 1979). Dixon was primarily interested in locating evidence of Pleistocene occupation in the island's interior, not in Holocene coastal occupations. During their survey they identified trappers' cabins (some identified by aircraft), U.S. Coast Guard camp occupations (a lean-to and a station), and a possible site indicated by a portion of *in situ* baleen on a log dated AD 625  $\pm$  140 (Dixon 1979: 130-132). Although Dixon and his crew found no secure indication of early human use of St. Matthew Island, he does note that an assemblage of pottery collected by USFWS biologist Dave Klein during a reindeer survey may indicate very late Eskimo settlement evidence (Dixon 1979).

## FIELD METHODOLOGY AND FINDINGS

The work conducted during the brief 1997 field season consisted of survey, mapping, and test excavation. On the first day of survey along the northern and northwestern tip of St. Matthew Island, evidence of prehistoric human presence was found (Pottery House site, XSM-001). The ensuing survey of two miles of the northeastern coast revealed three historical sites. Test excavations were conducted at the Pottery House site, Bull Seal Point site, and the Firewood site. Excavations were completed using a trowel and shovel. Bulk samples were collected and brought back to the University of Wisconsin, Madison Experimental Archaeological Laboratory for cleaning, sorting, and analysis (Frink 2000). Recovered ceramics were analyzed by Amy Rosebrough (Rosebrough 1998), and faunal remains by Megan Partlow (Partlow 1998).

### Pottery House site (XSM-001)

While surveying the northwestern end of St. Matthew Island, Douglas Causey (Museum of Comparative Zoology, Harvard University), Marie Sutherlin (Senior Scientist, Cambria Biosciences), and the first author located the Pottery House site. A single house pit feature overlooks the Sarichef Strait, and affords a grand view of Hall Island. The house is set on a relatively rocky incline that gently slopes down to a steep sea cliff, which sharply drops to the bay below. To the south of the site is one of the larger lakes on the island and to the east surrounding the lake is an extensive marshy area. To the north of the site rise the impressive hills of the northern end of the island.

The single rectangular house pit is located on the innermost of three beach ridges some 44 m from the sea cliff. The 3 x 2.4 m and .6 m deep depression has a slight surrounding berm and a sloping entrance which faces northwest and directly looks out over the Sarichef Strait. Use of whale is evidenced by a 5.6-m rib that lay on the surface and extended out from the entrance of the house and a 2.9-m rib that rested on the surface of the house pit.

Adjacent to the house remains are two smaller pits which may have been used for storage. A 5 x .6 m tunnel-like depression lead to a round .8m x 1.15m and .8m deep pit and a second circular depression (1.7 x 1 m and .3 m deep) was positioned 7.4 m northeast of the house. This pit had whale vertebrae on top of the pit surface. There are several round depressions just to the south of the site, nearer the large lake, which may indicate human activity. According to one of the crew botanists, Dave Murray (USFWS), the vegetation within and surrounding these pits could possibly indicate cultural disturbance. Species inhabiting the surface of the house feature included *Oxyria digyna* (Mountain Sorrel), *Sedum rosea* (Rosewort), and *Artemisia arctica* (Wormwood). Test excavation revealed no sign of human activity.

A T-shaped trench was dug into the house in order to examine stratigraphy and recover cultural remains and dateable materials. The TI trench bisected the house on the east to west axis (2.4 x .2 m) and the TII trench was cut from the northern edge of the TI trench to the entrance tunnel (1.5 x .2 m). Both trenches were dug using a shovel and trowel and hand screened, with bag samples retrieved.

Most of the remains identified in the trenches were wood, and bone (much soft and unretrievable), and pottery sherds. Cultural features included an apparent griddle stone on the east side of TI at .27 m below the surface, which was blackened (a soil sample was retrieved and is slated for chemical analysis). This same flat stone (only partially exposed in the trench) had a concentration of pottery next to it. In the center of TI was a large rock which lay on the floor at .34 m. Adjacent to this large rock and under another smaller rock (at .25 m below surface) was a small assemblage of charcoal and pottery sherds. On the western edge of TI was a horizontally positioned piece of wood that may have indicated part of a bench, and a small pit of bone, charcoal, and wood, which extended from .3 to .35 m below the surface. Sterile soil and gravel was reached at .45 m below the surface.

Within this trench were thick deposits of wood and bone with some rocks and a concentration (.3 m below surface) of charcoal, calcined bone, and pottery fragments. Quite surprisingly, among these relatively scant remains, no lithic artifacts were recovered from either trench. (This lack of identification of lithics most likely is due to the small sample size.) Two calibrated radiocarbon dates were obtained from the Pottery House site, both based on wood charcoal samples. The first was from .35 m below surface and gave a calibrated date of 350  $\pm$  60 BP or AD 1440 to 1665. The second, retrieved from .3 m below surface revealed a calibrated date of 430  $\pm$  50 BP or AD 1575 to 1625. The description and analysis of the ceramics and bone recovered from the site are reported on later in the paper.



## Bull Seal Point site (XSM-002)

The Bull Seal Point Site is located on the northwest side of the island and is positioned near a small fresh water spring. The main feature of the site is a rectangular depression (5.3 x 3.3 m and .35 m deep). There was noticeable vegetation change within the pit feature, and a slight berm surrounded the dug in floor. Within the feature were deteriorating wood pieces that most likely were structural posts. Two .2 x .2 m and .35 m deep test pits were dug; TPI in the southwest corner produced charcoal and TPII was excavated in the northeast section and produced charcoal and a metal nail. On the landscape adjacent to the pit feature were 17 perpendicular wood supports that indicate further cultural activity at the site.

Sample	Measured $^{14}\text{C}$ Age	$^{13}/^{12}\text{C}$ Ratio	Sigma	Calibrated Result
Beta 111765	350+/- 60 BP	-26.1	2	AD 1440 to 1665
Beta 111767	430 +/- 50 BP	-24.6	2	AD 1575 to 1625

**Table 1:** St. Matthew Island Pottery House site (XSM-001) radiocarbon dating analyses (Beta Analytic Inc.)

## Cabin site (XSM-003)

The Cabin site was identified by Kevin Winker (Curator of Ornithology at the University of Alaska Museum) and the first author during a daylong survey of the northeastern coast of the island. Along the gravel covered shoreline, between two precipitous headlands and along a brackish basin is nestled the Cabin Site (GPS 60 30'10"N 172 52'75"W). This site contained a single feature (4 x 3.5 m and .6 m deep) covered by a pile of fallen wood beams, undoubtedly a collapsed semi-subterranean historical cabin. Inside the rectangular pit was a wooden doorframe and adjacent to the pit feature stood a wooden sawhorse.

## Firewood site (XSM-004)

The ephemeral Firewood site is located near the gravel coast between two sheer headland rises and next to a brackish and shallow pond. The only cultural feature was two erect pieces of wood that apparently were used as foundations for the stacking of cut firewood. Several test pits revealed no cultural materials.

## ST. MATTHEW ISLAND MATERIAL ANALYSIS

### Ceramic analysis

Ceramic remains were the most common artifact recovered from the Pottery House site. All of the forty sherds were cleaned of residue remnants (all residues preserved for future analysis) and then washed, air-dried, and sorted according to provenience and

checked for possible refitting. A solution of acetone soluble B-72 adhesive was used to refit sherds. A sherd identification form and identification number were assigned to each sherd. A high powered incident light microscope was used to examine temper and paste of each sherd.

As shown in Table 1, the method of manufacture is likely a mixed coil and slab construction with paddle and anvil thinning. Sherds had a conspicuous proclivity to exfoliate. Temper particles for these moderately to heavily tempered vessels were rounded to subangular particles (range of size between 0.25 to 4 mm) of quartz, feldspar, agate, and basalt. One displayed the impression of vegetal fiber (grass) temper. The paste of these dark gray to dark gray-brown sherds is granular and slightly permeable but in general they are well fired and solid. The interior facades range from a gray to tan or buff, exterior surfaces are dark gray and black with carbon encrustations. The rim pieces are invariably a lighter shade than the basal sherds. All of the surfaces are smooth (with no paddling impressions) with pitting where the temper particles have fallen out. Thickness estimates for the body sherds ranged from 0.6 to 1.1 cm with an average thickness of 0.8 cm. The thicker rim sherds ranged from 1.0 to 1.4 cm at the lip. No complete basal sherds were collected; however, exfoliated basal sherds denote a thickness greater than 1.0 cm. Although there were no complete vessels acquired, based on one substantial basal segment, another sizeable body fragment, and two small simple rim sherds, it is assumed that the residents of the Pottery House site used a flat-bottomed round jar with slightly outflaring walls. In addition, a single body sherd with a sharp bend may also imply the presence of a strongly shouldered or constricted-orifice form.

The ceramic remains of St. Matthew Island fit most obviously into a late Thule type, circa A.D. 1450 or later after the introduction of gravel temper and prior to the shift in wall thickness and the conversion to rounded basal forms (Dumond 1977). Initial Thule ceramics tend to be thick-walled with gravel-temper and rounded bases. Later ceramics, like those found on Mainland Alaska (Yukon Line and Dot and related forms), Nunivak Island,



Vessel Form	Flat-bottomed jars with slightly out-flaring walls. Some vessels may exhibit angular shoulders and/or constricted orifices.
Temper	Grit; rounded to sub-angular particles of quartz, feldspar, and basalt. Rare impressions of vegetal fiber inclusions. Sand present as natural inclusion in clay body.
Paste	Granular and porous, with tendency to exfoliate. Generally well-fired.
Color	Ranges from dark gray to tan/buff.
Thickness	Lip Thickness: 1.0 to 1.4cm Body Thickness: 0.6 to 1.1cm Basal Thickness: >1.0cm
Manufacture	Mixed coil and slab manufacture with paddle and anvil thinning
Surface Treatment	Smoothed
Decoration	None noted.
Temporal Placement	Probable Late Thule (post 1450).

**Table 2: St. Matthew Island Pottery House site (XSM-001) ceramic assemblage**

**Table 3: Faunal remains from the Pottery House site (XSM-001)**

Class	Taxon	Common Name	NISP	MNI	Weight (grams)
Aves (birds)	<i>Phalacrocorax</i> spp.	cormorant	1	1	1
	<i>Fratercula</i> spp.	puffin	5	1	1
	Unidentified bird		1		1
		Total Bird =	7	2	3
Mammalia (mammals)	<i>Alpoex lagopus</i>	Arctic Fox	22	1	9
	<i>Ursus maritimus</i>	Polar Bear	9	1	129
	<i>Odobenus rosmarus</i>	Walrus	4	1	125
	Cetacea	Whale	8	1	592
	Unidentified mammal:				
	fox-size	—	2	—	1
	bear/walrus-size	—	43	—	421
	unknown size class	—	150	—	77
		Total Mammal =	238	4	1354
Total			245	6	1357

and St. Lawrence Island are thinner and again have flat-bottomed forms (Dumond 1977; Oswalt 1952a; Nowak 1988).

## Faunal remains

A total of 245 bones were recovered from the Pottery House site. The taxonomic distribution is given in Table 2. Over half (51%) of the faunal specimens are blackened, and an additional 8% are burned to a white color (calcined). The majority of these burned specimens (98%) were recovered from TII at the base of the slope, between .35 and .43 m below surface. The scorched and calcined specimens were fragmentary, and could be identified only as mammalian.

No butchery or carnivore modifications were apparent on any of the specimens, although the weathered surfaces of the bones may be masking alterations. The majority of the bones (97%) are mammalian, represented mainly by fragments that are not identified to either element or specific taxon. Identified mammals include whale (eight fragments from unidentified element (s)), Arctic fox (*Alopex lagopus*), polar bear (*Ursus maritimus*), and walrus (*Odobenus rosmarus*). The remaining seven specimens from the site are bird remains, including cormorant (*Phalacrocorax* sp.) and puffin (*Fratercula* sp.). All of the bird bones were collected from the east area of TI.

The identified taxa at the Pottery House site were most likely year-round residents in the St. Matthew Island group. Therefore, the faunal data fails to accord direct evidence of season of site occupation. Thule faunal assemblages are known to be highly variable (Saleeby 1994), and the small Pottery House assemblage falls within this range of variation.

## CONCLUSION

Based on the radiocarbon dates, the style and temper of pottery, and general description of the house feature, this research demonstrates that St. Matthew Island was indeed occupied by pre-contact Thule people. What is not known is why and for how long the Pottery House site was occupied. What would be a motivation for occupying an island that is extremely remote and quite likely had polar bear as year-round residents? A fair interpretation must include the fact that the entire site was not excavated in the interest of future research. The relatively small sample size and future surveys of the island may have profound implications for the eventual interpretation of the site and of occupation of St. Matthew Island in general.

With that caveat in mind, given the absence of lithics and in general the low artifact density in comparison with other Thule assemblages, it seems reasonable to suspect that the Pottery House site was a short-term occupation. In addition, although the entire coastline and interior have yet to be surveyed, much of the island

has been walked over and checked for any human settlement, and prior to this survey, only historical sites had been identified. To what degree St. Matthew Island was used prehistorically is still a question. It is tempting to assert that this site indeed may be an occupation anomaly. However, recently, the first author was told by a resident of Nunivak Island that years ago on a very clear day, he could see St. Matthew Island. When told that a Thule house pit had been found on the island, he recalled old stories (that were not being told much anymore) of Nunivak Island hunters traveling to the island. Furthermore, there is the Chevak/Hooper Bay story of a hunter named *Kuvarrpak*, or "the big net", who drifted out to sea on a piece of ice. He returned two years later and is thought to have possibly lived on St. Matthew Island.

Because of the minimal amount of work that has been done and the potential that this new discovery offers, St. Matthew Island and the surrounding group clearly warrant an additional intensive survey effort in order to understand the spatial and temporal extent of human occupation on this Bering Sea outpost. It is reasonable to believe that there are more pre-contact and post-contact sites that have yet to be identified. With further collection of data and increasing detailed analysis and interpretation, the story of human occupation on St. Matthew Island will continue to emerge.

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