

## Appendix H



USFWS

*Fall colors at the refuge*

# Cultural Resources Report

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## **Introduction**

Humans have played an integral role in the environment within and beyond the boundaries of Rachel Carson National Wildlife Refuge since the deglaciation of the Northeast about 13,000 years ago. The refuge contains diverse ecosystems that have provided humans with wide ranges of flora and fauna for them to subsist upon. The landscape at Rachel Carson has been dynamic, as a result of changes in the environment during the end of the Pleistocene and throughout the Holocene. Humans have also caused anthropogenic changes upon the landscape throughout history by their choices about where and how to foster their livelihood. They have been active agents in species representation in the biosphere through choosing which flora and fauna they exploit, clearing land by fire to provide fresh, green forage for deer, and clearing large expanses of land for farming in historic times. Each generation has acted upon those landscapes differently than the previous, creating subtle or obvious changes which affect future environments.

Because professional archaeologists have surveyed less than 1 percent of the refuge, only 49 archaeological sites have been recorded. Of those, 13 are eligible for inclusion in the National Register of Historic Places. One study (Will et. al. 1995) identified several land forms that may contain archaeological resources dating as long ago as 11,500 years. The various periods described below outline the cultural periods that are either directly represented in archaeological site records, or most likely exist within the refuge boundary, but have yet to be identified. Each section identifies cultural attributes that can be extrapolated to represent what occurred on the refuge through time.

The Maine coastline has never been static. It will be slightly different tomorrow and next year, and was vastly different 5,000 and 12,000 years ago. Toward the end of the Pleistocene glacial epoch, the Laurentian ice sheet flowed south-southeast across the present coastline to reach a terminal position in the Gulf of Maine at Georges Bank some 18,000 to 20,000 years ago (Hughes et. al. 1985). The ice began wasting, and is believed to have receded to the present coast, sometime between 13,800 and 13,200 years ago (Stuiver and Borns 1975).

## **Geologic setting**

As the ice receded from a landscape that was still isostatically depressed by that colossal glacial weight, marine waters flowed well into the interior of present-day Maine. Plumes of fine rock flour flowed from the ice margin, spreading and blanketing the till with silty clay sediments across much of the refuge area. Those deposits have been termed the “Presumpscot Formation,” and their internal characteristics, fossil assemblages and chronological relationships with other surficial materials have greatly enhanced understanding of the evolution of the present landscape.

Moraines mark standing positions of ice retreat in areas of the refuge, such as along Goosefare Brook (Clinch and Thompson 1990a). Proglacial sandy outwash moved out of the ice in meltwater streams, filling valleys or forming deltas in areas such as the refuge center at Little River. Finally, as landscape rebound exceeded sea level rise, the retreating ice sheet was grounded (Thompson 1982, Smith and Hunter 1989), and the retreating sea produced shoreline features as well as a sandier surface to the Presumpscot Formation throughout much of the refuge (Clinch and Thompson 1990a, 1990b; Hildreth 1990a, 1990b; O’Toole et al. 1988).

The refuge Falls within the “arcuate embayment” compartment of coastal Maine that extends from Portland into New Hampshire (Tuttle 1960, Kelley et. al. 1988). That unique coastal area is composed of a series of arcuate (curved like a bow) sandy beaches separated by rocky headlines. In this sand-rich region, barrier beach spits and tombolos separate low water energy pools and salt marshes from the ocean. Salt marsh growth began to keep pace with slowing sea level rise during the Mid-Holocene. As a result, most existing salt marsh peat began to grow around 3,500 to 4,000 years ago (Kelley et. al. 1989). Thus, human living surfaces and water oriented activity areas created since that period may have been capped by landward accreting and vertically accumulating marsh peat in quiet environments.

The dynamic nature of the Maine coast has provided a challenging and exciting environment for humans during the past 11,500 years. The changing landscape upon which humans acted required intimate knowledge of flora, fauna, climatic and hydrologic cycles for survival. Human subsistence strategies adapted to new environments,

expressed in their tools and social structures, which are somewhat preserved in the archaeological record. We can understand that variation by looking at each archaeological time period to analyze those changes expressed through the material culture.

## Prehistoric setting

### ❖ *Paleoindian (11,500-9,500 years before present (BP))*

The first inhabitants of Maine are labeled Paleoindians. The Paleoindian tradition is widespread throughout the Americas from Alaska to Tierra del Fuego. In some parts of the Americas, Paleoindians hunted now extinct mega fauna such as Mammoth, Mastodont, and *Bison antiquus*. In the Northeast, although available for part of the time, no mega fauna bones have been recovered from archaeological sites, only fish and smaller mammal bones, including woodland caribou and beaver. Recently, at the Nevers Site in northern New Hampshire, various kinds of water tuber type plants were recovered by Dr. Lucinda McGweeney, in a Paleoindian hearth (personal communication). Those finds, plus the lack of mega faunal remains at Northeastern Paleoindian sites, indicate that they were not practicing the subsistence strategies of their western counterparts, but were rather adapting to a more generalized subsistence pattern and exploiting the various flora and fauna of the Northeast. As more information is acquired and data recovery techniques improve, the Paleoindian diet will be better defined.



Most Paleoindian sites in the Northeast represent small numbers of people (5–15) traveling together. Those groups would have been composed of women, children and men, probably related to each other. They would live in areas for short periods of time and practiced a gathering and hunting subsistence strategy. In addition to gathering and hunting, they produced various kinds of tools to process their foods, plus items to express ideology, such as bone or stone beads (Gramly 1998). Their stone for making tools, would be acquired from sources as much as 500 miles distant. The most notable Paleoindian tool is the fluted point, unique to the Americas and, specifically, to Paleoindians. Therefore, it is useful to identify a site when other means, such as a reliable radio-carbon assay, are not available. By the end of the Paleoindian period, fluted spearpoints were replaced by smaller styles that lacked basal fluting.

There are a few very large Paleoindian sites that are unique to the Northeast. Those areas may have been staging camps for large groups initially arriving into the area. Large groups of people could travel into unknown terrain, and then subsequently disperse into smaller bands. Other theories on the nature of those large sites include aggregation camps for people to acquire mates, exchange exotic lithic raw materials, or perhaps communally hunt herd species, such as caribou (Dincauze 1995).

In Maine, archaeologists have identified only smaller sites. They consist of campsites that vary in size from less than 300 m<sup>2</sup> to 18,000 m<sup>2</sup>. Some of the best reported sites include Michaud, located in Auburn (Spiess and Wilson 1987), Vail and Adkins, located on the shores of Aziscohos Lake in western Maine (Gramly 1982, 1988), and Hedden, located on the Kennebunk Plains not far from the refuge (Spiess and Mosher 1994, Spiess et. al 1995). Shared characteristics among them include the use of very fine-grained crypto-crystalline rocks, such as chert, and a preference for a well-drained, sandy living area.

There is very little published evidence for late Paleoindian sites in Maine. Two sites recently have been found: one in the town of Turner, along the Nezinscot River, and the other in Oxford, near the Little Androscoggin River. They were excavated in 1993 and 1994, and have yet to be fully published. Both overlook small river drainages, and their sizes suggest short-term occupation by a band (Will et. al. 1995).



## ❖ The Archaic (9,500–2,800 BP)

Archaeological sites representing the Early and Middle Archaic periods (9,500–6,000 BP) are uncommon in Maine. In fact, archaeologists argued for many years about their existence in Maine at all (see Sanger 1977, Spiess et. al. 1983). During these periods, mixed softwood and hardwood began to replace conifer forests. Recent improvements in archaeological excavation methods and a growing awareness of regional geology have allowed archaeologists to identify Early and Middle Archaic sites.

Early and Middle Archaic sites are most commonly present in deeply buried alluvial deposits. In fact, many are found at depths of more than 1.5 meters (Peterson 1991). An Early Archaic site radiocarbon dated to 8,470 +/- 110 years BP (Beta 75010), and excavated by Dr. Richard Will in 1994, was discovered at a depth of 2 meters below ground surface along the Little Ossipee River in East Limington, Maine.



The Early Archaic assemblages in Maine differ from those found elsewhere in the Northeast. Many of the tool forms recovered are chipped and ground into shape from relatively soft rocks such as phyllite. Those tools contrast sharply to Paleoindian tools and Early Archaic tools elsewhere in both style and material type. Their projectile points usually have a stem on the base that has been ground and flaked. Some also have a notch in the center, creating a bifurcate base. Assemblages of ground-stone tools in association with pecking or hammering stones are fairly diagnostic and particular to Maine. Based on the distribution and frequency of Early Archaic sites, most likely the settlement pattern involved people traveling in small bands exploiting wetland-type environments where the most predictable food supplies could be harvested.



The Middle Archaic is more archaeologically visible than its predecessor, and sites are distributed both along the coast and the interior (Bourque and Cox 1981). The stone tools are similar to those found in other parts of New England. The first cemeteries appear during this time, indicating that people may be starting to identify a set territory. Visible cemeteries are clear markers that the land is associated with a certain group when visited by outsiders. The burials contain red ochre and grave offerings of ground stone tools, including woodworking gouges, celts, slate spear points and ground stone rods.



Based upon the diversity of the materials found at Middle Archaic sites, archaeologists can infer the people were building things such as dug-out canoes and sturdy dwellings. People had probably begun to establish seasonal rounds for gathering and hunting. They also were becoming more reliant upon coastal resources such as shell fish and fish. The population is also beginning to increase during this time.

Late Archaic sites are more numerous in Maine and they have been documented in York County (Will and Cole-Will 1985). During that period, between 6,000 and 2,800 years ago, an environmental transformation changed forest composition and the kinds of wild food plants and animals available for gathering and hunting (Will et. al. 1995). The best known archaeological group in Maine during that time is the Moorehead Phase, more commonly known as the "Red Paint People." That term was coined by Warren Moorehead who conducted extensive excavations throughout Maine in the early twentieth century (Moorehead 1922). He used the term to describe the extensive use of red ochre for burial ceremonialism, perhaps a tradition that began during the Middle Archaic. Numerous cemetery sites from this time period are known (see Willoughby 1898, Moorehead 1922, Snow 1969, Sanger 1973, Bourque 1976), but their interpretation of cultural affiliation and significance vary. Habitation sites are also recorded from a variety of locations including coastal shell middens, lake margins and along large and small waterways. The appearance of larger sites indicates that the population is rising and the people are living in one place for longer periods



of time. During the Late Archaic, there is evidence for marine resource exploitation, including the taking of swordfish (Bourque 1976), which also indicates that people are making vessels capable of short-term sea ventures.

During the Terminal Archaic period, another archaeological assemblage appears, which suggests that a new group of people moved into the region. Their material culture suggests a different life style than the Moorehead phase culture. This tradition has been identified as the Susquehanna tradition. This culture often cremated corpses rather than buried them, and their diagnostic tool kit included large chip-stone spear points rather than ground stone tools. Their subsistence economy seems to have been more focused on terrestrial rather than marine sources (Will et. al. 1995).



The relationship among the various cultures of the Late Archaic continues to be controversial among archaeologists. What is clear is that more than one distinct culture is present in terms of style of artifacts, population is increasing, a wide range of plants and animals are being exploited, and people are living in areas for longer periods of time. Territories are being established and expressed through culturally unique mortuary practices, and cultures are becoming economically stratified, in that some individuals are buried with prestigious grave goods, while others are not. Other questions regarding the cultural change are whether it was an indigenous change or if a new group of people moved into the region. What is definite is that a highly visible change occurred 3,900 years ago.

### ❖ Ceramic Period (2,800-500 BP)

The Ceramic Period refers to the time when pottery-making first appears in the archaeological record. In the Northeast and other parts of the country, this is referred to as the Woodland Period. Ceramics first appear in the Maine archaeological record around 2,800 years ago, and they persist until the time of European contact, when they were replaced with copper and iron kettles.

The environment during this time was very similar to modern-day environments (Davis and Jacobson 1985). Ceramic period sites are abundant, indicating a high population density that was semi-sedentary (Sanger 1979). The most visible type of Ceramic Period site is shell middens along the coast. Those contain the discarded shells of clams, oysters, mussels and quahogs, in addition to broken bone and stone tool implements, pot sherds and food bone remains, and sometimes human and dog burials (e.g. Spiess and Hedden 1983). Shell midden sites have been reported in several areas of York County including York Harbor and the York River (Mercer 1897, Will and Cole-Will 1985, 1986, Will 1995).

Ceramic period sites are also common in the interior along waterways and around ponds and lakes (e.g. Sanger 1979). They have also been found in upland areas in the foothills of western Maine (Eldridge et. al 1999). People during the Ceramic Period were living in villages and trading with people to the north, west and south. That long-distance trade is evidenced by the presence of Rhama Chert, which is only found in Labrador, and other exotic items present at Ceramic Period sites. By the end of the Ceramic period, historical evidence shows that the people of Maine were practicing horticulture. While their diet continued to include marine resources, game and wild plants, plants such as maize, beans and squash were grown. The Ceramic Period ends with European contact around 450 years ago.

## European Contact and History

Southern coastal Maine did not become the target of explorers until the first decade of the seventeenth century, although in the sixteenth century, a few Europeans probably traveled along the coast of Maine (Churchill 1978). The first explorer to extensively travel and record the coast of Maine was Samuel de Champlain in 1604. Sailing along the coast, Champlain observed that the Kennebec River was a major political and economic boundary for the natives of Maine. East of that line lived the Etchemin, a group who subsisted by hunting and gathering. West of that boundary lived the Almouchiquois, farmers who congregated in large villages (Will et. al. 1995).

The Almouchiquois were the northernmost Indians who planted the native trilogy of corn, beans and squash. In the 1600s, agriculture was not viable north of the Kennebec River, probably because of the shortened growing season due to the Little Ice age (1350–1650 AD). Although their settlement appeared to be a stable, traditional



situation to Champlain, in actuality it was not. Corn agriculture had only arrived about 700 years earlier, coming in from the south and west. At the time of introduction, it might have spread well east and north of the Kennebec River. However, the climatic cooling condition by 1600 meant that the northern limit of agriculture moved south to the Kennebec River.

Champlain drew a map of the lower Saco River, describing in detail the native settlement pattern of that time (Champlain 1880). A large, principal village was surrounded by agricultural fields. The habitation included a palisaded compound to protect the villagers and their crops from raiding tribes, principally the Micmac of present-day Nova Scotia and New Brunswick. Smaller villages or hamlets were strung along the shoreline, each with its own fields. Champlain indicated that Choacoet, the name of the village on the Saco, was a permanent establishment. However, other lines of evidence suggest groups may have dispersed upriver and into the interior from time to time during the year to take advantage of deer, moose, anadromous fish runs, and other seasonal natural resources (Baker 1986a:10-33).

The active village life depicted by Champlain quickly came to an end. A major intertribal war between the Indians of Maine and the Micmac devastated Choacoet and other settlements. The war seems to have ended about 1615, only to be followed by an even greater disaster. From 1616 to 1619, a European-introduced epidemic that rampaged through New England included the coastal tribes of northern New England. As a result of warfare and disease, the native population of coastal York County may have been reduced by as much as 70 percent from 1600 to 1620 (Snow and Lanphear 1988:15-33).

A smallpox outbreak in 1634 made further inroads on the population. The effect of these epidemics was so great that in 1640 John Winter observed that, aside from the natives at the mouth of the Saco River, there were no Indians within 40 or 50 miles of his post at Richmond's Island (Baxter 1884:III, 461). Aside from a greatly reduced village at Choacoet, only a relict population survived, scattered across the area. As early as 1623, Christopher Levett observed that along the banks of the York River was "good ground, and much already cleared, fit for planting of corn and other fruits, have heretofore been planted by the savages who are all dead" (Levett 1988:39).

The fields were not abandoned for long. A large influx of English settlers in the early 1630s began settlements in present-day Kittery, York, Biddeford, Saco, and Scarborough. Wells was first occupied in the early 1640s. The settlers principally occupied the land directly adjacent to the ocean and along other bodies of navigable waters. Although an occasional early settler did move into the interior to trade furs or cut timber, virtually all inhabitants live at or below the fall line of the numerous rivers until the eighteenth century (Will et.al. 1995). The refuge is located completely within this coastal margin, an area that has remained an important landform for settlement.

Most of this territory was the Province of Maine, granted to Sir Ferdinando Gorges. Gorges never visited his colony, relying instead on a series of lieutenant governors and agents to act in his stead. As a result, settlement and the formation of a sound government in the region suffered. Gorges divided Maine into a series of patents,

which were given to proprietors. Usually, there were two or more proprietors per lot, who were given the lands on the condition that they could plant a certain number of settlers within a specified time limit. In the 1630s, settlement proceeded slowly (Reid 1981).

In the 1640s, the English Civil Wars stopped migration to New England and led to a depression in Maine. Some settlers left for more prosperous colonies, or to return home. Indeed, in 1642 Lieutenant Governor Thomas Gorges returned to England to accept a commission in the Parliamentary Army. The Civil Wars also took the time and energy of Sir Ferdinando Gorges. When he died, his colonies were in a state of disarray (Baker 1994).

From 1652 to 1658, the Massachusetts Bay Colony established authority over Maine, a position which it held with several brief interruptions until statehood in 1820. Settlers rapidly moved into the Bay Colony's newest county of York. In fact, the large number of new arrivals in the late 1650s, 1660s and 1670s may in large part explain why hostilities broke out between the English and native Indians of Maine in 1676 (Baker 1986a). That conflict, generally known as King Philip's war, raged until 1678. During that time, all settlements in Maine north of Biddeford Pool were abandoned or burned by the Indians, and raids burned parts of other settlements as well.

Peace after 1678 was short-lived. In 1688, King William's War started, a series of colonial conflicts in which the French allied with Native Americans against the English. A lasting peace did not return until 1713. During this period, some settlements north of Wells were burned. Salmon Falls (present-day Berwick) was burned in a raid in 1690, and much of York was destroyed in the Candlemas Raid of 1692 (Reid 1981: 164-83). Later in 1692, the settlers of Wells held off a large combined force of French and Indians, but apparently only a small number of garrison houses actually survived that and subsequent attacks (Mather 1853).

The wars were equally disastrous for the Indians, whose village and fields were repeatedly destroyed by colonial militia units. Many natives died in combat or by starvation. Others migrated out of the area, seeking refuge in French-protected reserves on the St. Lawrence, or among their kinsmen on the Kennebec and Penobscot Rivers. A very limited native population had survived in parts of the region until the 1690s. After 1713, the only ones who remained were a small band on the Saco River, who apparently spent most of their time far upriver (Day 1981).

The time after 1713 is generally referred to as the Resettlement Period, when English families returned to abandoned homesteads and new settlers arrived in great numbers as well. Indian raids still occurred, and several wars would occur until the fall of France in 1760 (Clark 1970). That constant threat meant that settlement remained largely below the fall line in the coastal zone.

The coastal zone below the fall line was abundant in resources for the European settlers to make an adequate living. Saw and grist mills were constructed in strategic spots along the fall line and at tidal outlets. Coastal mud flats became prime spots for shipyards. River and stream banks were accessible, and thus became the first areas to be logged. Until better road networks were developed in later colonial time, the sea, rivers and beach served as the principal thoroughfares. Fishermen gathered along these rocky harbors, and farmers also used the area, harvesting salt water hay off the marshland and planting the adjacent uplands. Milling, shipbuilding, and salt water hay farming remained important economic activities until well into the nineteenth century. Thus, a variety of economic resources attracted people to the coastline (Will et. al 1995:14).

In 1760, the Maine frontier rapidly opened, with people pushing far inland (Leamon 1993). The process ceased during the American Revolution, but resumed in the 1780s and continued through the early nineteenth century (Smith 1988). Timber cleared in the interior made its way to the coast, where it was sawn into limber or used in the booming shipbuilding industry of York County. As settlers pushed inland, the coastal trading towns grew in size and importance. The conditions in Portland magnified that effect. Burned by the British in 1775, it took several decades for Portland to reestablish itself as the principal port of Maine. In the meantime, the coastal York County towns took advantage of their opportunity to become important regional economic centers (Butler 1986).

President Jefferson's Embargo in 1808 and the ensuing war of 1812 signaled the beginning of the end of the glory days of the York County ports. Still, some remained fairly active as either trading or shipbuilding ports until the 1840s. At that point, the shipbuilding industry began decline. The demand of increasingly larger ships shut out shipyards located in coastal York County, which did not have deep enough harbors or large enough facilities to build bigger craft. Farming also went into decline in the nineteenth century because small Maine farmsteads

could not compete with the growing agribusiness of the Midwest and West. The principal remaining business of coastal Maine was fishing.

By the late nineteenth century, tourism was beginning to replace most traditional economic activities in the refuge study area. Summer visitors were drawn to the coast for its cool climate, beaches, scenic shores, and relative lack of development (Brown 1992). As twentieth century tourism has thrived, the pace of development has quickened and closed in on the coastal margin that comprises the refuge.

The refuge contains 49 recorded archaeological sites, 13 of which are eligible for inclusion in the National Register of Historic Places. Only a small percentage of refuge lands have been evaluated for the presence of archaeological resources. The number of sites is surely going to increase as more archaeological surveys are completed. The land forms and various environments within the refuge have the potential to yield archaeological sites from Paleoindian through late colonial times. The refuge has provided habitats vital to humans for their livelihood, demonstrated by the artifacts they have left behind, whether a shell midden, a colonial farm site, or the remains of a nineteenth-century wharf or railway trestle.

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