Chapter 4: Cultural and Historic Resources

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Section 400: Introduction

1. In Rhode Island, thousands of years of use of the ocean and its resources have resulted in rich and diverse array of cultural resources underwater and in the coastal zone. These resources provide cultural, educational, recreational, environmental, and economic services that humans want and need. The significance, sensitivity, and non-renewable nature of cultural and historic resources and the special services they provide make them a challenging and important aspect of the Ocean Special Area Management Plan (Ocean SAMP) process.

2. During earlier periods characterized by lower sea levels, indigenous people inhabited, used and had an impact on the areas within the study region. Through maintenance of oral traditions and unbroken cultural practices, indigenous people in Rhode Island have retained an active cultural connection to parts of the Ocean SAMP study area and adjacent coastal places for thousands of years. Located at one of the historic maritime crossroads of New England and what was becoming known as the "New World," the study area has seen five centuries of increasingly intensive uses beginning with the arrival of Europeans in North America. Today commercial fishing, recreation, and transportation are among the principal activities.

3. Whether characterized by historians, archaeologists, or cultural practitioners as districts, sites, buildings, objects, or landscapes, cultural resources reflect thousands of years of human use of the Rhode Island marine environment. Submerged pre-contact tribal landscapes and historic shipwrecks, two of the most significant marine categories, have no direct parallels on land and yet have the greatest potential to add substantially to understanding Rhode Island's past. These resources also contain ecological as well as cultural and historical information, and many are integrated into marine ecosystems as structures or as parts of the ocean floor environment. Submerged archaeological sites and landscapes are non- renewable—once gone they cannot be restored.

4. While the Ocean SAMP study boundary addresses the offshore environment, and generally does not include the adjacent coastal areas, this chapter includes both submerged cultural and historic resources within the study boundary as well as an inventory of onshore cultural and historic resources within view of the study area. The viewsheds from onshore properties with cultural, historical, or tribal significance have a relationship with the Ocean SAMP study area and visual impacts to these properties must be considered.

5. The documentation of cultural and historic resources in this chapter represents information compiled at the time of release and should be used as a reference point for activities. Because of its far-reaching nature, efforts have been made to include a great deal of detailed information, rather than to risk missing potential impacts or issues by cutting it down too significantly. This chapter is deliberately structured to facilitate the incorporation of additional knowledge, new information, discoveries, and identification of culturally or historically significant landscapes, sites, or structures. Coordination and consultation with the relevant state, federal, and tribal contacts/agencies will be necessary.

Section 410: Historic Contexts and Cultural Landscapes of the Ocean SAMP Area

1. For thousands of years, people have lived along the coast of Rhode Island and ventured on its waters. From the time the shoreline as we know it today stabilized around 7,500 years ago, the ancestors of today's Narragansett Tribe established large settlements along the coastline of Narragansett Bay, around the salt ponds of the south shore of the mainland and on Block Island. Native American archaeological sites are located in the vicinity of the coast, and maritime resources played an important role in the lives of native people.

2. The Native Americans were followed by European colonists, who were attracted to and found plentiful natural resources in coastal areas, much in the way that today, worldwide, more and more people are moving into the coastal region within 50 miles of where the land and water meet. Social, economic and military activities and their associated infrastructure have left their mark on the Ocean SAMP region, and continue to bring additional developmental pressures year-by-year.

3. The following sections describe the known and potential cultural resources of the study area in terms of the specific historic contexts in which the resources were created. These contexts are defined by chronological period, by historical theme and by geographical area. In recognition of the extent to which human activities in the study area have been shaped by particular aspects of its geography, a number of these contexts, both marine and land-based, are described as "cultural landscape contexts." The use of cultural landscape contexts also recognizes that different cultures or user groups may interpret history and value places in different but equally valid ways.

4. Rhode Island has a long and valued tradition of studying and preserving historical and cultural heritage on land. The Ocean SAMP represents the first comprehensive effort to study the state's underwater and maritime cultural heritage outside of Narragansett Bay. Consequently, the contexts for maritime heritage offer more detail than the terrestrial contexts. (A fuller account of land-based resources can be found in the Rhode Island Historical Preservation and Heritage Commission's published survey reports for each of the individual towns.) The maritime contexts, which describe a new frontier for historic preservation in Rhode Island, vary significantly in their depth and detail. These differences represent the current state of knowledge about cultural heritage resources in the Ocean SAMP area. They identify gaps in survey coverage, historical knowledge, and cultural perspectives that researchers and prospective developers will need to address in the future. As knowledge and data relating to the Ocean SAMP continue to grow, the Rhode Island Coastal Resources Management Council will update these landscape contexts, or include new ones if required.

5. Only those aspects of Rhode Island history that influenced the Ocean SAMP area in major ways are covered in this analysis of cultural resources. Should significant new themes or cultural perspectives emerge in the future, new landscape contexts can be added to the Ocean SAMP document.

410.1 Pre-Contact Geological History

1. During the last major advance of continental glaciers in North America, known as the Wisconsinan Glaciation, or Wisconsin Glacial Episode, much of northern North America was covered with ice (the Laurentide and Cordilleran ice sheets). Around 24-26,000 years ago, when the ice reached it final southward maximum, the edge of the Laurentide glacier was located about three miles south of Block Island in the Ocean SAMP area. The margin of Laurentide ice extended westward across northern Long Island to northern New Jersey and then to the Midwest. The margin extended eastward to Marthas Vineyard and Nantucket and then to Georges Bank. Because of the vast quantity of water frozen in the glacial ice, the sea level at that time was approximately 120-130 meters lower than it is at present.

2. A tundra landscape, cold but habitable, would have extended to approximately the edge of the Continental Shelf. As the glacier retreated, the meltwater caused sea levels to rise, inundating this formerly dry land. During the glacial melting, freshwater lakes dammed by ice and/or glacial deposits were formed, including a large lake in what is now Block Island Sound. The glacial lakes in Block Island and Rhode Island Sounds had probably drained by 15,500 years ago, and perhaps earlier, when the rebound of the land began due to the land being uplifted because of the release of the weight from the overlying glacial ice.

3. It is possible that the ancestors of today's Native American tribes were living in this landscape, although no direct evidence for submerged terrestrial sites has been found in the northeast to date. The oldest known sites in North America date back to before 13,500 years ago—when the glaciers had already pulled back from what is now Rhode Island, but before sea levels had risen to their modern level. The oldest artifacts found in Rhode Island are several thousand years more recent. These sites and artifacts, however, are simply what has survived and what has been found—there may well be older sites, submerged by the glacier meltwater, located offshore.

4. Reconstructing the paleo-landscape is the essential first step to predicting the locations of submerged terrestrial sites. Section 420.3 of this chapter discusses paleo-geographic landscape reconstruction in more detail. The process of inundation was not a constant, gradual influx of water. Catastrophic landscape changes probably occurred as the dams of the freshwater lakes failed, and their waters flooded out. The rate at which the sea level rose changed over time, with periods of dramatic inundation. These turbulent processes, coupled with storm activity and the normal movement of tides and currents, have probably destroyed many submerged terrestrial sites. However, under certain circumstances, such as rapid flooding of post-glacial lake shores in closed depressions, drowned terrestrial landscapes (and any archaeological deposits contained therein) may have survived. Paleosols—ancient soils preserved beneath an overburden of later sediment—have been found through coring in nearby Nantucket Sound. Where such paleosols survive, evidence for human occupation might also be found.

5. Geological reconstructions allow archaeologists to identify places where submerged sites may have survived. In terrestrial archaeology, predictive models based on the locations

of known sites and on patterns of land use are used to identify areas considered sensitive for archaeological resources. Such models can provide some guidance in predicting the location of submerged sites—access to freshwater resources, for instance, appears to be a constantly useful predictive factor. However, given the relative paucity of data about the early paleo-Indian use of the landscape, constructing useful models for the human choices that would have played a role in site location is still an ongoing process.

410.2 Narragansett Tribal History

1. Understanding human settlements within and adjacent to the Ocean SAMP region before European colonization provides guidance into the potential for culturally relevant landscapes and sites in the study area. The indigenous people of New England belonged to many tribes, each with its own history. This section provides a historical context produced by the Narragansett Indian Tribe, the oldest known and still-living native culture in the State of Rhode Island.

2. The Narragansett Indian Tribe is the federally recognized and acknowledged Native American tribe in Rhode Island. Archaeological evidence and oral history of the Narragansett people suggest the Tribe's existence in the region for at least 30,000 years. (John Brown, NITHPO, personal communication)

3. The Narragansett Indian Tribe has maintained its cultural traditions and tribal organization in Rhode Island since the Tribe's first contact with European settlers in the early 17th century. The Narragansett Indian Tribe was recognized by the U.S. government in the Trade and Intercourse Act of 1790. In response to an action taken by the state of Rhode Island to "detribalize" the Narragansetts in 1880, the Narragansett Indian Tribe made continued efforts to challenge this State action during the 20th century, and attained formal federal acknowledgment as a Sovereign Nation and federally recognized and acknowledged Tribe of the United States government on April 11, 1983 (25 CFR, Part 83). Rhode Island state legislation was enacted in 1985.

4. Dr. Ella W.T. Sekatau is the present-day contact and source of oral history for the Narragansett Indian Tribe. Since the 1970s, Dr. Sekatau has served as the ethnohistorian for the Tribe, and she has been learning Narragansett history, language, religion, and medicine since birth. In addition, Dr. Sekatau is an approved Medicine Woman for the Tribe. (Herndon and Sekatau, 1997)

5. On April 15, 2010, Dr. Sekatau provided the following account of the Narragansett Indian Tribe's oral history and traditions, specifically for inclusion in the Ocean SAMP document. In addition, Dr. Sekatau provided the following references found in Section 450 of this chapter (Herndon and Sekatau 1997; Herndon and Sekatau 2003a; Herndon and Sekatau 2003b; Sekatau-Recipes; and Sekatau-Pottery).

    a. **Traditional Indian Prayer:** *Kawtantawwit taubotneanawayean wutche wameteanteaquassinish. Mishquatch maugoke*. Thank you Great Spirit for all the things that Mother Earth gives.

b. This historical report about the Narragansett People is short and will be accompanied by five publications, two published reports by Dr. Ella Wilcox Sekatau and Dr. Ruth Wallis Herndon and one report edited by Colin G. Calloway and Neil Salisbury. The report is not a page-by-page account; it simply talks about the activities of the Narragansett People of the past and their existence today, which in some cases has changed very little depending on the subjects, or changed a lot because of the circumstances of colonization for the past four hundred years. The author sometimes becomes very personal, but most times tries to avoid a line-by-line or detailed daily account. Any reader who is interested can take the references listed in the notes of the accompanying publications for more research or contact the Narragansett Indian Tribe Historic Preservation Office (NITHPO).

c. Explanations must be given with the uses of the words history and pre-history; historical and pre-historical. What has happened and what is happening with the Narragansett Indian people is ongoing history. The word pre-historical refers to the coming of colonist to this part of the world for the past five hundred years and their recordings. Numerical chronologies in many cases deny the evolution of people this side of the world.

d. The people who have become known as Narragansett returns to this area after going South with the stages of recession of the last Ice Age called the Paleoarchaic Era by some writers. For the next many thousands of years, the people hunted very large animals (i.e. and the varieties of smaller animals on the land). In this particular area there were deer, elk, moose, two types of bison, three kinds of bear, there were brown bear, black bear, and grizzly bear. There were rodents of all types and the felines and the canines. As long as these specimens lasted they were hunted by the people. The weather conditions dictated when the mammoth died out and the walrus no longer came this far south.

e. Enishkeetompauog minnimuussinnock people of the small bays and inlets and inland in what was to become known as Southern New England, Southeastern Maine, New Hampshire, Vermont, and Long Island, Southeastern New York and coastal wise South to what was to become known as Delaware had a lifestyle which was stable until colonization from people of other parts of the world. All of these areas and groups of the indigenous people were later called by names mostly by geographical areas were under the auspices of the royal sachems of the Narragansett Nation, mainly the five larger groups were Pawtuxet, Pocasset, East Niantic, West Niantic, Kauweesett, and Shauwommett which comprised the Narragansett nation.

f. When the first contacts and colonization of the early 17th century involved the nation of royal sachems of the land called by others as Narragansett, Canonicus, and Miantonomoh, were the older and younger sachems over all the groups before-mentioned. Many or most times depending upon the acquaintances or introductions to geographical areas, water courses, land, elevations, or weather conditions at certain times of the yearly habitation by non Indians were names referred to groups living there. This land covered by a very large area which included all what was to become known as Southern New England states, Long Island, Southeastern New York, and Southeastern Maine, New Hampshire, and Vermont.

g. After colonization of the 15th, 16th and 17th centuries, the colonial writers wrote and identified groups convenient for them to remember and identify as the centuries passed. We the Narragansett People know that our peoples evolved on this side of the world and did not come from elsewhere. Our existence depended upon what the territories embraced directly from the salt water, marshes, and sweet water ways that began from inland springs, ponds, and seeps. What the Earth Mother produced which included animal, fowl, amphibian, fish and the great varieties of plant life was used for the survival of people who lived according to the four main directions and the alternate direction of North, East, South, West, Northwest, Southeast, Southwest, and Northeast. The four seasons, the tides, the weather patterns of each season and the availabilities of survival materials for food, shelter, tools, weapons, utensils, decorations, and clothing all contributed to the native lifestyles.

h. The native wild turkeys were the beautiful bronze which weighed up to fifty pounds and the direct coastal and island white turkeys with a little black trim on the tails and wings in the Narragansett Bay Area. No one has written much history about the Blue Grouse in this area as well. The Blue Grouse did not do much flying so they got killed off early. They weighed in at twenty pounds. At the same time they were mentioned someone mentioned also the Dodo birds of another coastal area (the Island of Mauritius). The disappearance of these two kinds of fowl is a prime example of over harvesting. The disappearance of the blue grouse, native pidgeons, bison, as well as other fowl animals and plants contributed to destruction of ecosystems for the past four hundred years in the northeast. Narragansett have continued to use bird feathers of different kinds forever. The fur and wampum trade went hand and hand using local resources. The beaver, mink, muskrat, grey and red foxes, the three types of bear, catamount, lynx, raccoon and wolf which used to be plentiful until trade and shipments back to European countries either reduced the numbers or wiped out species. The wolf, lynx, and two species of bear are gone. Surprisingly, birds like the wild turkey were in great demand for food as well as their feathers for decoration. The local ducks and Canadian Geese which were good for food and used for some decoration we still have quantities of these fowl. The massive millions of native pigeons were used for food and sport so much that they no longer exist. Narragansett males in a few families still trap minks and muskrat, skunk and raccoon. In most cases they no longer eat the meat. They just sell the pelts. However there are many men non-Indian hunters and trappers. The beaver which disappeared in southern New England have been reintroduced in some areas.

i. Americans now raise domestic fowl like chickens, turkeys, geese which do well along coastal regions and inland. The stands of oak, walnut, pignut, chestnut, and black walnut trees furnished food for people and animals. Refer and research the places and towns in Washington County of what became known as Wickford, North Kingstown, Wakefield, Narragansett, and Westerly all of these places had access to the saltwater. Celebrations with other tribes took place at certain places specifically in days of the good month of late spring through harvest time when there was time for visiting and trade locally and inland. The Narragansett harvested great quantities of shellfish; oysters, quahaug, soft-shell steamers, lobster, razor clams, and four kinds of crab (blue shell, spider, rock and humpback), mussels, snails, and conch. All of these

shellfish depending on the size were smoked and dried for local use and trade. The Narragansett had a thriving business for shellfish for food and shellfish wampum making and decoration.

j. Many inland tribes of Indians traded their goods like copper, different kinds of stone for tool making for shells that they fashioned into wampum strings and belts which told tribal histories as did the Narragansett. Today the wampum decorations are made by Narragansett, many other Indians, and non-Indians for very successful business ventures. Surprisingly, since the 17th century the use of shell money was money needed by the Dutch, English, and Portuguese because many did not have the use of money from Europe. The uses of shell pearls found inside of oysters and sometimes clams and quahaug have prevailed for all the centuries. Naturally other kinds of shellfish have been used in many ways for decorations and recording by the indigenous natives and Americans.

k. Unlike the European colonists, the females and males were equals and were given that respect. Each had its respective responsibilities, jobs, duties, and needs. The women were responsible for the living quarters of summer individual family wigwams which were called wetu, for one building, or wetuomuck, for many buildings, because of the round shape of these family units. They were not placed close to each other. There was always space for gardens which the women took care of and enough undeveloped land in between to be able to have firewood and where small animals could be found. Only the garden areas where cleared for planting close by. The women were responsible for the care and early training of children with help of elders. The males were responsible for the hunting, most fishing, building of the framework for the summer and winter longhouses, and the brush fences around the summer homes and the great high palisades around the permanent/winter homes called longhouses (Who lived in the long houses? Everyone related to you on your mother's side of the family). The men were responsible for making the dugout and tree bark canoe for water travel inland and other places. The brush fences and high palisades were there to protect the homes from the larger types of animals which we will discuss later. The men were responsible for protecting people once colonization began. There were varied dialects spoken by the people. Man speaking to man was one dialect, woman speaking to woman was another dialect and then a general dialect was used by all when they were all together.

l. But a real change of male thinking took over after the males were cheated out of their jobs of defending land areas and water areas for trade, travel to visit other groups, to meet with government relationships. The governmental relationships we discuss here were with other tribes and their royal families. Any disagreements or disputes were settled in what we call today a democratic way. The introductions of new restrictions were adopted as well by other indigenous people in what became known as New England. In some cases, the males started to act like the colonist males. The colonists did not recognize women and after the native males had been cheated out of the normal things that they did, they had to feel important. However on the back of their minds was the thought that the women were the backbones of all groups. Most Indian males still believe in that fact today that women are the backbones of most native families, which is a fact.

m. The European invaders took over by wars and the diseases which were brought to this part of the world that killed the indigenous natives by the millions in North America, Mexico, Central and South America. The native people had no built in immunities from experiences with those diseases ever having been here. This is one of the logical explanations of the fact that our peoples evolved on this side of the world and did not migrate from elsewhere.

n. The salt waters gave much to the natives. The marshes around the sweet and the salt water, and even mixtures of sweet water joining saltwater, played a most important role in the existence in the Narragansett Indian peoples. They utilized saltwater fish, mammals, and shellfish as well as the sweet water fish, shellfish, and mammals. These creatures were used for food, clothing, parts of decorations, and shelter.

o. Plant vegetation products were not only used for food, but for clothing and shelter as well. We the Narragansett People are people who used the many trees and aquatic plants for shelter, protection, food, and decorations and medicine. Today some of the Narragansett still harvest certain plants. Bulrush from the freshwater marsh areas was used for interior house mats for walls. Cattails were used for exterior summer houses walls and fill for middle walls of the permanent or winter/longhouses. Trees growing in the coastal areas were used for framework of summer houses as well as the winter longhouses (maple, oak, white cedar, red cedar, chestnut, and walnut to mention a few that played important parts of buildings, interiors and exteriors). Cedar bark was used for canoes, mat making, twine making, clothing, black dye, disposable diapers, and sanitary napkins or rope and tump lines. White oak bark could be eaten also as well as sassafras for tea and medicine. The products of local nut trees in the coastal area; oaks, butternut, three types of walnuts, hazelnuts, were used for food and oils.

p. The so-called Woodland Era began around 1500 BC. According to modern writers, conclusions that the Narragansett nation's people had become more dependent on products from maritime resources is questionable. Questionable because the return north of the people after the recession of the Ice Age brought new ways of survival from the Southern climates. Gathering continued and agriculture of maize, beans, and squash called the Three Sisters added to dietary practices. The additional practice of raising the Three Sisters crops made life easier in the seven month preparation for the six months needs. Late March to early October was called the seven good months by the people and late October to early March were called the six months of need. Remember we are talking about the thirteen months on the Indian calendar, 28 day moon cycles during the four seasons of Spring, Summer, Fall, and Winter. Thirteen celebrations of Thanksgiving are still celebrated ceremonial by the tribal people with prayer, dancing, drumming, singing, and feasts. Activities of early, middle and late fall and winter are still practiced; i.e. the fish runs, the hunt of Indian summer, January thaw of harvesting acorns from the white oak trees, and the harvest from maple and butternut trees to make sugar in late April and early spring.

q. The very important fish runs for the Narragansett happened when the smelts the ale wifes herrings, buckies, shad, Atlantic salmon, carp, some trout which go from saltwater to fresh or the sweet water to spawn. We do not get the Atlantic salmon

runs today but the author of this history remembers catching a salmon at the Misshannock Horseshoe Falls when she was eleven or twelve years old. She thought it was extra large dace. The smelts and the ale wife/herring and shad are prey and were followed by the great bass and lamprey, which ate them up. The Narragansett and ale wife/herring fish that we call buckies were used to fertilize the ancestors' gardens until the colonists came and took over and forbade the Indians to take the salmon. With the decline of Atlantic salmon and the forbidding of Indians fishing, hunting and using the lands of their ancestors, the taking of ale wife/herring, called buckies, was allowed because they were boney fish. These fish became an important part of the Narragansett diet in the 18th and 19th century and smoked buckies are a Narragansett Indian specialty. Some of the men and women still smoke and dry fish, eels, and shellfish.

r. During the 17th century writers started classifying some of the indigenous natives by what the writers assumed. Samuel Champlain started writing us Narragansett up as Algonquin because of the similarity of lifestyles - a similarity of customs and dialect, celebration, burial practices, seasonal ceremonials and use of the salt water and sweet water and coastal travel as well as materials for survival and foods.

s. The first four decades of the 17th century, European arrivals and explorers brought in disease from Europe that killed off 80-90 percent of coastal natives. That is why the Pautuxett Narragansett never went back to Pautuxett, which place became known as new Plimoth, nor the Pautuxett summer place on the South shore of Boston. The larger numbers of Narragansett were not hit by the devastation of European smallpox and other communicable diseases such as chicken poxes, measles (regular and German), diphtheria, and tuberculoses until later.

t. Indian summer is the time in the Fall of a warm up after the colorful foliage time has passed and killing frost and first freeze up comes each year. Special immense "V" shaped corrals were made in specific places sometime over a mile wide at the entrance down to fifty or a hundred feet or less at the main point of the "V". Here the men with spears and those with arrows were placed to take down all the desired animals at the opening of the "V" corral. All ages of people were placed many feet apart and their job was to beat on and make noise as much as possible at the wide part of the "V" corral to drive the animals into and through the corral. Although human habitation in Rhode Island is close to one million people, the deer population is over abundant, while other species of animals are no longer here.

u. In 1637, the Narragansett had to deal with the English in what was called the Pequadt war. The colonists were informed who the Pequadts and Mohegans were and they were from the Mahican groups up north who disagreed with their sachems. They negotiated and came South by permission of the Narragansett about a century and half before Verrazano visited the area what was to become New England. They became two separate groups and were allowed into different places because their head sachems did not agree with each other. It is not for us to judge why the Schaghticoke split themselves from the Pequadts later.

v. In 1643 there had been relatively good relations with a few of the colonists who were having many troubles of their own fighting over who was to be boss in specific places. They had meetings in what was to become known as Hartford and New Haven, and Boston and other places. One of their discussions was the forbidding Indians hunting, gathering, and trading amongst each other. Indians were being punished and were either put in the stocks or had to pay fines.

w. Roger Williams disagreed with the leading colonists regarding the Indian rights. He was going to be sent back to England however he and others ran away to Narragansett County to the place what was to become known as the State of Rhode Island and Providence Plantations. He was ill and the Narragansett nursed him back to health. He was granted land that was called Providence Plantations once he returned to England and requested permission to return to America and be in charge of a land grant.

x. In 1643, the youngest sachem of the Narragansett Miantonomoh tried to create an alliance with the English colonists which did not work; the English offered a price for Miantonomoh's head because he did not agree with colonist policies. Colonists said he was an enemy. He was captured and upon his own request he wanted a Mohegan of his own status to commit the murder. Writers now claim that there was a long war between the Narragansett and the sub-tribal division of the Mohegan through 1650s. This was not true. There was however a disagreement with the governing bodies of the Narragansett and the Mohegan. The Mohegan said it would be easier if he went along with the colonist ways . The group still under the Narragansett said, "No."

y. The 1660s brought disagreement between Narragansett males and females alike. Some of the Royal Families of Ninigretes decided on mortgaging off tracks of land under them to pay the fines demanded by the colonists. Queen Esther, the sister of Tom Ninigrete, and other royal squaw sachems said, "No." Here we must remember the extensive lands under the royal sachems that comprise the Narragansett Nation. In the colonial writer's records very little is said about the women sachems because women were supposedly chattel according to the English lifestyle. Only when there was direct conflict with the European colonists were the women sachems spoken about. An example is Oussamequin Massasoit's wife. Fifteen years of disruptions and disagreement followed. The sons of Oussamequin wanted to gain back uses of their summer places on Cape Cod and their winter places inland around what was to become known as Taunton and Fall River. The colonists killed the older brother by poisoning him when they called him to meet in Boston. The younger brother Pomettacomett called by the colonist King Phillip sent his families to a Narragansett winter camp which moved from the permanent place to where the University of Rhode Island now is. Many families moved to the Great Swamp Area in South Kingstown, taking the King Phillip families with them. It was a custom of the indigenous natives to send their people to places they considered safe during conflicts.

z. At that time of unrest, some of the Medicine Families and the families of the War Chief Tattazone moved in to the areas that became known as parts of Connecticut, Massachusetts, New Hampshire and New York prior to the war. They moved into

areas where there was no colonist involvement yet. Because of this action of King Phillip, the colonists demanded that King Phillip's families be turned over to them as war hostages. When the Narragansett sachems said no, the Narragansett were drawn into the war. Most Narragansett sachems agreed that no Wompanoag would be given and the fighting man went on their own local fights to gain back lands that had been taken over in parts of Rhode Island. While the majority of Narragansett sachems were against what the colonists were up to and doing, the sachem Ninigrete was dealing with the colonists. While the others fought for the return and privileges and lands, Ninigrete and his associates stayed in the Watch Hill area and raised not a hand against the colonists because the colonists promised him the king's crown to be in charge of the remainder of Indians in the area.

aa. One great winter camp was in the area where the University of Rhode Island is. In 1675 when the colonist went to the great winter camp area no one was there. The colonist militia did find an Indian man who had turned Christian. They told him that it was his duty to tell them where the camp that held the King Phillip families was or he was to be killed. Oral history knows him only as Peter. Peter became a traitor as much as Ninigrete is considered to have been. Peter led the colonist militia to the winter camp in the Great Swamp in South Kingstown. The new camp was not complete because of the severe weather and a winter blizzard and freeze over. On the side where the deepest water was frozen over, that winter camp housed about 600 wigwams filled with old men, women, and children. The colonist militia finally gained entrance on the unfinished palicide place and set fire to many wigwams, driving the occupants out of the camp area killing many and winning the confrontation against the old men, women, and children. To this day the exact island in the great swamp that housed that winter camp of Narragansett and Wompanoag old men, women, and children where the massacre happened is unknown (one thing we have to relate here is that Indians did not kill the old, the women and children primarily as did the Europeans). Although old Narragansett of some families knew the location, we were told by elders that it was best not to know because the place was sacred. Albert and Lawrence knew the place but neither man told us children. Once in awhile an artifact would be given to us and we were told it came from the Great Swamp Massacre Area. Their voices would lower and the eyes would squint and snap and the mouth would turn down at the corners accompanied by guttural sounds from the throat. Sometimes they would utter a war-whoop and do a few war dance steps.

bb. 1667-1675 was a very devastating time for the Narragansett. History has been written by the colonial records of the places where the natives were killed off. The European custom of paying an amount for men, women, and children scalp locks was paid to the killers. The Narragansett as well as others in New England suffered great losses. Only those who agreed with the colonists survived. In 1705 Ninigrete was awarded chiefdom. While given recognition he granted specific land and political control to the Rhode Island Assembly and got put in charge of the reservation. Land that was formerly under the auspices of the Royal Sachems of the Narragansett Nation was reduced drastically everywhere.

cc. The practice of indentured service became the rule. Adults mostly all female became servants and indentured their children; twenty-two years for boys and nineteen year for girls. This indenture was a form of slavery for the Narragansett. The town records started another form of genocide against the Narragansett as well as other indigenous natives. The recordings of many of the children were written as "mustee," "molatto," "negro," or "black". It all depended on who was doing the recording.

dd. In 1746 some of the Narragansett on and off reservation started using the Christianity as a second way to worship God. They listened to preachings and put their "X" on written papers they did not even understand. This was a form of control the colonists exercised with people who did not understand the English language and spoke very little of it. The meeting house/church was established. The people established and ordained Samuel Niles as their preacher. Members of the Medicine Family never became Christians. We learned about the concepts of foreign religions but never embraced them to this day. Today we Narragansett have the traditional and Christian parts in all weddings, burials, and tribal meetings. However, ancient ceremonies are kept traditional. Our powwows have a combination of ancient and American revolutionized activities.

ee. The Narragansett Indian meeting house/church was established and built around 1750 after the reformation which was said to be under a man called Mr. Park since 1741. The first minister was James Simons and after him Samuel Niles was ordained and took over the responsibility of preaching with eloquence to the Narragansett and visitors. A fire destroyed the wooden structure which was twenty eight feet wide and forty feet long. In the late 1850s a stone meeting house/church was built basically using the same size and design as the wooden one in a place nearby where the old building had been built. A fire destroyed the stone meeting house/ church also which was deliberately set in 1993. Whoever put incendiary materials to help burn the interior evidently thought the destruction of the meeting house/church would destroy the Narragansett people. However, the meeting house/church was just a small part of an indigenous native group heritage. So it was rebuilt again to accommodate the Narragansett Indians as well as other Indians and friends for meetings and religious services of all kinds. The building is a place of refuge for the good of all. Today's building still has the unique architecture of the first building's two doors on the south side, windows on the east and west side and no windows on the north side.

ff. Through the passing centuries, the Narragansett people continued to celebrate the thirteen Thanksgiving celebrations that were traditional for us. The language was still spoken although this was one of the things forbidden by colonials. As long as no colonialists or the colonist Indian friends were present, the tribal language and religion were practiced.

gg. In 1775-1785 the Narragansett males took part in the service to the American Revolutionary War. Some did not want anything to do with the wars or the people. So some joined other Indians and made the journey to what was to become known as Brothertown with their families. During this time around 1777 Queen Esther of the Ningrete family died. She and her sisters never agreed with King Thomas Ninigrete. The leadership of the Narragansett was no longer recognized by the State of Rhode

Island. By 1790-1820 the State of Rhode Island started passing laws regulating tribal businesses, membership, voting rights, and giving ideas to the Tribal Council. The Americans recognized the autonomy of the Narragansett Tribal Council and appointed a treasurer who soon quit and no one took his place. In 1820, a school was established with the help of Frederick Bayles. This school was not very successful through 1830 because the appointed teachers were not educated enough to teach. In the wintertime the school was not accessible when the snows came, nor was the meeting house/church. The church group met in private homes.

hh. Things changed radically during the 1860s through the early 1880s when the State of Rhode Island illegally wrote the Narragansett Tribe was terminated. This they did without federal sanction. The Narragansett were never on the list of federally terminated recognized tribes because their numbers had been so badly reduced they were no longer a threat to the United Sates and to the military. That is why the Narragansett were not moved out of the state. Through 1880-90s the Narragansett Tribe unsuccessfully tried to sue Rhode Island for recovery of stolen and taken lands. Tribal activities especially traditional and ceremonial continued. With the turn of the century when World War I began, some of the Narragansett males joined the armed forces. No one bothered to ask why they joined. The fact was they could exhibit protecting the land again; a priority colonial conquest had taken away.

ii. At different times of the year, trade was resumed. Trading shells and shellfish took place. The Narragansett traded maize and smoked shellfish and shells with Indians in the Great Lakes regions for copper and red pipestone/catlinite, which we do not have in Rhode Island. Copper to the natives in New England was like gold and silver in other places. There was a method to get small amounts of copper produced locally. Basket making and pottery, mats made from white and red cedar, pine bark and reeds, and bead work instead of porcupine quill and bird quill works continued. Indians did not know how to make glass so the glass beads were brought from other countries and took the place of porcupine quill and bird quill embroidery.

jj. Education was very important and Indians started getting degrees. The Indian males went from apprenticeship to having their own businesses, especially carpenters, fishing, stonework, and farming and making boats. Most of the old stone walls and stiles and great foundations in the local area were made by Narragansett Indians and many still exercise the trade of stone masons.

kk. In the early 1930s the Narragansett people decided to formulate a business contract to be run by the Tribal Government and other members. A printed form of Constitution and Bylaws for the business end of The Tribe was also used to incorporate and define who and what the Tribal Government responsibilities as well as others were to be.

ll. Today the Tribal Government consists of nine Councilmen who are representatives of different family groups sitting at the top is Chief Sachem, Medicineman, and Medicine Woman as advisors. Added to this a Tribal Secretary, Assistant Tribal Secretary, Tribal Treasurer, and Assistant Tribal Treasurer, and we also have three Sub-Chiefs. Today we think about what was and how far the Atlantic Plains

extended before the water covered it because a lot has been found in the Ocean. Because of storms and maybe a little bit of global warming has changed the coastline.

mm. Narragansett men and women from the later 1930s participated in all of the military services in land, water, and the air forces, traveling and stationed in military units all over the world. From the 1960s and up services were during the Korean conflict and Vietnam War and what is happening in the Near East and the Far East today.

nn. Facing the turn of the century into the beginning of the 21st century saw the Narragansett trying to gain back some of their land in Charlestown area. The Federal Government backed The Tribe and paid for about two-thousand acres. The state is still arguing that they supersede Federal Law and that the State Laws have control. The Narragansett have a smaller reservation in Westerly; about seven or eight hundred acres currently know as The Old Crandal Farm.

oo. In the early 1980s the Narragansett people, federal lawyers, and local lawyers put together a 14-volume report to prove they were eligible for Federal Programs for Federally recognized tribes. It was miscalled and misinterpreted as a Bureau of Indian Affairs Federal Recognition. We did not have to gain something that we already had. We simply proved our continuous existence and supporting genealogy. The acknowledgement and approval for allowance to apply for many Federal Grants and Programs was gained by the Narragansett in 1983. Some funding comes in to support the Tribal Government, Social Services, Indian Health Services, Education, and Housing. Narragansett people work with the coastal resource groups and are very interested in work with the historical preservation of the areas. We have our own Historical Preservation Officer and a staff. In spite of so many forms of genocide, pitfalls, downfalls from wars, political aggression against the Narragansett Nation, we people are still here.

410.3 European Exploration and Colonial Settlement Landscape Context

1. The exploration and settlement of New England was a "vast maritime enterprise" in that conquerors and settlers traveled across the ocean and were sustained by it. (St. Martin and Hall-Arber 2008). Marine resources along with coastal and oceanic trade routes ensured the physical and economic survival of European colonies in New England, including Rhode Island. (Bridenbaugh, 9-10) The Ocean SAMP area influenced and was influenced by these human processes. Some of these influences exist today as place names, archaeological sites (known and undiscovered), and altered marine and coastal ecosystems.

2. The Exploration, Contact, and Settlement history of the Ocean SAMP area begins with the voyage of Giovanni da Verrazano in 1523. Under orders from the French crown, Verrazano explored the east coast of the present day United States from Cape Fear, North Carolina to Cape Cod, Massachusetts. In part focused on discovering the fabled "North West Passage," Verrazano also spent a considerable time interacting and trading with Indians. In April 1524, he sighted Block Island, which he described as 10 leagues from the mainland, similar size to the island of Rhodes, hilly, forested, and triangular shaped.

Observing a large number of fires on shore, Verrazano actually predicted that Block Island was heavily inhabited (Wroth 1970).

3. Prevented by weather from going ashore at Block Island, Verrazano sailed into Narragansett Bay, anchoring in Newport Harbor. There he recorded his observations on the Indian people, their leaders, homes, the openness of the countryside, the plants and animals, and the ways that they interacted with the coastal environment (Wroth 1970).

4. Following in the wake of the Dutch East India Company's sponsorship of Henry Hudson's explorations in New York beginning in 1609, the Dutch dispatched Adriaen Block on several voyages to the region. On the fourth voyage in 1614, Block's ship the *Tyger* was burnt at Manhattan. In response, he built a 42-foot coastal vessel *Onrust*. In the spring of 1615, Block explored the East River and passed north through Long Island Sound into what is now the Ocean SAMP area, in the process charting Block Island for the first time. The Dutch connections in New York laid down by Hudson and subsequently enhanced by the Dutch East and West India Companies exercised considerable long term influence on the history and patterns of maritime commerce through the Ocean SAMP area.

5. The cultural and political history of Rhode Island's establishment, when combined with its unique geography explains the state's early, aggressive, and highly successful maritime enterprises. Roger Williams is considered the father of organized colonization in the state. Williams' move to Rhode Island also created conditions that contributed to Rhode Island's rapid rise as a maritime economy and colony. A religious radical with close Indian ties, Williams fled Massachusetts for Mount Hope Bay in 1636 where he received aid from the Indian chief Massasoit. Sympathetic with Williams (see Section 410.2) Massasoit granted Williams land on east bank of the Seekonk River, north of present day Providence. Shortly thereafter, Williams was forced to move his expanding group of settlers close to present day Fox Point where he reestablished the community he called Providence (McLoughlin 6-7).

6. Other dissenters followed Williams to Rhode Island: Anne Hutchinson in Pocasset (1639), William Coddington in Newport (1639), and Samuel Gorton in Shawomet (1640). In addition, William Arnold broke away from Williams and established his own community at Pawtuxet (1638), declaring allegiance to Massachusetts in the process. The result was a collection of scattered settlements lead by people with diverse and sometimes controversial religious beliefs. This diversity ultimately led to a social and religious openness that proved a critical asset to Rhode Island's maritime economy (McLoughlin 3-4, 15; Bridenbaugh 10).

7. The dispersed pattern of early settlements resulting from religious diversity and toleration multiplied the natural significance of waterborne connections in Rhode Island, especially in Narragansett Bay. Communication and commerce depended on the water. Initially, local transport was largely by canoe and most households possessed one or more them (Vickers 14). Roger Williams, for example, used dugouts to travel the colony, and to visit and trade with local Indian leaders.

8. The Rhode Island colony was, in its essence, a maritime place, bounded by protected waters and gifted with good harbors and access to coastal natural resources. Fish, for example provided food, fertilizer, and saleable commodity. The islands, particularly Hog, Patience, Prudence, Dyer, Gould, Goat, Conanicut, Dutch and Aquidneck, were particularly important to Rhode Island's colonial settlement, survival and economic well being. Many islands had good land, trees and fertile soil, and all had access to water. Beyond this, however, the islands in Narragansett Bay and Rhode Island Sound were critical for agriculture and animal husbandry. Pigs and goats - and later cattle, sheep and horses - were all raised on islands where they could forage and survive the winter while remaining confined and protected from wolves. Indeed, Hog and Goat Island were named for their contributions to early Rhode Island husbandry (Bridenbaugh 12-16). The quest for grazing also drew attention to Block Island. At the end of 1639, William Coddington in Newport dispatched a small coastal trading vessel to Block Island with some livestock. In 1661, Dr. John Alcock and a group of men from Roxbury men built a barque and transported cattle from Braintree to Block Island. These activities represent Rhode Islander's expanded activity into previously isolated areas within the Ocean SAMP (Bridenbaugh 43).

9. The early agricultural development of Rhode Island was critical to its survival as a colony and its rapid maritime commercial expansion. As such, it directly influenced the Ocean SAMP area and surrounding lands. While English settlers bought their own ideas about agricultural development to Rhode Island, they also copied Native Americans' cultivation practices; particularly planting corn, which could be consumed, traded and used for animal fodder. Ultimately, animal husbandry proved easier and more lucrative than crop cultivation–and within a decade or two of settlement, Rhode Islanders, particularly those on Aquidneck Island, generated surpluses in pigs, goats, neat cattle (domestic straight-backed), sheep and horses (Bridenbaugh, 39).

10. Pigs foraged relatively freely and fattened quickly. Sent by sea to Boston, butchers processed them into salt pork for use as food by mariners and fishermen. By 1649, cattle were also being raised for commercial markets. Agricultural surpluses, protected harbors, economic freedom, religious toleration, and lax regulation from the metropolis ensured Rhode Island's early and aggressive economic development and reinforced its ties with the ocean (Bridenbaugh, 28-31).

410.4 Post-Colonial Cultural Landscape Context

1. With the beginning of European colonization in the early 17th century, the open sea was Rhode Islanders' critical transportation link to the parent countries of Europe and to neighboring colonies along the Atlantic Seaboard. This marine transportation focused increasingly on trade as the colonial settlement matured, and with Newport merchants in the lead, Rhode Island became an important center of maritime commerce in the mid-18th century. This ready access to the sea stimulated areas of concentrated development on the shores of Narragansett Bay and, to a lesser extent, the Sakonnet and Pawcatuck Rivers, where protected harbors fostered the colony's principal urban centers. The ocean coast had fertile soils that attracted early settlement but it was diffuse with little in the way of villages or town centers. From Little Compton to Westerly, the shore was lined by

isolated farms, some of them quite large, with their fields and pastures running down to the water. Fishing and harvesting seaweed for fertilizing were important adjuncts to farming for the coastal population as well, though they left little permanent evidence on the land.

2. Factory-based manufacturing supplanted maritime trade as the center of the Rhode Island economy in the 19th century. Industrialization stimulated the growth of urban industrial centers led by Providence at the head of the Bay, and a concentration of population in smaller industrial communities clustered along the state's rivers. The growth of industry, urban commerce and the region's population all contributed to a steady flow of maritime travel through Rhode Island's coastal waters, and Providence emerged as an important regional port for the distribution of raw materials such as coal and cotton and for travelers between New England and the mid-Atlantic and southern states.

3. Industry largely bypassed the coastal area and the initial pattern of agricultural land use and dispersed settlement continued to define the majority of coastal Newport and Washington Counties (including Block Island) through the 19th century. However, by the middle of the century, the coastline had begun attracting seasonal visitors, as the expanding industrial and commercial economy made it possible for its successful participants to escape the hectic and noisome city to enjoy leisure time in a vacation. This seasonal use began in an informal way as visitors lodged with local farmers or in small boardinghouses.

4. Then in the decades after the Civil War, the scale of vacationing grew and individual resorts developed where a new culture of leisure emerged. The preeminent resort community was Newport, which initially housed its summer visitors in boardinghouses and hotels, but became best known for its elaborate "cottages," private summer houses built by many of the country's wealthiest businessmen. With the opening of Bellevue Avenue and then Ocean Drive, the rocky coastline of Newport was taken up for the summer estates of wealthy summer residents from New York City and other major cities. Newport and the other coastal resorts also catered to the middle ranks of society with large hotels, boardinghouses and more modest cottage residences.

5. In addition to Newport, Jamestown, Narragansett Pier, and Watch Hill had their own concentrations of grand cottage architecture and large hotels in a coastal setting. Sakonnet, Weekapaug, Matunuck, and Misquamaquit also experienced a surge of waterside development accommodating summer tourists and there were smaller clusters elsewhere along the coast. From its roots as a somewhat isolated haven for agriculture and animal husbandry, Block Island grew into a popular tourist-attracting destination resort, a magnet for sailors and boaters of all kinds, fishermen and summertime day-trippers. Whether enjoyed from the verandas and grounds of private estates or from public beaches and shoreline trails, the picturesque beaches, rocky coast and ocean vistas were fundamental attractions that drew summer visitors of all economic levels to Newport and other points along the Rhode Island coast.

6. A key element in much of this growth was the steamboat, most notably at Block Island, where the construction of the federal breakwater in the 1870s provided the island with its

first protected harbor. The new harbor could accommodate large steamboats, which greatly increased the number of summer visitors. It also enabled an expansion of the island's fishing fleet, which in turn stimulated the growth of the year-round population. On the mainland, the federal government built a second breakwater to form the Point Judith Harbor of Refuge between 1890 and 1914. This fostered the growth of a fishing fleet as well, and the creation of the village of Galilee on the east shore of Point Judith Pond which became a major commercial fishing harbor in the 20th century.

7. The patterns of development and land use that defined the late 19th century continued into the early 20th century, but were then interrupted by several factors. One was the economic and political turbulence that accompanied the contraction of the state's economic growth in the 1920s, followed by the Great Depression and then World War II. Another was the Hurricane of 1938, which devastated Rhode Island's coastal communities. A third was the rise of the automobile, which had perhaps the most long-lasting effect. When new development resumed after the long hiatus of depression and war, the automobile encouraged a more dispersed pattern of development in the coastal region. The open countryside that still covered much of the coastline became viable for residential subdivisions. As the summer population spread out, the large hotels that had been developed in the era of mass transit by steamboat or railroad dwindled in numbers. Many parts of the coastal region acquired a new suburban character as summer houses were adapted or rebuilt for year-round use and new subdivisions were built on former farmland. Although the amount of farm land decreased, representative examples of saltwater farms still helped define the coastal character. Block Island was the least affected by the automobile and suburbanization due to its remoteness from the mainland. Although it has experienced residential growth in the late 20th century, the island retains its rural character to a high degree.

8. As access to Block Island became more readily convenient from the 1950s onward, the Island residents have responded by adopting a land and nature preservation and protection ethos. Fittingly, it was led by a veteran Merchant Marine captain, Rob Lewis, in a tradition that has been carried on by his family, along with a host of other influential Block Islanders, such as "Birdlady" Elizabeth Dickens, and David and Elise Lapham. It was Captain Lewis who, perhaps better than others, appreciated the delicate balance between land and water, and the need to constantly find a harmony among their values. Rodman's Hollow, Black Rock and their neighboring properties were at the forefront of this Block Island conservation movement when it was formed, and efforts began in the early 1970s when Islanders inspired by Captain Lewis purchased the Hollow from potential off-Island developers. It has been their work, and the effort and commitment of Islanders through the years and ongoing still, that have led to the conservation of over 2,500 acres from the signature North Light to the sprawling Southwest corner, all replete with historical and cultural emphasis. Native Americans called Block Island "Manisses"—God's Little Island.

410.5 Military Landscape Context

1. During the post-contact period, twenty or more wars and endless conflicts have resulted in a complex military cultural landscape in the Ocean SAMP area.

2. Table 1. lists the conflicts, ranging from regional to global, that have had tangible influence on the Ocean SAMP area. Four centuries of conflicts have contributed to the Ocean SAMP area landscape; however, the conflicts highlighted in bold font exercised the most influence in the Ocean SAMP area.

Table 1. Warfare and the Ocean SAMP, Conflicts 1634-1975

Warfare and the Ocean SAMP, Conflicts 1634-1975		
Conflict	Years	Belligerents
Pequot War	**1634-1638**	**Colonial v Indian**
First Anglo Dutch War	1652-1654	England v United Provinces
Second Anglo Dutch War	1665-1667	England v United Provinces
Third Anglo Dutch War	1672-1674	England v United Provinces
King Philip's War	**1675-1676**	**Colonial v Indian**
King Williams War	1689-1697	England v France
Queen Anne's War	1702-1713	Britain v France
King George's War	1739-1749	Britain v Spain (and France after 1744)
French and Indian War	**1754-1763**	**Britain v France**
American Revolutionary War	**1776-1781**	**Britain v United States**
French Revolutionary and Napoleonic Wars	(1792-1814 (brief period of peace 1802-1803))	Britain and her allies v. France
Quasi–War with France	1798-1800	United States v. France
War of 1812	**1812-1814**	**United States v Britain**
Mexican War	1846-1848	United States v Mexico
Civil War	**1861-1865**	**Union v Confederate**
Spanish American War	1898	United States v Spain

Warfare and the Ocean SAMP, Conflicts 1634-1975 (con't)		
Conflict	Years	Belligerents
World War I	**1914-1918**	**Britain, France, Russia, United States v Germany**
World War II	**1939-1945**	**Britain, United States, Soviet Union v Germany, Japan, Italy**
Korean War	1950-1953	United Nations, Republic of Korea, United States v Democratic People's Republic of Korea
Vietnam War	1961-1975	South Vietnam, United States v North Vietnam, Viet Cong

3. Among the wars, the American Revolution and the two World Wars (especially World War II) proved especially influential on the Ocean SAMP area's cultural landscape. The Revolutionary War altered the trajectory of Rhode Island history, reshaped its economy played host to fighting on land and at sea resulting in at least 33 historically significant shipwrecks in Rhode Island waters. Likewise, the global conflicts of the first half of the 20th century, especially World War II strongly influenced Rhode Island history and the Ocean SAMP area's cultural landscape. Naval facilities, bases, warships, fuel depots, hospitals, gun emplacements, testing ground, and shipwrecks from WWII all contributed to the fabric of the Ocean SAMP area history and many elements remain as archaeological or historic sites.

4. The outbreak of the Pequot war is tied to the Ocean SAMP area. In 1634, John Oldham, a trader from Massachusetts, was killed during his interactions with Indians on Block Island. In response, Massachusetts attacked, conquered and settled the island.

5. The three Anglo Wars (1652-1654, 1665-1667, 1672-1674) affected in long-term ways patterns trade and traffic through the Ocean SAMP area. New York's extraordinary influence on the history of Rhode Island and the Ocean SAMP region traces directly to the early Dutch colony of New Amsterdam and the conflicts it engendered. The regional Dutch - Rhode Island connections persisted after the English took control of New York in 1664, continuing to influence trading relationships and traffic patterns through the Ocean SAMP area for centuries.

6. During the period covering King William's War (1689-1698) and Queen Anne's War (1702-1713), the English government expended little effort to control or regulate Rhode Island. The religiously tolerant, independent-spirited, and economically motivated Rhode Islanders refused to supply soldiers or military support to New England colonial armies (McLoughlin 52-53).

7. In contrast with land war, Rhode Islanders enthusiastically embraced the for-profit warfare of privateering. During the many Anglo-French wars (1689-1754) Rhode Island and other colonies licensed large numbers of privateers that sailed through the waters of the Ocean SAMP area. Privateers were privately owned armed ships licensed by the government in times of conflict and granted permission to raid enemy shipping. Privateering could be highly profitable and provided some level of naval defense for the colony. In 1690, Thomas Paine, a privateer from Jamestown, help drive off French ships that landed on Block Island (McLoughlin 52-54, 80).

8. The late-17th and early-18th centuries blurred the distinctions between legal privateering and illegal piracy. Thomas Paine, the hero at Block Island, was suspected of piracy, and the colony produced the well-known pirates Thomas Tew and Captain Want. In the 1690s, Rhode Island reportedly welcomed the famed pirate William "Captain" Kidd (Hawes 1999). Pirate booty boosted the Rhode Island economy, fattening the purses of certain merchants and government officials who might overlook illicit cargos and questionable practices (Bridenbaugh 25). After about 1720, piracy along the eastern seaboard of colonial America declined and the separation between illegal pirates and legal privateers became clearer.

9. During King George's War and the French and Indian War (1739 – 1749, 1754 – 1763), Rhode Island dispatched a large numbers of privateers during the eighteenth century wars. During King George's War (1739 – 1749) Rhode Island was home to 25 percent of all privateers in operating in America (Swanson 1991). During the French and Indian War (1754 – 1763), powerful Rhode Island merchant families such as the Browns and Bannisters dispatched fleets of privateers through the Ocean SAMP area waters.

10. The French and Indian War emptied the British government's coffers, leaving an immense war debt that threatened the national economy. The clumsy plans devised by Imperial authorities to raise revenues from the America colonies threatening the cherished semi-independence and finances of Rhode Island and sister colonies and ultimately led to the War for Independence.

11. A Maritime-based economy meant that the new heavy British hand was perhaps felt sooner and with more pain in Rhode Island than in the other British North American colonies. Rhode Island responded by becoming the first colony to take up arms against Britain, the first to propose a Continental Congress, the first to formally sever ties with the British monarchy, and the first to create a navy.

12. Armed resistance to British rule in America began on Rhode Island waters and set the stage for the development of the United States navy. In December 1763, the HMS *Squirrel* sailed through the waters included in the Ocean SAMP area and into Narragansett Bay to enforce the new regulations. Seven months later in July 1764, at the orders of two members of governor's council, gunners fired eight shots at a tender from *Squirrel* after a British-sparked mobbing incident at Newport.

13. Attacking Royal Navy vessels became a pattern in Rhode Island. Major incidents occurred in 1765 when a Royal Navy ship *HMS Maidstone* attempted to impress local sailors at Newport, and in 1769 when a mob boarded the Royal Navy ship *Liberty*, running it ashore and setting it aflame (McLoughlin 86, Bartlett 1858; Carroll 1932).

14. The most important incident of this kind was the burning of the HMS *Gaspee* in the Providence River by disgruntled colonists in 1772. The *Gaspee* affair ranks alongside the Boston Tea Party and the Stamp Act Crisis as a large step on the road to the American Revolution (Bartlett 1858; McLoughlin 90-91).

15. The colony's independent streak and eye for profits continued in the early 1770. When the other colonies banded together in refusing to accept imported British manufactures, Rhode Island claimed poverty and abstained. At expense of the other colonies, Rhode Island Sound and Narragansett Bay remained open to British commerce. At a direct cost to the other colonies, ships, goods, and money flowed through the Ocean SAMP area waters into Rhode Island's ports (McLoughlin, 90)

16. The 1773 Tea Act and the infamous Boston Tea Party fed Rhode Islanders appetite for rebellion. In 1774, Rhode Island called for a Continental Congress and became the first colony to elect delegates. During this period, British warships increased operations in Rhode Island Sound beginning to block traffic into and out of Narragansett Bay.

17. In June of 1775, the Rhode Island legislature established America's first navy, commissioning the *Washington* and the 12-gun sloop *Katy* (later renamed the sloop *Providence*). Within a few days, the *Katy* captured the Royal Navy's tender *Diana* (tender to the HMS *Rose*) off Jamestown, in some respects the first naval battle of the Revolution (Fowler 1976).

18. In October 1775, the Continental Congress passed a Rhode Island proposed resolution to create a Continental Navy. Rhode Island supplied two of thirteen new ships, the 28-gun frigate *Providence* (a different vessel from the sloop *Katy/Providence)*, and the 32-gun frigate *Warren*. The following month, Rhode Island sea captain Esek Hopkins became the Continental Navy's first commander-in-chief (Fowler 1976).

19. Some of the United States Navy's earliest actions took place in Ocean SAMP area waters. In April 1776, Commander-in-Chief Esek Hopkins, captaining the *Providence*, captured a British tender *Hawk* off Block Island and a brig (bomb vessel) *Bolton*. On April 6, Hopkins' squadron engaged but did not capture HMS *Glasgow* off Point Judith. The following month, John Paul Jones, often considered the father of the American Navy, became the captain of the sloop *Providence (*the former *Katy*) (McLoughlin 96).

20. In a dramatic prelude to the formal United States Declaration of Independence, on May 4, 1776, Rhode Island "abrogated its allegiance to the king." The waters around the Rhode Island, including the Ocean SAMP area became state waters on July 22, 1776 when Rhode Island altered the identity on its charter from "colony" to "state." (McLoughlin 92-93, 94).

21. As with earlier imperial conflicts, Rhode Island embraced privateering during the Revolutionary War, commissioning 65 privateers between May and December 1776.

22. In December 1776, the British took Newport in an amphibious assault. The subsequent three-year British occupation had dire consequences for maritime Rhode Island, ending forever the glory days of Newport-owned ships transiting the Ocean SAMP area waters on their way to distant markets. Many colonial merchants fled, taking their trade and shipping with them. Rhode Island's center of political and economic influence shifted from Newport to Providence, where it would remain after the war ended.

23. By cutting off Rhode Island's customary access to the sea, the British naval control of the Ocean SAMP area waters and Narragansett Bay brought serious hardships for patriots in Providence. Only supplies sent overland to Providence from Connecticut prevented starvation.

24. Patriot forces maintained an offensive strategy on Rhode Island waters despite superior British forces. In October 1778, American patriot, Silas Talbot commanding a 2-gun sloop captured the 22-gun Royal Navy Brig *Pigot* that had been blockading Sakonnet (McLoughlin 97).

25. The British occupation of Newport and control of the entrance to Narragansett Bay had trapped the new frigates *Providence* and *Warren* along with the sloop *Providence* at the head of the bay. In February 1778, the *Warren* slipped the blockade, followed a month later by the *Providence*. The Continental ship *Columbus* failed in its bid for the open sea, running aground and burning in the Ocean SAMP area near Point Judith.

26. In March 1778, France recognized the United States of America and entered the war as an ally. This changed war's character from a colonial rebellion to a broader European and Atlantic conflict. The French king sent a fleet under French Admiral d'Estaing, to assist the Continental forces. One of its first actions involved supporting an unsuccessful American effort to liberate Newport in the summer of 1778.

27. The French fleet comprised 12 ship-of-the-line, 4 frigates and 2,800 marines, a force far more powerful than the British frigates and smaller vessels stationed in Rhode Island. Faced with certain capture, between July 29 and August 8, 1778 the British forces sunk, scuttled or burned all of their vessels. English losses including the sloops *Kingsfisher* and *Falcon*, the galleys *Alarm* and *Spitfire*, and the frigates *Lark, Cerberus, Orpheus, Juno* and *Flora* as well as 13 transport ships in Newport Harbor (Abbass 2000). Today, all of these wrecks are almost undoubtedly eligible for the National Register of Historic Places.

28. Despite these successes, the American and French efforts to take Newport stalled. The British, however, finally withdrew from the Island and Newport on their own accord in October 1779.

29. In July 1780, a French fleet under Admiral Ternay and carrying carry troops commanded by the comte de Rochambeau arrived in Newport. French warships stayed through the

following winter. In March 1781, General Washington and Rochambeau, who would become the architects of the British defeat at Yorktown, held a series of strategic meetings at Newport. Shortly thereafter, the French evacuated Rhode Island (McLoughlin 99).

30. Although a center for the US navy during the American Revolution, Rhode Island did not reap any naval rewards during the post war years. The Navy Acts of 1794 or 1798 failed to direct significant navy resources toward the state. The only significant federal navy project was the construction of the frigate General Greene in Warren in 1799.

31. Between 1798 and 1800, the United States fought the so-called Quasi-War with France. Rhode Islanders participated enthusiastically, sending out many privateers to stalk French merchant ships.

32. The War of 1812 brought a mixed reaction in Rhode Island. The state government opposed the war, however, the lucrative prospects of privateering enticed many Rhode Islanders into action. One Bristol privateer, the *Yankee* captured 40 vessels worth a total of $5,000,000 (Coleman 1963). No battles took place in Rhode Island; however, the heavy presence the British Navy's off the east coast including Long Island Sound and parts of the Ocean SAMP area hampered Rhode Island's maritime activities.

33. Rhode Islanders served in the early U.S. Navy with distinction. Perhaps the most important of these were members of the Perry family of South Kingstown. Christopher Perry served during the Revolution and the Quasi-War with France. His eldest son, Oliver Hazard Perry commanded the US fleet at the Battle of Lake Erie (1814) during the War of 1812. His younger son, Matthew C. Perry commanded famous expedition to that opened Japan in 1853-1854 (Rhode Island Historical Society 1993).

34. Despite Rhode Island's illustrious contributions and fine harbors, the Navy did not become an important presence in the State until the outbreak of the Civil War (1861-1865) (Rhode Island Historical Society 1993).

35. The Civil War (1861-1865) finally renewed a relationship between Rhode Island and the U.S. Navy, a relationship that would continue for the next 150 years. At the beginning of the war, the Union government, concerned about the proximity of the Naval Academy at Annapolis the south, relocated it to Newport. Despites strong efforts to keep the Academy in Rhode Island, it returned to Annapolis after the war.

36. Despite losing the academy, the Navy's presence in Rhode Island increased exponentially during the last 30 years of the 19th century. In 1869, underwater mines and explosive warfare were in their infancy and the Navy establishment of a torpedo experimentation and development facility on Goat Island. .

37. The Newport torpedo development, testing, training and manufacturing station is central to the history of the propeller-driven torpedo in America. The navy subsequently established testing ranges inside Narragansett Bay and in parts of the Ocean SAMP area in Rhode Island Sound.

38. The Navy expanded operations to include Rose (1883) and Gould (World War I) Islands. During World War I, the Newport Torpedo Station added depth charges and mines to its manufactures. During World War II, the station had 13,000 employees who manufactured 57,653 torpedoes, about a third of all torpedoes manufactured in the United States. In 1942, the Navy authorized the station to proof-fire 100 torpedoes a day. Through testing and actual warfare, unexploded torpedoes and other ordinance are historically significant, if potentially dangerous components of the military landscape of Narragansett Bay and parts of the Ocean SAMP area.

39. The station renamed the Naval Underwater Systems Center moved to Coddington Cove 1951. In 1992, the Coddington Cove facility became the Naval Underwater Warfare Center (Rhode Island Historical Society 1993). These research and development activities were highly important during the Cold War between the U.S. and Soviet Union.

40. Education has remained an important military activity in Rhode Island. In 1883, the Navy established the Naval Training Station at Coasters Harbor Island. Operations at on land in Newport and at sea in Narragansett Bay and Rhode Island Sound expanded during the first half of the 20th century. During World War II, over 300,000 recruits passed through the station. After the war, the Naval Training Station evolved into Officers Candidate School (Rhode Island Historical Society 1993; Schroder 1980).

41. The Navy established the Naval War College at Newport in 1884. First led by Admiral Stephen B. Luce the college recognized increasing connections between science and warfare. The College's highly influential second president, Alfred T. Mahan, along with the technological and tactical challenges presented in the Spanish American War (1898), silenced many of the institution's critics. In 1992, the College became an accredited degree-granting institution (Rhode Island Historical Society 1993).

42. The United States Atlantic Fleet developed strong connections with Rhode Island, Narragansett Bay and Rhode Island Sound during the first half of the 20th century. On the eve of the Second World War, six battleships, eight cruisers, thirty destroyers, two submarines, two destroyer tenders and two supply ships along with many smaller vessels were based in Rhode Island.

43. Naval facilities developed to service this growing Navy presence. In 1900, the Navy created the Bradford Coaling Station near Melville, near the site of the Portsmouth Grove Civil War hospital. Again Stephen Luce, although now retired, was involved in this decision. By 1917, the coaling station had developed into a general fueling facility, with extensive oil storage capacity. By 1937, it could store 13 million gallons of fuel. More capacity was added during World War II.

44. Military naval and military activities in Rhode Island and its waters during the Second World War. Providence yards built Liberty ships and the famed Herreshoff shipyard built small boats for the Navy.

45. In 1940, the Navy broke ground on what would become the Quonset Naval Air Station, one of two naval air stations on the east coast. Used first a training facility it became a command center for the First Naval District. "Quonsett-based aircraft carriers and planes participated actively in antisubmarine warfare, convoy escort duties, and air and sea rescue missions, as well as in air patrol operations in coastal waters." (Schroder 1980). In 1942, the Navy built a Naval Auxiliary Air Facility in Charlestown with an on the ground deck for carrier landing practice. The skies above the Ocean SAMP area saw countless thousands of over-flights by military aircraft, several crashed in or near the Ocean SAMP area.

46. In October 1941, adjacent to Quonset at Davisville, the Navy built the Construction Battalion Training Center (Camp Endicott) It served as a training center for newly formed Naval Construction Companies who built facilities and protected themselves while under fire. Over 100,000 men trained at Davisville during the war. A Civil Engineer Officers Training School was added in 1944.

47. Camp Endicott also stored materials and equipment for construction of advance bases overseas. In 1944, almost half a million long tons of advance base materials were shipped out of the Davisville facility. During the war, engineers at Endicott developed pontoons that were used as dry docks, bridges, ferries and barges. The private sector G.A. Fuller Company developed and manufactured 32,253 portable corrugated steel shelters that became famous as Quonset Huts (Schroder 1980).

48. Other naval facilities developed in Rhode Island during World War II included: a naval supply depot at Coddington Cove (1942); the naval net depot that built steel anti-submarine nets (1941); a marine Barracks at Coddington Cove (1943); a naval magazine on Prudence Island (April 1942); a communication station at Beavertail (1941); a small arms firing range at Sachuest Point (1942); a naval operating base in Newport (August 1941); an anti-aircraft training center at Price's Neck near Brenton Point (1942); an inshore patrol facility on Long Wharf in Newport; and a demagnetizing facility at Gould Island used counteract mines or torpedoes attracted to ships or detonated by magnetism (Schroder 1980).

49. In 1942, the Navy built a Motor Torpedo Boat (Patrol Torpedo Boat) Squadrons Training Center at Melville (February 1942). By 1944, the center's 28 PT boats worked extensively in the Rhode Island coastal waters and acted as listening posts farther out to sea (Schroder 1980).

50. Between 1952 and 1973, the Cruiser-Destroyer Force Atlantic based out of Newport. In 1973, the Navy dramatically downsized its Rhode Island presence, cause serious economic damage. The War College remained open as did the Navy Undersea Warfare Center and smaller navy unit, known as Surface Group 4, comprising mostly frigates and minesweepers (Rhode Island Historical Society 1993).

51. The history described above influenced the Ocean SAMP study area in many ways over the past 300 years. Conflict and peacetime Navy operations have left a rich repository of submerged archaeological sites. By far the greatest numbers of potential and known

sites are tied to World War II and/or the development of Naval facilities in Rhode Island during the later-19th and 20th centuries. These resources include vessels lost by accident, vessels deliberately sunk as part of weapons testing, derelicts, military aircraft, merchant marine vessels sunk during war, ordnance, and other lost or abandoned military equipment. The locations of these resources are known, many others certainly await discovery.

52. Shipwrecks and other submerged archaeological sites tied to the American Revolutionary War are central to understanding the importance of the military landscape of the Ocean SAMP area. Rhode Island's coastal waters have perhaps the largest number of known Revolutionary War shipwreck sites in the United States. The intensity of American, British and French military activity in Rhode Island from 1775-1778, makes probable that unidentified vessel losses occurred and that yet unknown Revolutionary War shipwrecks await discovery in or near the Ocean SAMP area.

53. Rhode Island was one of the great centers of American privateering during many of the Wars between the late 17th century and the end of the War of 1812 and numbers related shipwrecks almost certainly occurred in the Ocean SAMP area. Two privateers are know to have been lost in Rhode Island waters, one of which might be in the Ocean SAMP area. It is probably the more await discovery.

54. Known and potential military-related shipwrecks from other periods of Rhode Island history also contribute to the submerged military landscape. While few in numbers and less characteristic of the overall landscape, some of these may be highly significant. Military vessels from the late-17th century or early-18th century, as yet unknown, if discovered they would contribute significantly to our understanding of Rhode Island history.

55. The known cultural resources that contribute to the military cultural landscape are listed in Table 2 below.

Table 2. Submerged Cultural Resources Associated with the Military Landscape

Submerged Cultural Resources Associated with the Military Landscape			
Vessel/Aircraft	**Type**	**Date of Loss**	**Located within Ocean SAMP Area**
Admiral Parker	Armed Schooner	9/22/1777	Possibly – lost off Watch Hill
USS Alexander J. Luke	Destroyer Escort	10/22/1970	Possibly – sunk off Newport, possibly out at sea.
USS Bass	Submarine	3/12/1945	Yes – Off Block Island
Black Point	Collier	5/5/1945	Yes - Rhode Island Sound
USS Columbus	Frigate	3/28/1778	Possibly – lost off Point Judith
F6F Hellcat	Fighter Aircraft	10/22/1945	Possibly – crashed off Charlestown

Submerged Cultural Resources Associated with the Military Landscape (con't)			
Vessel/Aircraft	**Type**	**Date of Loss**	**Located within Ocean SAMP Area**
F6F Hellcat	Fighter Aircraft	8/17/1944	Yes – Salt Pond, Block Island
USS Leyden	Steam Tug	1/21/1903	Yes – Block Island
PB4Y Liberator	Navy Aircraft	1/31/1944	Yes – Rhode Island Sound
USS Lightship #73	Lightship	9/14/1944	Possibly – Near Buzzard's Bay Entrance Tower
USS L-8	Submarine	5/26/1926	Yes – Rhode Island Sound
Minerva	Navy Transport	10/21/1778	Possibly – lost off Westerly
USS Revenge	Armed schooner	1/8/1811	Possibly – lost near Watch Hill Reef
USS Scout Patrol 907	Scout Patrol	9/18/1918	Possibly – Burned at entrance to Narragansett Bay
Sisters	Navy Transport	11/7/1777	Possibly – lost near Point Judith
AD-5W Skyraider Trainer	Navy Aircraft	12/27/1957	Possibly – crashed off Charlestown
USS Snowden	Destroyer Escort	6/27/1969	Possibly – towed out to sea and used as a target for bombing and strafing
HMS Syren	Frigate	11/7/1777	Possibly – lost off Point Judith
Triton	Navy Transport	11/10/1777	Possibly – lost near Point Judith
Two Brothers	Privateer	3/11/1777	Possibly – lost near Westerly
Two Mates	Schooner	11/7/1777	Possibly – lost near Point Judith
USS Waller	Destroyer	2/2/1970	Possibly – sunk as target off Rhode Island
PT-95	PT-Boat	9/4/1945	Possibly – destroyed at Rhode Island
PT-96	PT-Boat	9/7/1945	Possibly – destroyed at Rhode Island
PT-97	PT-Boat	9/7/1945	Possibly – destroyed at Rhode Island
U-853	Submarine	5/5/1945	Yes – off Block Island

410.6 Fisheries Landscape Context

1. Chapter Five of the Ocean SAMP describes commercial and recreational fishing in and around the Ocean SAMP area. It also identifies important historical elements related to the current state of fishing, target species, fishing ports and communities. For thousands, of years the Ocean SAMP area has been fished extensively. This hunting and gathering of the living marine resources in the Ocean SAMP area has affected broad areas of the landscape. Sometimes these relationships and their related cultural heritage resources are obvious such as in pre-contact shell middens. Often, however, the influences and material culture of fishing and harvesting have been overlooked by archaeologists and historians.

2. Studying the effects of historical fishing on marine populations and habitats is an important new area of scholarship that is adding critical baseline information about pre-commercial or pre-industrial ecosystems and the extent and potential effects of fishing. Understanding existing ecological conditions requires knowledge of the past as well as current human influences and activities. The condition of species have influenced, in important ways, human activities that extend back millennia in the Ocean SAMP area. The many known and undiscovered or unrecognized components of this landscape, such as historic fishing vessels, fish traps, working and remnant piers, and the altered habitats of historic fishing groups represent untapped opportunities to gain important knowledge about human activities and their relationships with the marine environment of the Ocean SAMP area. Many of these resources, including unique or representative fishing vessels and the archeological remains of traps and piers that are 50 years old or older are likely candidates for the National Register of Historic Places. Fixed on shore, the presence of historic submerged piers or fish traps are easier to determine and locate. The locations of many fishing vessels, however, are unknown—indeed, the number of vessels lost in the area since the European contact remains unknown. This is an important historical and archaeological research question and has implications for the citing of new structures in the Ocean SAMP area.

410.6.1 Rhode Island Fisheries

1. The commercial fisheries of Newport and Sakonnet Point have origins dating back to the 17th century (Hall-Arber et al. 2001). Colonial fishermen in Rhode Island operated a "hook and line" fishery utilizing small skiffs, or set seine nets along the shore. The small fish caught with seines were used primarily as manure in the fields. (Olsen et al. 1980). During the mid-1800s, the use of staked and floating fish traps, set close to shore, came into prominence as a fishing technique, eclipsing the hook and line method. This new method of fishing was much more efficient (Olsen et al. 1980). At the time, traditional hook and line fishermen claimed that the waters of Rhode Island were being overfished by these new technologies.

2. The development of the fishing industry coincided with the development of markets for fish and with the ability to store and transport fish. Toward the turn of the 19th century, fish could be shipped by steamship from Newport to New York, or via railroad. In 1876, construction was completed on Government Harbor (now Old Harbor) on Block Island's

east side, which led to an expansion of the fishing industry and the accommodation of larger vessels that could go farther out to sea for a longer time. (RIHPHC 1991) In 1889, there were a reported 127 million pounds of fish landed in Rhode Island, of which 89 percent were menhaden (Olsen and Stevenson 1975). Menhaden plants, which rendered the fish for oil, were common throughout the New England coastline around the turn of the century.

3. During the 1920s and 1930s, menhaden began to disappear off the coast of New England as stocks were overfished, and many of the menhaden plants were forced to close. Fishermen were pushed to pursue other species (Bort 1981). In the 1930s, the first otter trawls were used off Rhode Island (Olsen and Stevenson 1975). Marine diesel engines were also introduced around this time, allowing fishermen to travel further offshore in pursuit of fish (Bort 1981). Trawling quickly became the dominant method of fishing, and trap fishermen soon began criticizing trawlers for a decline in stocks.

4. During the 1960s, significant stocks of lobsters which had not previously been fished were discovered offshore, providing a large boost to landings and value in the state's lobster fishery (Sedgwick et al. 1980). Around this time, traps replaced trawling as the dominant method for catching lobsters offshore, and this also significantly boosted lobster landings and revenues (Bort 1981).

5. As in other states around the country, the presence of foreign fishing fleets was a contentious issue in Rhode Island in the 1960s through the mid-1970s, until the passage of the Magnuson Stevens Fishery Conservation and Management Act in 1976, which declared a 200-mile limit on U.S. waters. Rhode Island offshore fisheries continued to grow even during the time of massive fishing efforts by foreign fleets, as some of the offshore stocks were not heavily exploited by foreign fleets, and were thus targeted by Rhode Island vessels. This led to rapid expansion of Rhode Island fisheries in the late 1970s and early 1980s. In 1979, there were a record 264 offshore vessels landing at Rhode Island ports, although some of these vessels were home-ported elsewhere.

6. Rhode Island's important squid fishery began in the late 1800s as a bait fishery, and a market for human consumption developed during the 1960s. From the late 1960s through early 1980s, squid was heavily exploited in Rhode Island waters by foreign fishing fleets. After the departure of foreign vessels from U.S. waters, Rhode Island vessels were among the first to target squid in large numbers; Rhode Island commercial landings for squid increased by an order of magnitude from 1981 through 1992 (DeAlteris et al. 2000).

7. During the 1980s, the commercial fishing industry in Rhode Island was growing, increasing by 24 percent in total landings from 1980 through 1987, while landings in the other New England states declined by 37 percent. This increase was due in part to an increase in fish consumption nationwide, to the increased harvesting of what at the time were underutilized species (such as squid and butterfish), and also to a significant increase in international exports from Rhode Island, particularly to Japan. This growth was also aided by public investment into the fishing industry during the late 1970s and

1980s, including the development of piers at both Newport and Galilee (Intergovernmental Policy Analysis Program, University of Rhode Island, 1989).

410.6.2 Fishing and Subsistence on Block Island

1. Modern archaeological investigations suggest that Indian people living on Block Island depended heavily on marine plant and fish life as early as 3,000 years ago (Tveskov 1997). There is historical evidence of significant Indian fishing during the late 17th century on Block Island. Two centuries later, beach walkers regularly discovered examples of Indian fishing technology in the form of heavy grooved stone sinkers (Livermore 1877).

2. Fish and marine vegetation directly and indirectly influenced diets and ecological conditions on Block Island, promoting sufficient nutrition and sustainable agriculture.

3. Beginning in the late 18th century, possibly earlier, Block Island farmers (many of them also fishermen) used seaweed to protect crops from extreme weather and to nourish the heavily worked soil. Farmers also mixed seaweed with fish offal and soil to create compost. These marine resources and local agricultural practices maintained the soil's fertility despite centuries of intensive use. Livermore, the island's principal early historian, noted that Islanders gathered over 6,000 cords of seaweed valued at $10,000 in 1875. By that time many Islanders maintained the exclusive right to collect weed from specific areas. A large area of public beach, however, remained opened to all islanders. Such divisions are important markers on the island's historic cultural landscape (Livermore 1877).

4. Commercial fishing has long and important history in New England and the Ocean SAMP area. Intimately tied to early exploration and settlement in the region during the 16th century, fish enticed thousands of ships and tens thousands of European mariners and fisherman to cross the North Atlantic to the Americas. They discovered and charted off-shore banks and interacted with native people. In terms of economic value, the fish caught and processed by the French and English fishermen outstripped the more famous New World treasures of gold and silver extracted by the Spanish Empire (Fagan 2006; Pope 2004).

5. Cod was the most important species for the Atlantic markets. Abundance combined with low level of oil in the flesh made it possible to store dried salted cod for extended periods. Cod, caught in the fall and the spring of the year, was the most important commercial species for Block Island fishermen in the 19th century. In 1880, Block Island fisheries employed 263 people, producing in excess of one million pounds of fish, roughly three-quarters of which was dry cod. Fishermen also caught other species such as dogfish and mackerel. In the 19th century, fishermen from other Rhode Island ports and neighboring states competed with Block Islanders (Goode 1884).

6. In late 19th and early 20th century, Block Islanders attempted to maintain proprietary connections to their local environment and resisted the introduction of new fishing technologies to "their" waters in the 1880s (Goode 1884). One important exception was

the introduction in the late 1860s of fish traps or pound nets. Pound nets required that many pilings be driven into the seafloor, the remnants of which might exist in regularly spaced intervals in near-shore areas around the island (Livermore 1877; Goode 1884). The rough Atlantic environment made maintaining traps challenging, but archaeological remnants may well remain.

410.6.3 Historic Shipwrecks of Fishing Vessels

1. The wrecking of ships, particularly of fishing vessels, has occurred throughout the centuries in Rhode Island and remains a common occurrence in the Ocean SAMP area during the present day. In the historical record, fishing is an elusive and often confusing subject. Accounts of the transporting and selling of fish are available for some places and periods. In the later 19th century, government-generated statistics become more common. However, in the distant past and in more recent times, the records of individual fishing voyages remain rare and if in existence, they often reveal little information about actual fishing activities, much less fishing life. Official documents between the 16th through the early 19th centuries seem to have rarely recorded (or at best under-recorded) the losses of early fishing vessels. Based on examinations of manuscript and federal records by Ocean SAMP investigators, this pattern seems to hold true in the late 19th and early 20th centuries, particularly when it comes to smaller fishing vessels.

2. The potential for unreported but historically significant commercial fishing vessel wrecks in the Ocean SAMP area and surrounding waters is extremely high. The most important individual wrecks would be the rare early vessels of 16th through the mid 19th centuries. However, when considered as part of a larger fisheries landscape in Rhode Island and in the Ocean SAMP area, fishing vessels and associated technologies from the late 19th century through the 20th century have the potential to provide an unbroken, representative, and highly illuminating archaeological record. These types of cultural heritage have extraordinary potential to add significant new knowledge in many in areas, particularly in terms of the environment and culture. Often overlooked because of apparent commonality and unromantic uses, it is essential to note that any commercial fishing vessel built 50 years ago or more may be eligible for the National Register of Historic Places. Research is clearly needed to identify these resources and to develop standards to evaluate these wrecks for purposes of study, public use, and historic preservation.

3. Cultural heritage research relating to commercial fishing is in its early stages in neighboring Massachusetts, where archaeologists and biologists at Stellwagen Bank National Marine Sanctuary have discovered the locations several wrecked fishing vessels. Efforts are underway to evaluate and nominate some of these wrecks to the National Register of Historic Places. Many similar wrecks exist in the Ocean SAMP area and adjacent waters. While not all of these wrecks may merit preservation, the older vessels certainly require inventory and assessment—a level of study that will generate an improved understanding of the Ocean SAMP area's cultural and natural heritage.

4. At present, the there is no solid estimate of the number and composition of historic shipwrecks related to commercial fishing in the Ocean SAMP area. There is also no

direct historical evidence of the earliest vessels that likely passed through the Ocean SAMP during the second half of the 16th century. It is possible that one or more of these craft wrecked in the Ocean SAMP area.

410.6.4 Historic Harbor Features

1. Commercial fishing drove the development of harbor facilities in the Ocean SAMP area in the 17th through the 20th centuries. In 1670's, the first legislation supporting the construction of a pier at Block Island cited the encouragement of fishing as its principle justification. Subsequent successful and unsuccessful efforts to establish safe harbors on the island focus on fish. In 1816, Block Island fisherman constructed the "pole harbor" near present day old harbor. Consisting of pilings driven into the bottom and boulders, the pole harbor offered adequate shelter in normal conditions. If stormy weather threatened, fishermen pulled their boats onto the shore. By 1870s and the opening of the Government Pier, the pole harbor consisted of 750 pilings (Goode 1884; Mendum 1897). For the next two centuries and beyond, all efforts to build harbor facilities at Block Island had strong ties to the fisheries (Livermore 1877; Goode 1884).

410.7 Marine Transportation and Commercial Landscape Context

1. While none of Rhode Island's cargo ports or naval facilities are within the Ocean SAMP area, cargo ships, support vessels and military craft traverse the Ocean SAMP area *en route* to the Rhode Island ports of Providence, Quonset/Davisville, and Newport in Narragansett Bay, and the Massachusetts port of Fall River (which includes Fall River and Somerset) in Mount Hope Bay.

2. In the 1620s, Dutch shallops (coastal vessels) from New Amsterdam (later New York) regularly transited the Ocean SAMP area and entered Narragansett Bay. In 1625, Dutch traders established a base on Dutch Island in Narragansett Bay where they conducted a lucrative trade with the Indians.

3. English settlers that arrived in Rhode Island in the 1630s reshaped maritime traffic in the Ocean SAMP area dispatching merchant ships both to Massachusetts and New York. In 1634, the first English cargo of maize (Indian grown) was shipped out of Rhode Island, through the Ocean SAMP area, to Boston. Although Aquidneck islanders embraced and expanded the commercial connections with Massachusetts, they also fostered links with New Amsterdam. The latter had widespread implications, since trade with Manhattan resulted in increasing numbers of Rhode Island merchant ships in Long Island Sound, Block Island Sound and along the Connecticut shore (Bridenbaugh 23-24).

4. During the 1640s, Rhode Islanders cultivated modest amounts of tobacco, which they exchanged for English manufactured goods, including textiles and ironware. William Coddington and William Withington were two of the earliest pioneers in this regard (Bridenbaugh 25).

5. The influx of Quakers into Rhode Island, which started in 1657 and accelerated after 1672, greatly affected patterns of trade and transportation in the Ocean SAMP area.

Quakers bought with them extensive regional and international commercial connections and Rhode Island Sound became the thoroughfare through which they operated.

6. Although Rhode Island shipbuilders constructed relatively large vessels during the 18th century, earlier vessels built in the colony, skiffs, pinnaces, shallops, ketches, were very small. Ranging from 16-30 tons these vessels were used for trade and/or fishing. In 1649, Captain Jeremiah Clarke built a barque called the *Sea Flower* and, in so doing, became the first Rhode Island merchant to own a vessel larger than a shallop. In general barques ranged from 30-50 tons. By the early 18th century, Rhode Islanders started building sloops with some regularity. Early centers of boatbuilding included Portsmouth, Newport, Wickford, and Dighton on the Taunton River (Bridenbaugh 22, 61-83). In 1708, Rhode Island merchants owned a total of 24 vessels. That number increased to 80 vessels by 1731, 120 vessels by 1740 and more than 500 by 1763 (McLoughlin 57-58).

7. As Rhode Island's economy grew in the second half of the 17th and the early 18th centuries, Newport both led the way and benefitted the most from the expansion. Providence followed closely behind and became preeminent after the American Revolution.

8. In the 18th century Newport and Providence merchants made money in the strengthening Atlantic economy, shipping sugar, molasses, whale oil, spermaceti candles, livestock, fish, lumber, wheat, and slaves to ports on the Atlantic rim. Sometimes Rhode Island merchants participated in the infamous triangle trade of sugar, rum and slaves. Some merchant families like the DeWolfs generated huge profits from the slave trade, while others like the Browns, suffered periodic commercial setbacks. Virtually all ships *en route* to European and Caribbean ports passed through the Ocean SAMP area.

9. In the years following the American Revolution, Providence merchants pursued opportunities in the newer trades with South America, Australia, and Asian ports. The port of Providence remained preeminent into the 1820s and 1830s (Albion et al 1970; Kellner and Lemons 2004). One of America's earliest China Trade vessels, the *Ann and Hop*e, was lost off the coast of Block Island in January 1806.

10. The 19th century saw a pronounced decline the volume and economic significance of Rhode Island's foreign commerce, particularly when compared to Boston and New York. Where Newport had been one of colonial North America's busiest ports, by 1832 the total tonnage of ships arriving from abroad to the Rhode Island ports of Providence, Bristol and Newport amounted to less than 30,000 tons. By contrast, Boston also recorded over 158,000 tons of arrivals from foreign ports and New York port more than 400,000 tons. Significantly, nearly all of the Rhode Island arrivals were American vessels—many of them possibly Rhode Island owned. About 13 percent of Boston's arrivals and more than 25 percent of New York's were foreign bottoms (22nd Cong. 2nd sess. S. Doc. 109). By 1849, the Rhode Island total had fallen to under 23,000 tons (with Newport only 3200 tons). That same year saw Boston's arriving foreign commerce reach 451,000 tons and New York 1,118,000 tons (27th Cong. 2nd Sess. S. Doc. 356).

11. Steam navigation became a component of Rhode Island's maritime sector in the early 1820s and grew in importance over the century. Rhode Island's first steamboat was reportedly the *Firefly* that operated between Newport and Providence in 1817. More significant, however, was establishment of steam packet service between New York and New England by way of Long Island Sound. The first Long Island Sound-style steamboat, *The Fulton*, was launched in 1814 by Elihu Bunker, and by the early 1820s, all passengers traveling to or from Boston by steamboat passed through Providence (and the Ocean SAMP area). After 1847, the Fall River, Massachusetts replaced Providence on the New York/ Boston route, however, all of the steam traffic to continued to pass through Ocean SAMP area waters (Albion 1972).

12. In 1869, there were 31 steamboats constituting about 27,000 tons in the Rhode Island fleet, a figure that compared favorably with neighboring New England states-- trailing Connecticut and Massachusetts--but surpassing Maine and New Hampshire. In addition, many of the Rhode Island steamboats were larger and reflected interregional rather than local routes (Report of Commerce and Navigation for the Fiscal Year 1869). This pattern was more pronounced in 1879, a year that Providence and Fall River each rivaled Boston in the tonnage of steamboats calling at their wharves. When combined, the volume of coastwise steamboat traffic entering Providence and Fall River reached an estimated 1,800,000 tons, surpassing New York port by nearly 300,000 tons (46th Congress, 2nd Session H.Exec.Doc. 7)

13. The combination of steam, brightly painted wooden hulls and deckhouses, and a desire for speed, in combination with primitive harbor facilities and other navigation hazards led to significant steamboat disasters in or near the Ocean SAMP area. Among them, the burning of Lexington in 1840; the grounding and destruction of the Atlantic on the northern end of Long Island Sound in 1846 (immortalized by a Currier and Ives lithograph). In Rhode Island off Watch Hill in 1872, the steamboat *Metis* collided with a schooner and sank. In 1880, the *Rhode Island* grounded and broke up near Bonnet Shores in Narragansett Bay. In 1907, the *Larchmont* was destroyed in a collision southeast of Watch Hill (See also Section 410.9). These were major disasters; many smaller steamboats including tugs and cargo vessels also suffered accident and loss in or near the Ocean SAMP area.

14. As the volume of maritime commerce along the Atlantic coast grew, the federal government assumed responsibility for establishing aids to navigation and protecting public safety with a system of lighthouses and lifesaving stations. Lighthouses established on Block Island, Sakonnet Point, Point Judith and Watch Hill (as well as in the Bay) are important representatives of this enduring federal program. One US Lifesaving Service station remains on the west side of Block Island, another at Narragansett Pier and there are historic US Coast Guard stations at Newport, Point Judith and Block Island.

15. Much of the domestic traffic through the Ocean SAMP area during the nineteenth century escaped formal documentation. Fishing vessels, yachts, tugs, and small steamers had little need to file paperwork. One area, coal (See also Section 410.9) left a deep impression in historical documents and in the archaeological record. During the later

nineteenth and early twentieth centuries, large quantities of coal transported by a fleet comprised of hundreds of vessels contributed to the highest levels of traffic and human activity in the recorded history of the Ocean SAMP area. In 1893, more than 60,000 vessels passed by Point Judith. (55th cong. 2d session House Document 60, Harbors of Refuge at Point Judith, Block Island, and Great Salt Pond, etc. 1903). Another stream of vessels passed south and east of Block Island and missed passing Point Judith. If counted, they would add thousands more voyages to the 60,000 figure.

16. In the early 20th century, during the 14 years known as "Prohibition," maritime activity in Rhode Island's offshore waters expanded to include the illegal transport of alcoholic beverages. Rum supply vessels typically lined up offshore beyond federal jurisdiction and supplied "rum-runners," small boats that could outrun Coast Guard enforcement vessels while smuggling alcohol back to shore. One source indicates that rum supply vessels serving Rhode Island communities anchored in the Ocean SAMP area about 15 miles southeast of Block Island, and that rum runners used the three entrances to Narragansett Bay to their advantage in attempting to avoid enforcement vessels (Hale 1998).

17. To understand the cultural and historical significance of the Ocean SAMP area it is crucial to recognize that maritime activity in Rhode Island underwent a dramatic transformation during the nineteenth century. While the state's foreign trade declined in significance, this did not mark a reduction in maritime traffic through state waters. Domestic maritime traffic through the Ocean SAMP area grew rapidly along with New England's industrial economy and urban areas. (See also Section 410.9) Introduced early in the century, steamboats reached their peak as a passenger transport system simultaneously with the busiest era of coastwise commercial trade.

18. Although statistical tracking of domestic shipping in the United States was inconsistent, it is clear that that overall vessel traffic levels through the Ocean SAMP area climbed exponentially during the nineteenth century, and that Rhode Island maintained a strategically important maritime sector. At the very time that Rhode Island's foreign maritime commerce was declining, growing numbers steamboats and coastal merchant vessels transformed the Ocean SAMP area waters into a segment of a northeastern U.S. maritime highway equivalent in significance to the modern I-95 interstate.

19. For more detail on marine transportation, navigation and infrastructure in the Ocean SAMP area, see Chapter 7.

410.8 Recreation and Tourism Landscape Context

1. The Ocean SAMP area and adjacent coastal communities have a long history as centers of marine recreational activity and as seaside tourism destinations. Since the mid-19th century, tourists have traveled to Rhode Island to enjoy the natural beauty of the South County beaches and to enjoy popular seaside resorts. Throughout the latter part of the 19th century, coastal areas were increasingly viewed as desirable destinations for vacation and recreation, and new forms of transportation enabled access to such locations. Coastal transport was flourishing at this time, and much of this trade was in the transport of passengers via steamboat between urban centers and seaside resort locations

(Labaree et al. 1998). Companies such as the Fall River Line provided overnight steamboat service from New York, via the protected waters of Long Island, Block Island, and Rhode Island Sounds, to resort towns such as Newport, or to Fall River to connect with a Boston-bound train (Labaree et al. 1998). Passenger steamships also provided transport to Block Island, and to Narragansett Bay coastal camps and amusement parks such as Rocky Point in Warwick and Bullock's Point in Riverside (Albion et al. 1970).

2. Newport, dubbed the "City by the Sea," is considered by some sources to be the oldest summer resort in the nation. Many wealthy individuals from East Coast cities such as New York and Philadelphia cruised to Newport by yacht through Ocean SAMP waters to enjoy what were considered the ideal sailing waters of Block Island Sound and Narragansett Bay. As such, Newport's rise as a resort community was due in part to its location adjacent to the Ocean SAMP area waters. Yachting and recreational boating had expanded dramatically in popularity in the late-19th and early-20th centuries throughout the U.S. due to the increase in discretionary income and leisure time amongst the upper classes. Narragansett Bay and the adjacent ocean waters have been popular locations for yacht racing activities and regattas since 1860. From 1930 to 1983, America's Cup racing was based out of Newport and the races were held just outside of Narragansett Bay off Brenton Point. Increasingly large crowds of visitors came to Newport and the adjacent waters; by one count, 100,000 people converged on Newport for the 1983 race (Kellner et al. 2004).

3. Block Island has also become a popular tourist destination since that time. The late 19th century marked a new era of tourism for the island, and the development of boarding houses, hotels, and cottages took place in a sequential pattern and led to a dramatic increase in the annual summer population on the island. (RIHPHC 1991) In addition to seaside tourism, Block Island has historically been a popular destination for recreational boaters and sailors. A 1948 cruising guide, Yachting in North America, identifies Block Island as a recommended destination.

4. For more detail on recreation and tourism in the Ocean SAMP area, see Chapter 6.

410.9 Energy Landscape Context

1. For nearly 300 years, the production and transfer of energy has shaped the cultural landscape of the Ocean SAMP area and adjacent coastal areas. At first, this shaping took place on land, but in the nineteenth century began to encompass the oceans.

2. For more than one thousand years before the European invasion of New England, Block Island supported large Indian populations who met their energy needs by taking sustainable quantities of wood from the island's dense forests. When Europeans settled Block Island in 1662, they commenced altering an ecosystem and visual landscape created through centuries of deliberate Indian activity (Cronon 1983). The limited coverage of trees and miles of stone fences marking the island today resulted from a heedless consumption of energy that soon exhausted the Island's forests. In 1721, Simon Ray, a town elder warned that the wasteful consumption of trees could force the community to abandon the Island for lack of fuel and building material. Survival came

not from rational conservation but the discovery of Block Island's vast beds of peat. Derived from wet compressed decomposed organic matter, peat is the geological ancestor of coal. Using peat for fuel required Block Islanders to engage in the time consuming and laborious process of digging, flattening, stacking, and drying. Known as "tug" on Block Island, the fuel was carefully stored in purpose build "tug houses." Between about 1750 (possibly earlier) and 1860, peat provided the only reliable source of energy on Block Island (Livermore 1877). The work required to gather and process made peat an expensive source of energy when measured in the terms of human time and effort. In effect, Block Islanders have been paying a premium for energy for nearly three hundred years.

3. An 1846 shipwreck in Cow Cove brought some interest in the use of coal as a new fuel for Block Island. However, it took some time for coal to be accepted on the Island with the shift from native peat to imported coal coming with the 1873 completion of federal protected harbor and landing (Old Harbor). Begun in 1870, the harbor ushered in a new era on the Island. According Reverend Samuel Livermore, a Block Island historian writing in 1877, more construction had taken place on the island in the previous five years, than in the 50 year that proceeded it. Livermore also described in the installation of the Island's first coal furnace, in the First Baptist Church in 1875. By that year, Islanders had gotten past their fears of the new energy source and had shifted to the coal for their household stoves.

4. New England's dependence on energy, delivered by sea through the Ocean SAMP area, resulted from major historical processes that transformed the United States into the world's leading industrial economy. Three processes directly associated with Rhode Island created unprecedented demands for fuel in New England: the introduction of stationary industrial steam engines and their application to textile milling, the expansion of heat intensive metal manufacturing processes, and the replacement of wood by coal for industrial energy. Just as industrialization shaped Rhode Island's historic landscapes on land, it exercised parallel effects in the Ocean SAMP area, leading or contributing substantially to hundreds of accidents and deaths through shipwrecks and to major alterations to environment through the construction or improvement harbors, dredging of shipping channels, construction or improvements to lighthouses, docks, and lifesaving stations.

5. Although the "Ocean State", Rhode Island's history is more commonly associated with industry than the ocean. Many landmark moments in U.S. industrial history occurred in Rhode Island. In 1780, the Brown family installed the second industrial steam engine in the United States. Used to pump water, the engine kept an iron mine in service to supply a successful Brown blast furnace (Hunter 1985). Ten years later in a historic partnership, Moses Brown and the English millwright Samuel Slater constructed the first Arkwright-style textile mill in the United States (Coleman 1963). Like other American mills of the period, the motive power came from flowing water. However, in another Rhode Island first occurring in 1827, Slater established a steam-powered textile mill at Providence. Slater's steam mill also effectively inaugurated the New England energy lifeline. The anthracite coal used to fuel the mill originated Pennsylvania's Schuylkill region (Coleman 1963). The several hundred-mile journey from mine to mill followed a

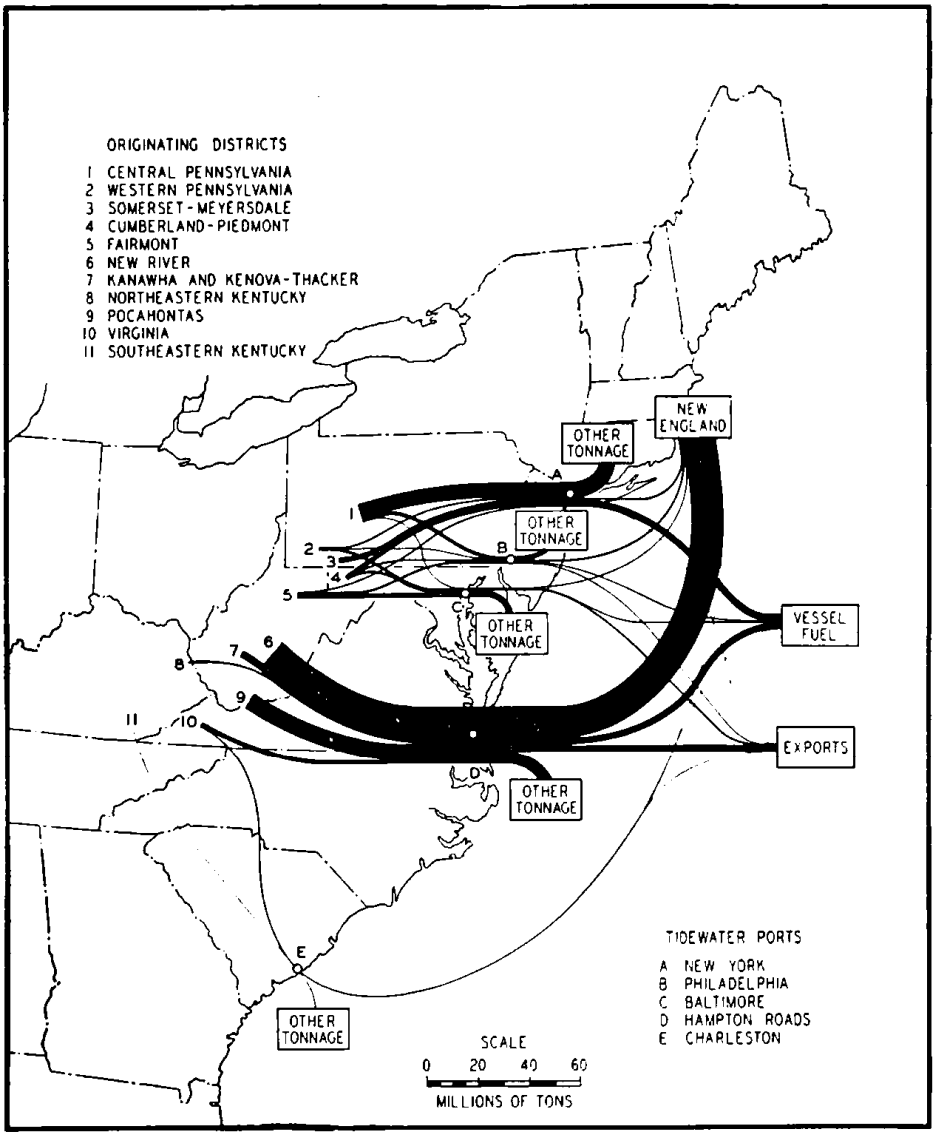
freshwater path to Philadelphia where, loaded on a ship it embarked on a sea voyage that would passed through the Ocean SAMP area into Narragansett Bay and up to Providence.

6. The spread of the stationary steam engine such as the one used by Slater, facilitated the growth of industry in New England, and freed it from geographic dependence on waterpower. Stationary steam allowed industry to centralize in urban areas where mill, factory, and foundry operators could find readily available pools of skilled and unskilled labor, excellent sources of capital, and well developed ports and railway connections (Hunter 1985). Providence became the national capital for stationary steam with the 1849 patenting of the locally developed and manufactured Corliss Engine. With improved fuel efficiency and operational consistency, the Corliss became the nation's most important steam engine with nearly 500 constructed in Providence before the Civil War (Hunter 1985).

7. The Corliss works was one of many energy intensive precious and base metal enterprises that transformed Rhode Island into America's most industrialized state. By 1880, Rhode Island's steam engines produced 38.1 horsepower per acre; nearly double Massachusetts (21.3), four times New Jersey (9.8), and nine times New York (4.9) (Hunter 1979). Rhode Island's concentrated style of industrialization occurred across the urban areas of southern New England. Between 1850 when Americans burned an estimated .36 lbs of coal per capita and 1918, coal consumption grew 77-fold nationwide. A sizable proportion of this increase occurred in New England. By 1907, Americans consumed nearly 5 tons of coal per capita annually (Schurr 1960). In the industrialized areas of New England, the per capita consumption was much higher. That year, over 10 million tons of coal arrived at New England ports, 3.5 million in Providence alone. In 1918, perhaps the peak year for the coal trade, the regional figure of coal shipped by sea reached nearly 20 million tons (Graaebner 1974; Gordon 1978; *Atlantic Deeper Waterways Commission* 1908).

8. Unlike America's other industrializing regions, New England lacked native coal in industrial quantities. For New England's industries to thrive, they relied on inexpensive coal mined in Virginia, West Virginia, Kentucky, Ohio, and Pennsylvania and transported as cheaply as possible. During the second half of the nineteenth century an *ad-hoc* and grossly inefficient system of coal transportation by sea developed. Canals, rivers and railroads carried coal to the major Atlantic ports where it was loaded on a grimy armada of schooners, schooner-barges, and barges that sailed or steamed north to a bewildering array of destinations. Figure 1., reproduced below, depicts the general flow of coal from mine to New England. (It does not represent the several ports that shipped coal through much of the period when coal transportation to New England expanded. By the 1920s, coal shipping had centralized in Virginia). In 1903, midway through the expansion of the coal trade, the principal coal companies reported delivering product to 142 separate destinations, most of them in New England. The quantities sent were huge, but many of the vessels were not, and the trade required the constant employment of hundreds of vessels, many as small as 200 tons. In January of that year, Boston received 333,000 tons of coal and Providence 181,000 tons (57^{th} Cong. 2^{nd} Sess. H. Doc. 15 pts 7,8 & 9 *Monthly Summary of Commerce and Finance of the United States for the Fiscal Year 1903*).

Figure 1. Tidewater Shipments of Bituminous Coal, 1929. (Reproduced from Fritz and Veenstra, *Regional Shifts in the Bituminous Coal Industry, p. 89)*



9. The large quantities of coal transported by a fleet comprised of hundreds of vessels contributed to the highest levels of traffic and human activity in the recorded history of the Ocean SAMP area. During the peak decades of coal, maritime traffic dwarfed the contemporary levels described in Ocean SAMP Chapter 7, exceeding it by orders of magnitude in term of the numbers of ships and transits. In 1893, more than 60,000 vessels passed by Point Judith. Most of these (34,000) were classified as schooners. Barges accounted for an addition 9000 transits. It is difficult to estimate the proportion

of these vessels engaged in the coal trade but it would include nearly all of the barges, and probably a significant majority of the schooners. (55th cong. 2d session House Document 60, *Harbors of Refuge at Point Judith, Block Island, and Great Salt Pond, etc.* 1903). Another steam of vessels passed south and east of Block Island and missed passing Point Judith. If counted they would add thousands more voyages to the 60,000 figure.

10. At the beginning of the twentieth century, coal carriers followed one of two main routes through the Ocean SAMP area. Many, probably the majority, steered a course past Point Judith, sailing closer to the mainland than Block Island. Many of these small schooners came up through Long Island Sound, while others such as the *Addie Andersen*, a four-masted coal schooner bound for Providence passed east of Block Island before entering Narragansett Bay only to wreck on Whale Rock. When threatened by heavy weather, the vessels taking the offshore route sought protection on the lee sides of Block Island, a practice that contributed to many shipwrecks (55th cong. 2d session House Document 60, *Harbors of Refuge at Point Judith, Block Island, and Great Salt Pond, etc.* 1903).

11. Current data at least suggests that the majority of shipwrecks in the Ocean SAMP area involved transportation of coal to New England during a fifty year of period between 1870 and 1920 when the United States developed into the world's largest industrial economy. The rapidly increasing demand for abundant AND inexpensive energy in New England led to the creation of an *ad hoc* system of transportation that relied on many low-cost and vulnerable types of vessels. Operated by poorly paid mariners, many of them black, the coal barges represented the lowest strata on the maritime social scale (*The Seaman's Bill, Hearings Held Before the Committee on Merchant Marine and Fisheries on House Bill 11372*, December 14, 1911).

12. The Ocean SAMP area's energy landscape is highly significant in the history of Rhode Island and greater New England. The coal vessels provided critical infrastructure without which the region would have languished economically after the Civil War. It has been a largely forgotten chapter in the state's maritime or industrial history. Where merchant vessels such as the famous Brown family East Indiaman *Ann and Hope* that wrecked at Block Island in 1815 were highly visible in cultural terms and associated with the wealth and social status of their owners, the coal vessels, with a few notable exceptions, rarely contributed to the social status to their owners, officers, or crew. Indeed other merchant mariners regarded the grimy armada of coaling vessels and their crews with mixture contempt and pity due to the low wages, harsh living conditions, mixed racial composition of the workforce, and the frequent accidents they endured (*The Seaman's Bill, Hearings Held Before the Committee on Merchant Marine and Fisheries on House Bill 11372*, December 14, 1911).

13. The rapidly growing New England coal trade operated within a unique context of obsolescence, innovation, and forced operational economy. It resulted in a complex and historically significant cultural landscape in the Ocean SAMP area consisting of shipwrecks, harbors, canals, lifesaving stations, and aids to navigation. Among the most common wrecks are those of merchant sailing vessels built in the 1850s, 1860s, and 1870s and repurposed to carry coals, towed in long lines behind steam tugs. As the

demand for coal continued to grow and the supplies of older ships diminished, new classes of vessel evolved to fill the void, including some of the largest commercial sailing vessels ever built (Snow and Lee 1999). Shipyards also turned out specially designed schooner-barges. Less majestic and more common, these sail-equipped vessels were supposed to possess some capacity for independent navigation; however, the historical and archaeological record demonstrates that this usually was not true, especially in heavy weather. Over time, however, the relentless drive for economy led to an increasing emphasis on even cheaper and easier to construct barges. These early "box-barges" had poor seagoing capacities and many foundered in Rhode Island.

14. The shipwrecks of the Ocean SAMP area's energy landscape are important heritage resources associated with the industrialization of American seafaring. While not every wreck merits preservation, they all potentially can contribute a broader understanding of human activity within the Ocean SAMP area. At the very least, many of the energy related shipwrecks are almost surely eligible for the National Register of Historic Places. In addition, specific areas of the Ocean SAMP may be eligible as rural cultural landscapes. Cultural resource managers in other locations are beginning to study and preserve industrial vessels such as those found in the Ocean SAMP. At the Stellwagen Bank National Marine Sanctuary in Massachusetts, NOAA archaeologists recently documented three coal schooners, *Paul Palmer*, *Frank A. Palmer*, and *Louise B. Crary* and prepared successful nominations to the National Register of Historic Places. Archaeologists working in the Great Lakes region have documented and nominated numerous industrial era steamers, schooner, schooner-barges and related craft (Marx and Lawrence 2006; Cooper and Jensen 1995). Determining which of wrecks in the Ocean SAMP area's energy landscape should be included on the National Register will require a broader scale regional study. At this point, any coal vessels built more than fifty years ago are potentially eligible.

15. There is no clearly defined temporal end to the coal era in the energy landscape. In 2007, more than 4 million tons of coal entered Narragansett Bay and transited through the Ocean SAMP area (Ocean SAMP Chapter 7). The context of industrial shipwrecks, however, can be more tightly defined. During the 1920s, structural changes in the transportation of coal and advances in marine safety and navigation greatly reduced, although did not eliminate the wrecking of coal carrying vessels in the Ocean SAMP area. The centralization of coal shipping in Virginia and improvements in the receiving of coal at larger New England ports removed physical and economic roadblocks that prevented investments in safer large capacity coal barges and vessels. As long as waiting times to unload were irregular and often protracted, larger, safer, and more capital-intensive vessels could not compete with the inferior or less expensive vessel whose wrecks line the bottom and shorelines of the Atlantic Coast from Virginia through New England.

16. Coal dominates the archaeology of the Ocean SAMP area's energy landscape, but other fuels have left important marks. While the absolute volume of coal transported through the Ocean SAMP has continued to be high, its relative dominance in New England's energy lifeline slowly diminished after 1918 with rapid increases in the use of oil for fuel. In 1918, the burning of fuel oils produced the equivalent of 8% energy of the total energy

produced by coal in the United States. By 1922, that figure had doubled to 16% and by 1935 reached 21.5% (Schurr 1960). Although coal in vast quantities fueled and continue to fuel New England's power plants, it was increasing amounts of petroleum in the form of fuel oil, kerosene, and gasoline that provided the additional energy require to heat homes and power the millions of new motor vehicles then reshaping the country.

17. The history of transporting petroleum products by sea differs greatly from coal. It developed quickly and took on a highly rationalized form that included efficient port infrastructures for loading and unloading (Schurr 1960). Modern tankers first appeared in Europe in the 1880s, with the first American built tanker launched for Standard Oil in 1888. Tankers became more common with increased use of petroleum for fuel and this became increasingly true with the mass production of the automobile and the skyrocketing consumption of gasoline. In 1918, Americans consumed an estimated 74.5 million barrels of gasoline, a figure that grew 7-fold by 1939, the year that the tanker *Lightburne* ran aground and broke up on Block Island carrying a cargo of gasoline and kerosene (Schurr 1960; Snyder 2001). The *Lightburne* was not the first petroleum-carrying vessel to wreck in Rhode Island. An older wreck with potentially more historical significance is the tanker *Llewellyn Howland* that ran aground and broke up on Seal Ledge, dumping thousands of barrels of fuel oil into the Ocean SAMP area in 1924 (Snyder 2001). The *Howland*'s history is not well known; however, research by URI investigators suggests that it is a first generation oil tanker built in 1888, and a very likely candidate for the National Register of Historic Places.

18. Transporting energy by sea brings risks. In 1996, the *North Cape*, a barge containing 3.9 million gallons of home heating oil, grounded at Moonstone Beach in Rhode Island. The ensuing spill of 828,000 gallons was the one of the worst environmental disasters to occur in Rhode Island's waters. In terms of human use and its' cultural and environmental impacts on the Ocean SAMP area, the *North Cape* grounding was but one of the latest in hundreds of energy related transportation accidents that have occurred over the past 170 years (http://www.fws.gov/Contaminants/restorationplans/NorthCape/NorthCape.cfm, Ocean SAMP Chapter 7).

19. In 2007, more than 6 million short tons of petroleum products entered Narragansett Bay via the Ocean SAMP area (Ocean SAMP Chapter 7). In 2010, the transportation of energy dominates commercial shipping through the Ocean SAMP area, accounting for 80 percent of the volume of cargo entering Narragansett Bay.

20. The production and distribution of energy dramatically shaped in the landscape of the Ocean SAMP area and adjacent coastal places, including Block Island and Point Judith. Some of the landscape features such as historic shipwrecks associated with the transportation of coal and petroleum are easy to identify in this historical record and to associate with the energy landscape. The cultural and historical significance of this archaeological landscape is clearly high, but determining specific contributions of each individual wreck to the landscape will require further research and analysis. At a minimum level, these wrecks connect with a time in history (1870 – 1920) when the human footprint on the Ocean SAMP area appeared more pronounced and its visual

characteristics markedly different from 2010. In heavily traveled areas of the Ocean SAMP, a typical day would have presented observers with an industrial maritime thoroughfare characterized by passage of hundreds of vessels and thousands of people. Modern harbors, industrial docks, dredged navigation channels, and legally proscribed shipping lanes that developed during this period are just a few of the non-shipwreck landscape features that connect in meaningful and *documentable* ways with the Ocean SAMP area's energy landscape.

21. Contemporary plans to develop renewable offshore energy in the Ocean SAMP area ~~are~~ can be seen as a direct continuation of three centuries of energy history. ~~The~~ Pursuant to this view, the connection of the proposed wind turbines with Block Island's power grid would provide the community with a local source of energy that is at once reliable, renewable, and economical--the first time since Indian people last controlled the island's forest resources in the middle of the 17th century. Implemented with care, offshore wind energy should pose little overall threat to the historical significance, meaning, and preservation of the energy landscape and its individual components. Irrespective of their aesthetic effects, the proposed towers would become the latest cultural signature on the Ocean SAMP area's historic energy landscape.

22. For more detail on renewable energy in the Ocean SAMP area, see Chapter 8.

Section 420: Submerged Archaeological Sites in the Ocean SAMP Area

1. Ocean SAMP submerged cultural resource investigations were designed to give a broad understanding of the extent, significance, and types of underwater historic and archaeological sites in the area, as well the way these sites were tied into the submerged cultural landscape of Rhode Island.

2. Generating an inventory and database of known and potential submerged historic requires an examination of published sources and existing databases, as well as historic research, digital historic cartographic research, geophysical survey and geo-spatial database construction. While investigations of post-contact submerged cultural resources usually focus on shipwrecks, other types of submerged properties, including historic submarine cables, docks, wharfs and buildings, should also be considered. In the Ocean SAMP area, at least one of these additional types of cultural resources, historic submarine cables is important to both historic preservation and development plans.

420.1 Potential and Known Marine Archaeology Sites

1. While the Ocean SAMP area contains a rich repository of submerged historic sites, estimating the total extent of that resource base is difficult. The data necessary, whether it be historical, archaeological or geophysical, is frequently incomplete and/or inaccessible. This sometimes results in contradictory data sets that have to be carefully analyzed, amalgamated and ultimately rationalized. Only then can reliable estimates of the resource base be generated. URI researchers have made significant strides toward doing that for the Ocean SAMP.

2. Military vessels lost during war and commercial vessels after about 1840 are comparatively well documented in the historical and archaeological record. Many of the earliest and potentially most significant shipwrecks, however, are undocumented. In a similar vein, vernacular craft, including fishing boats, are poorly understood despite their place in Rhode Island history and their undeniable relationships with and effects on the ocean environment.

3. Information about shipwreck losses in the Ocean SAMP area comes in multiple forms. By far the most reliable database is held by the Rhode Island State Historic Preservation and Heritage Commission (the Official State Database), which contains listing for 1041 shipwrecks in Rhode Island state waters. The Official State Database also includes significant information collected over many years by the Rhode Island Marine Archaeology Project (RIMAP) headed by Dr. Kathy Abbass. The Rhode Island Historic Preservation and Heritage Commission (RIHPHC) and RIMAP have an ongoing strong and fruitful working relationship. In addition to the Official State Database, there exists at least two complementary datasets. First, the Northern Shipwrecks Database, comprising in excess of 100,000 shipwrecks, has at least 1200 recorded in Rhode Island waters. Second, the National Oceanographic and Atmospheric Administration's Office of Coast Survey maintains the Automated Wreck and Obstruction Information System (AWOIS) that has 850 wrecks and obstructions for a region that extends from Long Island Sound to Cape Cod and includes Rhode Island waters.

4. Beyond these datasets, the University of Rhode Island has three databases; a working archaeological database that contains listings for 618 shipwrecks in Rhode Island waters (URI Working Database); a geophysical survey database that contains acoustic images of at least 30 shipwrecks in Rhode Island (URI Geophysical Survey Database); and a supplementary historic database, built from various sources including historic charts, and records of the US Life Saving Service, the US Coast Guard, the Navy and the Department of Commerce (URI Supplementary Historic Database).

5. The URI Supplementary Historic Database currently contains listings for 584 wrecking events in Rhode Island prior to 1908 as well as considerable information about non-shipwreck submerged cultural resources.

6. The historic cartographic research to support this database focused on geo-rectifying historic navigation charts for Block Island. The charts for 1914, 1934, 1957, 1966, 1968, 1970, 1971, 1972, 1973, 1975, 1977, 1978, 1985, 1996, 1997, and 1999 were geo-referenced and laid on top of the modern navigation chart. A similar procedure was followed with navigational charts for Block Island Sound, although in this case the process was less exhaustive. It did, however, incorporate data from the 1901 navigation chart of Block Island Sound which in turn was based on survey data from 1848. URI researchers also geo-rectified 1934 and 1999 charts of the Block Island Sound. In the process of doing this work they identified what was almost certainly the first modern hydrographic survey of Block Island waters – completed by the US Coast Survey in 1839. From these charts, researchers were able to map historic navigation corridors, hazards to navigation, obstructions, shipwrecks, shoaling, shoreline changes and patterns of maritime commerce.

7. All databases described above can be augmented with published dive guides - the most important of which are Marlene and Don Snyder's books *Rhode Island Adventure Diving* and Rhode Island Adventure Diving II; and Henry Keatts and George Farr's book, *The Bell Tolls: Shipwrecks & Lighthouses, Volume 1, Block Island*.

8. Outside government agencies, organized avocational groups, and academic institutions there are a wide array of people that possess critical information about shipwrecks and other submerged archaeological sites in Rhode Island. Among these are local users including commercial and recreational fishermen, and non-academic shipwreck experts including John Stanford and Mark Munro.

9. All of these databases and sources of information have strengths and weaknesses. While there is considerable overlap, there are also significant discrepancies between the datasets. As part of the Ocean SAMP process, researchers at the University of Rhode Island started to augment the Official State Database with extensive data from elsewhere. The final rationalized product will be an improved estimate of the location and extent of submerged cultural resources in the Ocean SAMP area. While this work is not yet complete, the progress made to date does allow for some preliminary analysis of the shipwreck resources in Rhode Island waters.

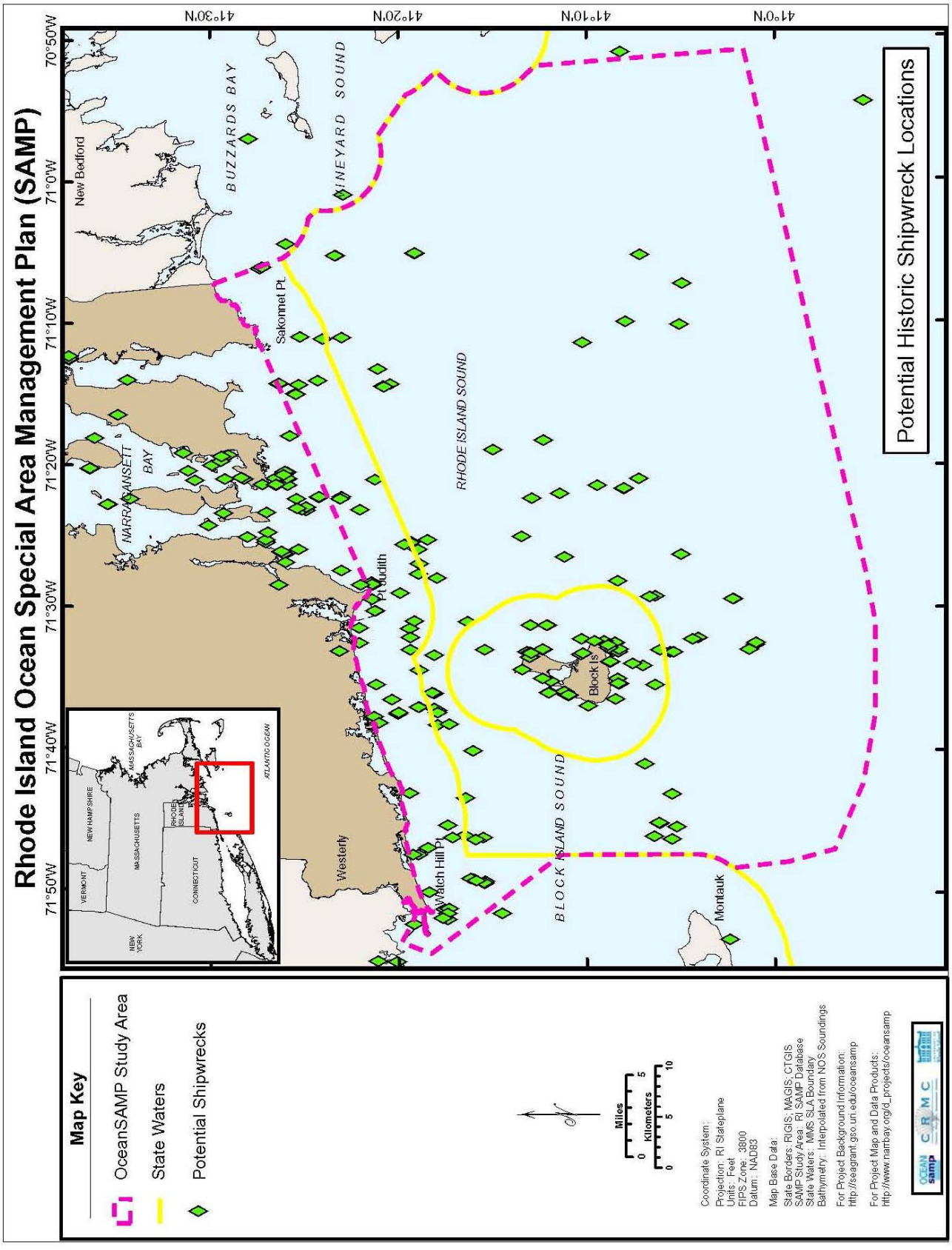
10. During the last 300 years, there have been at least 1200 maritime accidents and disasters Rhode Island and Rhode Island Sound that probably resulted in vessel loss and/or deposition of cultural material. This number excludes many 17th and 18th century accidents that are much more difficult to track in the historical record. Of the 1200 or more vessels lost in Rhode Island waters, approximately half occurred in the Ocean SAMP area. Of these, more than half have some locational association with Block Island. Other places strongly represented are the waters off Point Judith, Watch Hill and Beavertail.

11. It is difficult to know how many of the recorded maritime accidents and disasters left a material record that can be found, studied, protected and analyzed – but it is certainly a significant number. We have good location information for approximately 50 shipwrecks in the Ocean SAMP area, but given the number of known wrecks, many others clearly await discovery and assessment. The complete results from geophysical survey conducted as part of the Ocean SAMP study are not yet available, but when the archaeological processing of that data is complete, the RIHPHC will have additional information in their database. Much of the Ocean SAMP area remains un-surveyed for archaeological sites and important historic resources certainly lie in those areas.

420.2 Spatial and Temporal Distribution Patterns

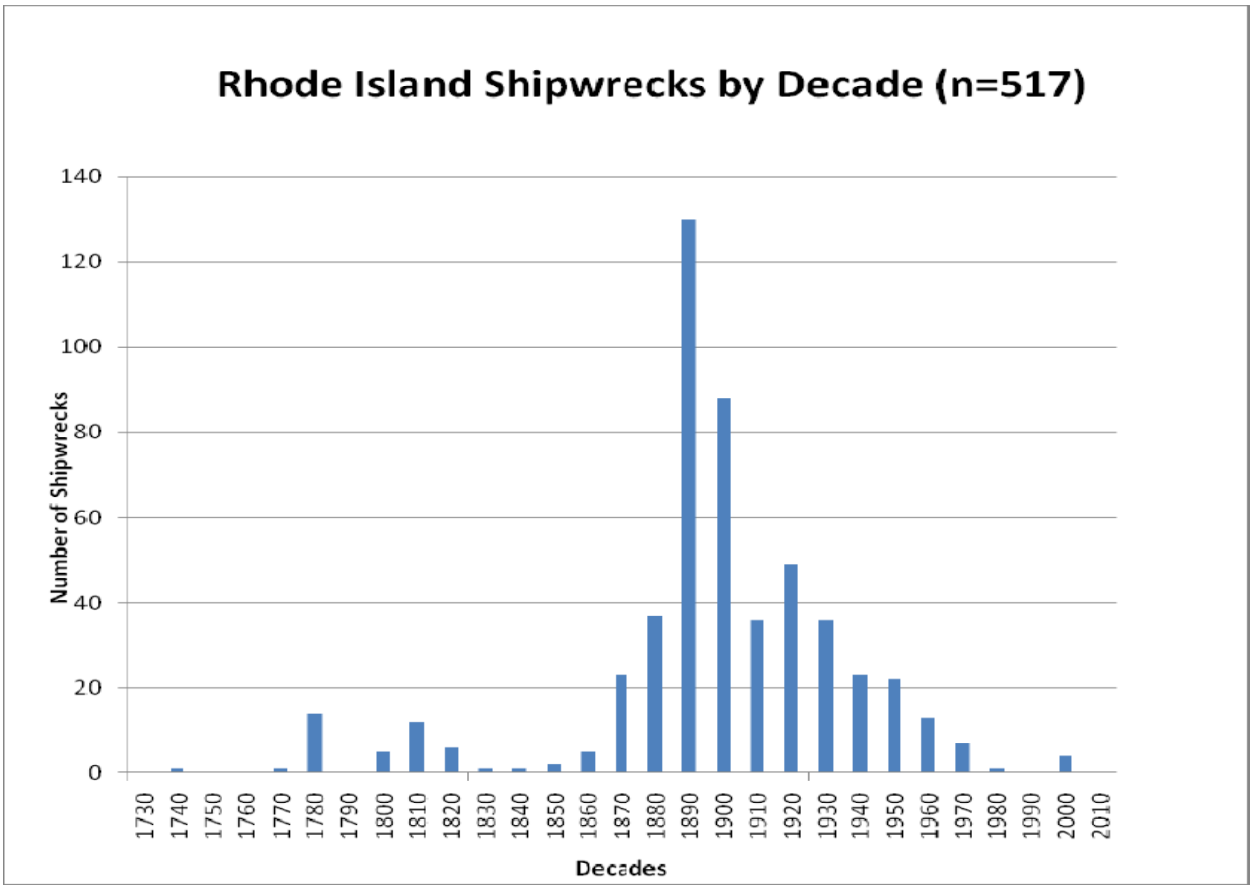
1. Figure 2. shows the preliminary spatial distribution of Reported Rhode Island Shipwrecks. This data was compiled from multiple database sources, but it is yet to be fully analyzed and consolidated. Not all the shipwrecks have been confirmed and in a few instances the map contains more than one point for an individual shipwreck. Nevertheless and despite its weaknesses, the map shows identifiable spatial patterning from which some general conclusions might be drawn.

Figure 2. Potential Historic Shipwreck Locations



2. Block Island has been a focus of vessel loss in Rhode Island waters. Heavy levels of commercial traffic over the past three centuries combined with strong currents, storms and frequent periods of heavy fog created environment in which shipwrecks on shore and collisions at sea were relatively common. The Ocean SAMP area shows another concentration of shipwrecks in a corridor that runs along the southern edge of the Rhode Island coast from Watch Hill to Point Judith. The lee shore and heavy levels of commercial and passenger traffic during the nineteenth century out of New York and along the southern coast of Connecticut and Rhode Island are largely responsible for this concentration. This heavier concentration of vessels along with dangers to navigation around Block Island, go a long way in explaining higher densities of shipwrecks in the northwestern part of the Ocean SAMP area. There is, however, an important caveat. The central-southern and southeastern parts of the Ocean SAMP area were further off shore and further away from land observation. Stricken vessels in these areas were less likely to be have been seen and less likely to have boasted survivors. In addition, there have been fewer modern attempts to map the ocean floor in the central and eastern parts of the Ocean SAMP area. As a result, our knowledge of these areas is less authoritative. They probably contain higher numbers of shipwrecks than are reflected current distribution patterns.

Figure 3. Temporal Distribution of Shipwrecks in the Ocean SAMP Area (SOURCE: Mather, 2010)



3. Figure 3. shows the temporal distribution of Rhode Island shipwrecks from the early 18th century to modern times, grouped by decade. The data comes from the URI Working Database, but analyses of other Rhode Island shipwreck databases mirror these results.

4. The graph shows a spike in the number of Rhode Island shipwrecks during the Revolutionary War and another during the first two decades of the nineteenth century. Starting in the 1860s, Rhode Island saw a sharp rise in the number of shipwrecks occurring in its waters. The numbers continued to rise, reaching their zenith during the 1880s. This certainly resulted from the rapid expansion of shipping activity across the Ocean SAMP area during America's most rapid period of industrial development. Demands for energy, particularly coal, in New England during the late 19th century caused hundreds of vessels a day to move through the Ocean SAMP area. Heavy traffic, hazardous waters and pre-electronic navigational instruments, provided a recipe for high losses of shipping and life. A decline in the number of shipwrecks per decade in the in the 20th century corresponded with improvements in navigational instruments and greater capitalization of US shipping.

5. Table 3. lists shipwrecks in the Ocean SAMP area for which the location in known.

Table 3. Known Shipwrecks in the Ocean SAMP Study Area

Name	Type	Year Built	Year of Loss	Location	Water Depth	Description
Achilles	Freighter		1887	Off Block Island		
Annapolis	Wooden Barge	1918 at Wilmington, DE (?)	1945	Off Charlestown Breachway	85'	Lost as a result of a collision with the USN Submarine Moray. Possibly owned by P. Dougherty Co., Baltimore, MD.
USS Bass	Submarine	1924	1945	Off Block Island	160'	Converted to merchant submarine in 1940. Sunk by navy aircraft (PBY-5A) during target practice.
Belleville	Freighter	1950	1957	Off Brenton Point	25'	Headed from Boston to Philadelphia. Ran aground on Seal Ledge. Later dynamited by Corps of Engineers to remove wreckage that represented a hazard to navigation.

Name	Type	Year Built	Year of Loss	Location	Water Depth	Description
Black Point	Collier	1918	1945	North of Block Island, southeast of Point Judith	100’	Headed from Norfolk Virginia to Boston with 7000 tons of coal. Torpedoed by German submarine U-853. The Black Point was the last merchant ship sunk in American waters during WWII.
Bouquet	Barge		1906	Off Quonochontaug Beach	120’	
Crystal Lake	Steel Coal Barge		1946	South of Misquamicut Beach	130’	The Crystal Lake was one of two coal-carrying barges being towed by the tug Nottingham from Edgewater, New Jersey to Providence. She sank in heavy seas 4 miles south of Misquamicut Beach. 7 men died. The other barge had been left in New London.
Essex	Freighter (formerly a Passenger Liner)	1890	1941	Southeast Point, Block Island	30’	Bound from Portugal to New York. A navigational error caused her to run aground on Southeast Point, Block Island. Close to the wreck of the Lightburne.
Explorer	Trawler	1978	1994	South of Aquidneck Island	90’	Hull pierced by floating debris (a 55-gallon drum).
George W. Humphries	Wooden Fishing Steamer	1877	1904	Brenton Reef	15’	Built in Philadelphia and owned by the American Fishing Company she ran ashore at Brenton Reef in 1904 when returning to Newport after fishing for menhaden. Navigational error.
Goliath	Tug		1942	Off Charlestown		
Grecian	Freighter	1899	1932	Off Block Island	100’	Bound from Boston to Norfolk in dense fog. Sunk after collision with a steamer called the City of Chattanooga. Later, the hulk was blown up to reduce risks to navigation.

Name	Type	Year Built	Year of Loss	Location	Water Depth	Description
F6F Hellcat	Fighter Aircraft	1941, 1942, 1943, 1944 or 1945	1945	Off Charlestown	20’	The aircraft experienced engine trouble during a patrol flight on October 21, 1945 in Rhode Island Sound. The pilot attempted to make an emergency landing at Charlestown Air Base, but was forced to make a water landing.
Hercules	Steam Tug	1880	1907	Off Misquamicut State Beach	15’	Built in Camden, NJ in 1880, home ported in New York, and owned by “Jay Steel Terminal” or more probably Jay Street Terminal, Brooklyn, NY. She had been chartered by the New York Herald in 1898 and dispatched to Cuba so that the newspaper’s correspondents could cover the Spanish American War. She was lost December 12, 1907 during a winter nor’easter. She struck “Old Reef”. She was bound from Newport for New London with 4 barges in tow.
Heroine	Fishing (dragger / trawler)	1899	1920	South of Watch Hill and Charlestown	80’	Built in Brooklyn NY, home ported in Boston, MA, owned by Commonwealth Fishing Company. Fishing off Block Island the fishing boat developed a leak and sank. Survivors picked up by another fishing boat, the Rose of Italy.
Idene	Fishing (dragger/trawler)		1991	Off Block Island	85’	Scuttled off Block Island
Jennie R. Dubois	Schooner		1902	Off Block Island	90’	
L-8	Submarine	1917	1926	South of Beavertail	100'+	US Navy submarine, built during WWI and sunk as part of torpedo tests on May 26, 1926.

Name	Type	Year Built	Year of Loss	Location	Water Depth	Description
Larchmont (formerly the Cumberland)	Passenger Paddle Steamer	1907		Off Watch Hill	130’	Owned by the Joy Line. Bound from Providence to New York. Collided with the Harry Knowlton, a coastal coal schooner.
USS Leyden	Navy Steam Tug	1866	1903	Block Island	15’	Assigned to Torpedo Station, Newport. On route from Puerto Rico to Newport. Ran aground on south coast of Block Island in thick fog due to a navigational error.
Lightburne	Tanker	1919	1939	Block Island	30’	Headed from Providence to Port Arthur, TX. Ran ashore near southeast light in heavy fog and strong winds. She had 72,000 barrels of gasoline and kerosene on board at the time of her sinking.
Llewellyn Howland (formerly Wico)	Tanker	1888	1924	Off Newport	30’	Built at Tyneside, UK. Bound from Fall River to Portland, ME with 25,000 barrels of fuel oil. Struck Seal Ledge south of Aquidneck Island.
Lydia Scholfield	Three-Masted Schooner	1860	1891	Butterball Rock, South of Castle Hill.	25’	Bound from New Orleans to Providence with 7,000 barrels of cotton-seed oil. Ran ashore in heavy fog.
Mary Arnold	Tug		1940	Off Charlestown	60’	In November 1940, the Mary Arnold was towing a lighter (barge) and a dredger called the Progress from Greenwich, Conn, to Riverside near Providence. They anchored off Charlestown in a fierce storm. All vessels sank. On board the Progress were four seamen, none of whom had been to sea before.
Meteor	Collier		1926	Block Island	20’	

Name	Type	Year Built	Year of Loss	Location	Water Depth	Description
Metis	Wooden Passenger Steamer		1872	Off Watch Hill	130’	The Providence and New York Steamship Company converted the Metis from a freighter to a passenger liner in 1864. In August 1872, the ship was bound from New York, via Long Island Sound, to Providence. The vessels was overloaded and overcrowded. Sunk after collision with two-masted schooner Nettie Cushing. There was substantial loss of life.
Minerva	Spanish Brig		1810	Near Brendon Reef	20’	
Montana	Schooner Barge	1870	1907	Northwest of New Harbor, Block Island	90’	The Montana was one of two coal barges being towed by the tug Buccaneer from Baltimore to Providence in January 1907. Both were lost in a violent storm. The larger barge, the Ash, was lost 10 miles east of Fire Island, New York. The smaller barge, the Montana, was lost just northwest of New Harbor, Block Island. There is some evidence of overloading.
Neptune II	Fishing		1989	Off Sakonnet Point	85’	
Onodaga	Freighter	1905	1918	Off Watch Hill	40’	Bound from Boston to Charleston, SC with a general cargo. Headed for Long Island Sound to avoid potential U-boat attacks. Navigational error caused her to strike the reef off Watch Hill.
P. T. Teti	Tug		1972	Off Sakonnet Point	100’	

Name	Type	Year Built	Year of Loss	Location	Water Depth	Description
Progress	Dredge		1940	Off Charlestown	60’	In November 1940, the Mary Arnold was towing a lighter (barge) and a dredger called the Progress from Greenwich, Conn, to Riverside near Providence. They anchored off Charlestown in a fierce storm. All vessels sank. On board the Progress were four seamen, none of whom had been to sea before.
Puszta	Freighter	1911	1934	Block Island	20’	Built in Newcastle, UK. Owned by the Anglo-Hungarian Shipping Co. Bound from Providence to Key West. Ran aground at Clay Head, Block Island, in thick fog.
USS S-51	Submarine		1925	Off Block Island		
Spartan	Freighter		1905	Block Island	15’	
Troydon	Fishing		1995	Off Block Island	135’	
U-853	Submarine	1943	1945	Off Block Island	130’	The U-853 sank the Black Point on May 5, 1945. The US warships Amick, Atherton, Moberly and Ericsson sank the U-853 later the same day

420.3 Submerged Telecommunication Cables and Corridors

1. Modern telecommunication cables and corridors are well understood in the Ocean SAMP area. The southern coast of Rhode Island has been heavily utilized for a succession of transatlantic communication cables. Cables currently “in service” include Transatlantic No. 12/13 (TAT-12/13), part of which runs from Green Hill, Rhode Island to Lands End, England; Gemini, part of which runs from Charlestown, Rhode Island to Oxwich Bay, near Swansea, Wales; and FLAG Atlantic 1 which runs from New York to the UK intersecting Long Island Sound and Block Island Sound. “Out of service” cables include Transatlantic No. 5 (TAT-5), part of which runs from Green Hill, Rhode Island to Conil, Spain; Transatlantic No. 6 (TAT-6), part of which runs from Green Hill, Rhode Island St. Hilaire-de-Riez, France; and Transatlantic No. 10 (TAT-10), part of which runs from Green Hill, Rhode Island Norden, Germany. The majority of these cables whether in service or not, run out of Green Hill, RI to the southeast and then south, passing between

3 and 9 nautical miles east of Block Island. The exceptions are TAT-12/13 and FLAG Atlantic 1, which run west of Block Island.

2. Historic cables, however, are less well understood than their modern counterparts, and under certain circumstances might be considered historic resources. They also present problems for the management of development projects. Of particular concern to marine planners in the Ocean SAMP region is the cable area off the southwest coast of Block Island, which runs across Blocks Island Sound to Montauk Point on the eastern end of Long Island. In an attempt to understand the origin of this area and its potential to house historic resources, University of Rhode Island researchers traced the cable laying history of Block Island Sound.

3. In 1880, Congress appropriated $15,000 for the US Army Signal Corps to lay the first telecommunications cable from Block Island to the mainland. The work was complete in 1884. Although justified for military communications and the transmittal of weather information, Rhode Islanders clearly saw this as a way to attract Federal dollars for communication infrastructure that would allow connections with the otherwise isolated communities on Block Island. At the time, safety-at-sea was also an immediate concern. Throughout the state's history, shipwrecks and loss of life-at-sea in the Ocean SAMP area had never been higher.

4. The two-conductor cable ran from Sandy Point at the north end at the Block Island to Narragansett Pier (Annual reports of the War Department, 1899; An Act to Authorize the Laying of a Telegraph Cable from the Main Land in Rhode Island to Block Island, 14 Jan. 1880). Within two years, however, the cable was unserviceable and Congress appropriated an additional $18,350 to replace it. Lawmakers specifically recognized the importance of the Block Island cable and the role it played in connecting signal stations with life-saving stations and lighthouses. (Statutes of the United States of America, 1885-1886). In March 1888, the cable was rendered unserviceable for a second time. This time a vessel (possibly the schooner *William Jordan*), that had become stranded some time earlier, broke apart in a springtime storm and severed the cable. By the turn of the century, the Signal Corps had repaired the cable, but now started to question its military utility and its value for transmitting weather information. The cable's utility, however, for general telegraph communication, life–saving, shipping, and commerce was still acknowledged. According the Chief Signal Officer of the Army in 1889, the Block Island line, and a similar cable connecting Nantucket with the mainland, were "probably the most valuable of all the sea-coast lines, giving ….service to about 75,000 people during the hot summer months, and at the same time sending valuable vessel reports." (Annual Report of the Chief Signal Officer of the Army, 1889). He went on to question, however, the military utility of the cables and hinted at a transfer of ownership and responsibility.

5. In 1902, the Block Island cable, was transferred to the Weather Bureau, under the Department of Agriculture, on condition that the Bureau maintain it and allow military use of it during war. By this time, the salt-water environment and marine organisms (particularly teredo) had once again taken their toll on the communication infrastructure. The cable had become so badly deteriorated that the Department of Agriculture requested

an appropriation of $40,000 for a complete replacement. This time guttapercha would be used instead of rubber. [Annual Reports of the Department of Agriculture, 1902; A Digest of Opinions of the Judge of the Advocates General of the Army, 1912]. The current cable corridors from the north end of Block Island to the mainland stem from these years.

6. During WWII, as German submarines threatened the Atlantic coast of the United States, the US military renewed its interest in signal stations and communication cables. As a result, the army and navy initiated an extensive cable laying operation, requiring governmental easements over private property on land and the designation of new cable corridors in Rhode Island Sound, Block Island Sound and Narragansett Bay. This cable infrastructure included cables that ran from Fort Greene (then near Point Judith) to Green Hill, and from there onto stations at Charlestown, Noyes Point and Watch Hill. It also included cables from Block Island to Fort Greene (near Point Judith) and Block Island to Montauk Point, Long Island. Block Island's southwest cable corridor originates from this time. Both the Block Island cables were de-accessioned between 1956 and 1957 (Submarine Cable Easements – Narragansett RI, 1957-1958, Record Group 269, GSA, 1922-1997; Submarine Cable Easements – Block Island, RI, 1956-1960, Record Group 121, Records of the Public Buildings Service, 1801-1976)

420.4 Paleo-Geographic Landscape Reconstruction

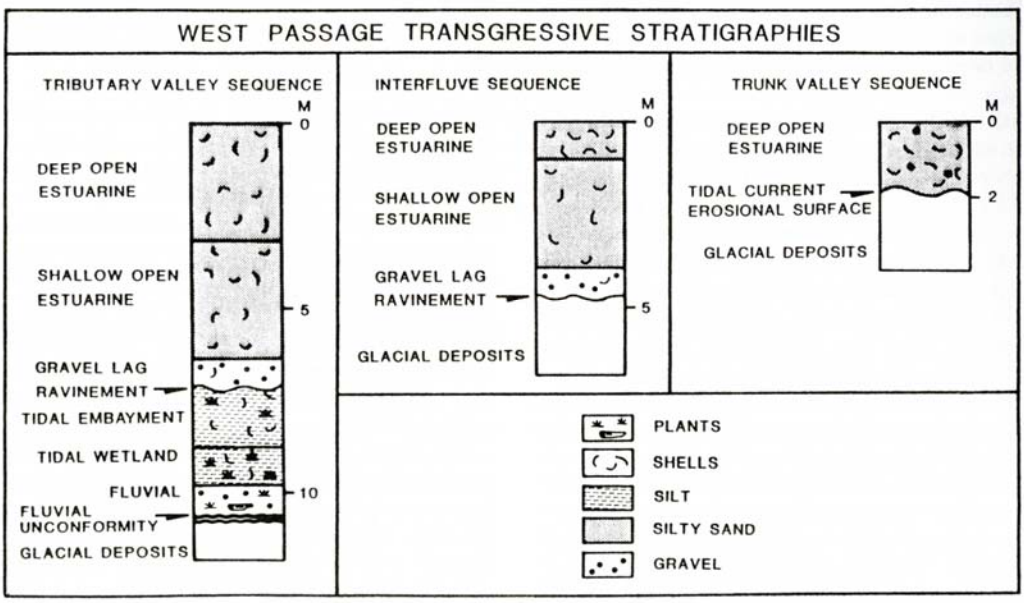
1. The strategy for doing cultural landscape reconstruction and surveying for inundated archaeological sites is fundamentally different from surveys to discover and characterize shipwrecks, because the landscape and any associated cultural sites are usually buried by continental shelf sediments. These shelf sediments have accumulated since the time of initial inundation of the landscape by global sea level rise caused by the progressive melting of continental ice sheets since the last glacial maximum. Because the time of initial inundation is a function of the original elevation of the site relative to rising sea level, the contact between the underlying sediments and the base of the shelf sediments is a time-transgressive surface. Therefore, lower elevation sites are inundated earlier than higher elevation sites.

2. The process of inundation by global sea level rise in Rhode Island and adjacent waters has been described by Oldale and O'Hara, 1980. The local stratigraphy that is produced by sea level rise has been described in detail by McMaster (1984) and Peck and McMaster (1991) and Boothroyd and August (2008).

3. The work of Peck and McMaster (1991) indicates that during inundation, a high energy surf zone environment, the shoreface, passes across the landscape, and material is actively eroded from the surface. An erosional surface covered by a later deposit of sand and gravel is indicative of the passage of the shoreface across the site. As indicated in Figure 4., the degree of erosion depends on the original topography of the site. Deep tributary valleys tend to have less erosion, whereas interfluves and trunk valleys have much more erosion. In studies of shoreline change of Rhode Island, Boothroyd indicates that preexisting sediment is removed to a depth of 1 meter below mean lower low water (MLLW) as the surf zone sweeps across the landscape (Boothroyd, personal

communication 2010). This means that approximately 1-2 meters of material is removed from tributary valley settings and significantly more from interfluves and trunk valleys. The present south shore of Rhode Island provides a representative view of erosional processes and results that active as the Sounds were flooded.

Figure 4. Illustration of West Passage Transgressive Stratigraphies. (Peck and McMaster, 1991)



4. Closed topographic depressions and fresh water wetland settings that are inundated quickly and to significant depths (5-10meters water depth depending on setting) will tend to preserve the original terrestrial landscape (David Robinson, personal communication). These settings have the highest potential for preservation of cultural landscapes and sites.

5. The erosional surface marks the altered original terrestrial surface after it has been worked by a high energy surf zone environment (Peck and McMaster, 1991), but any cultural sites and artifacts that are preserved will be found in conjunction with the immediate overlying layer of sediment. This stratum can usually be readily detected and traced within a study area by high-resolution subbottom sonar (Coleman and McBride, 2009).

6. The use of the sea level rise curve versus time (Figure 5.), the current bathymetry, and the depth of the erosion surface below the current bottom can be used to reconstruct the cultural landscape at various points in time. The landscape scenarios shown in Figures 6., 7., & 8. indicate various closed depressions that may have contained post-glacial lakes. The shorelines of these lakes are likely areas for preservation of cultural sites. Rapid flooding by marine water into these basins may have preserved these sites.

Figure 5. Graph of Eustatic Sea Level Rise Caused By Melting Glacier Ice

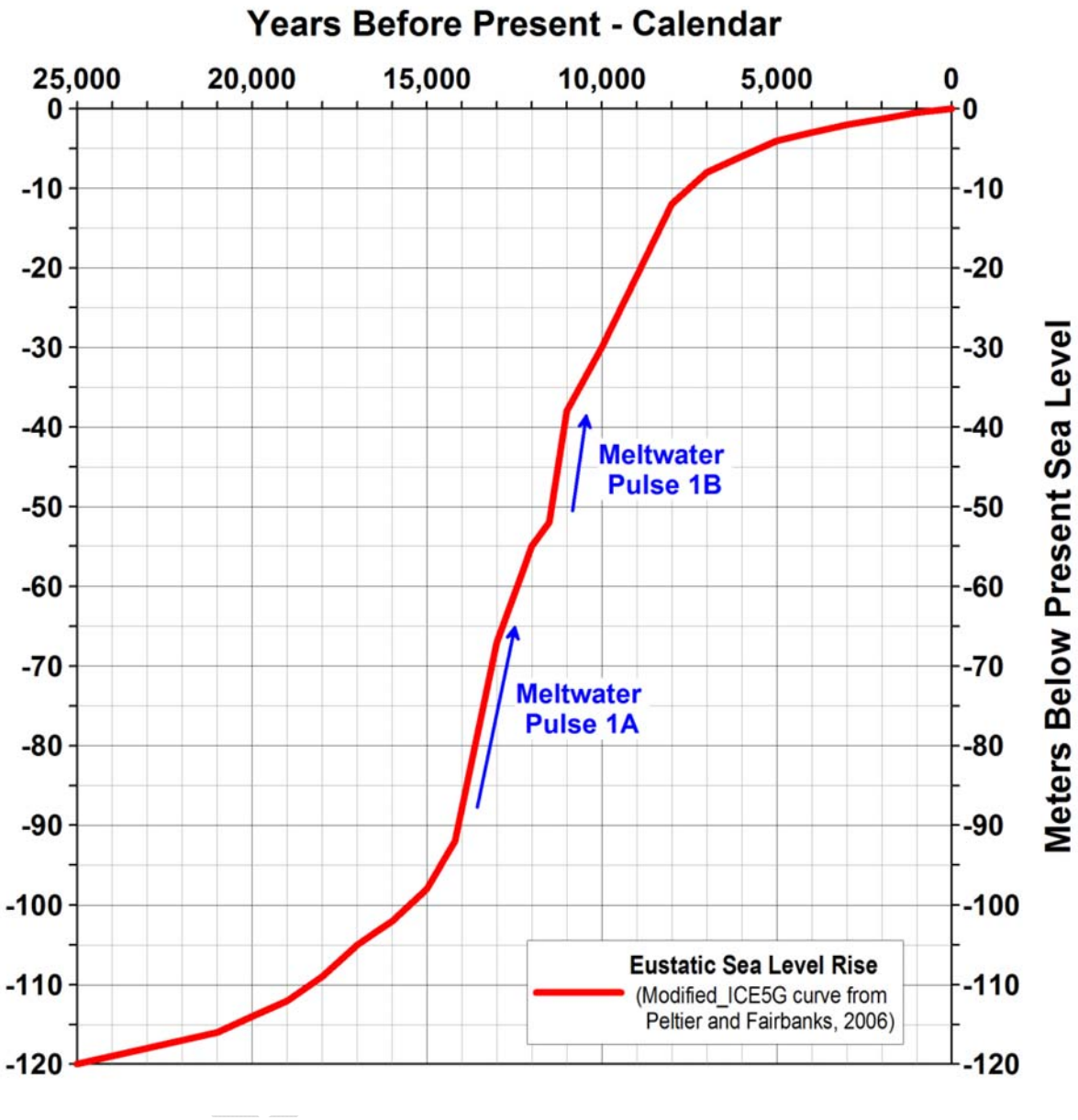


Figure 5. Eustatic sea-level rise caused by melting glacier ice as the world emerged from the last glaciation. Curve illustrates slow sea-level rise from 25 – 20 thousand years ago. And then more rapid rise as the climate warmed. Meltwater pulses indicate particularly rapid rise as large sections of continental ice sheets were released to the ocean (1A – Antarctic, 1B – Laurentide) (modified from Peltier and Fairbanks 2006).

Figure 6. Sea Level Rise of Ocean SAMP Area, 11,500 yBP

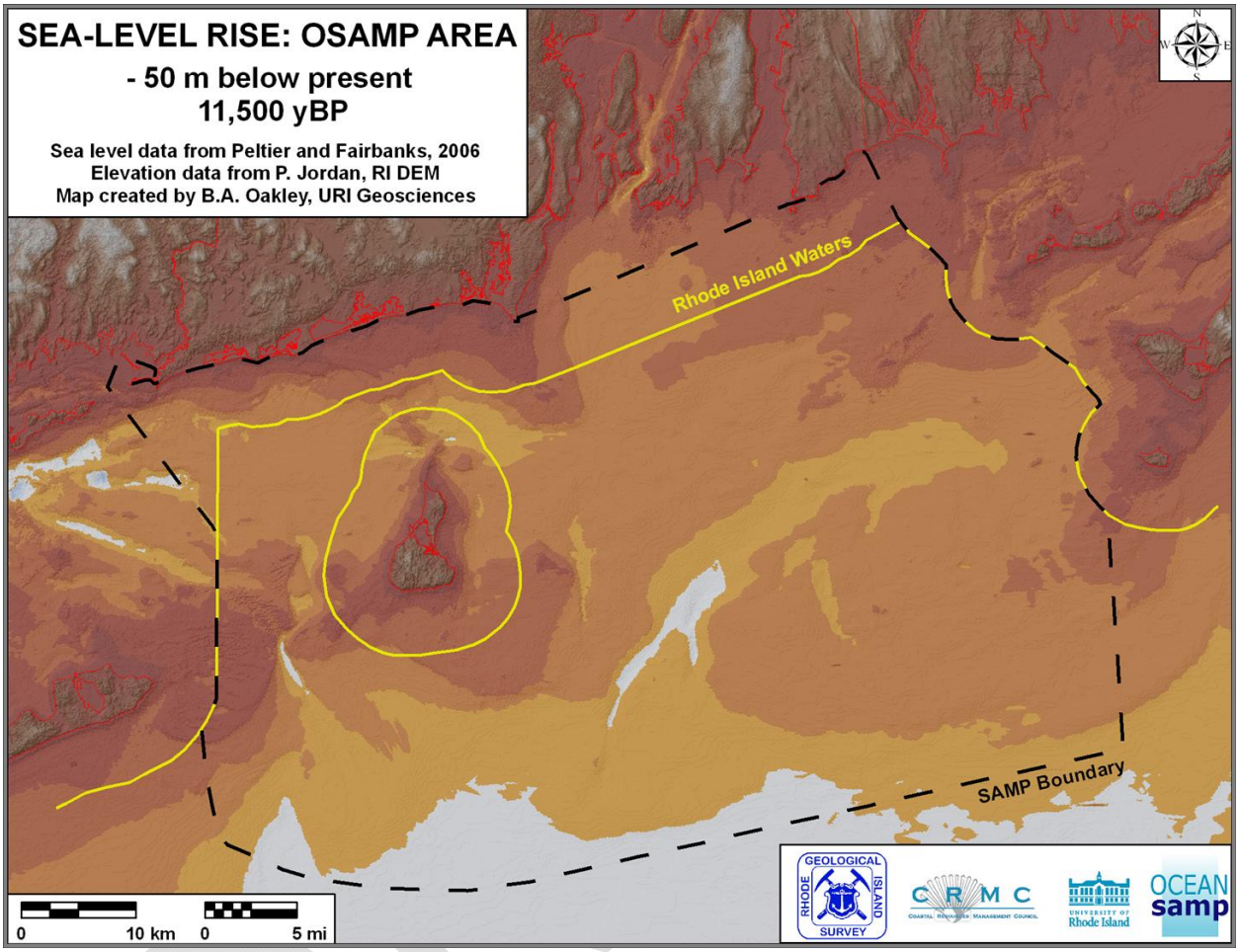


Figure 6. Figure SL -50m. Relative sea level was about 50 meters below present at 11,500 years before present (yBP). Brown colors represent dry land, blue represents water. Marine water is just impinging on the southern SAMP boundary. Other blue areas are possible lakes in closed depressions. The present-day shoreline is shown by the red lines.

Figure 7. Sea Level Rise of Ocean SAMP Area, 11,000 yBP

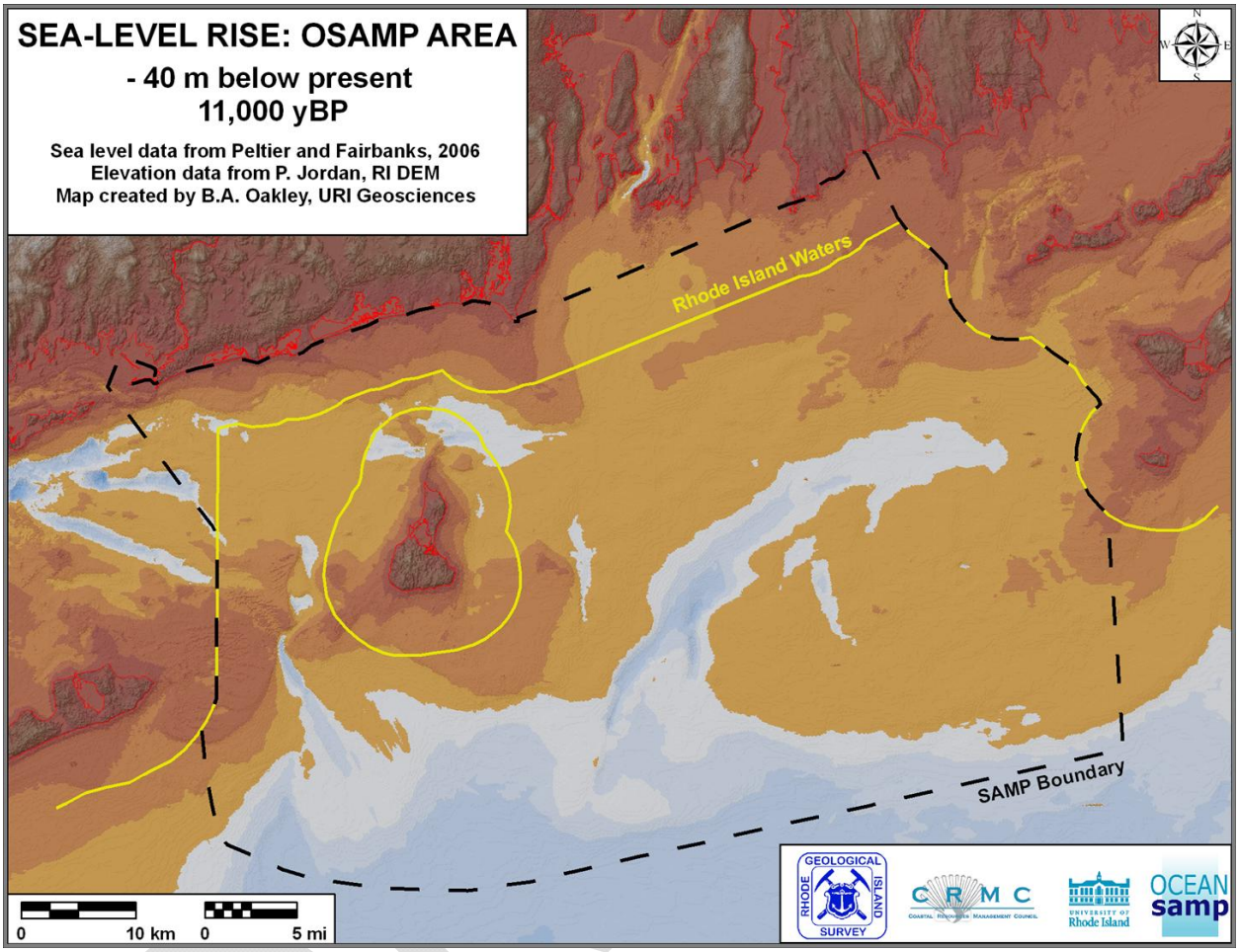


Figure 7. Figure SL - 40m. Relative sea level at -40 meters at 11,000 yBP. Marine water has advanced into central Rhode Island Sound. The lakes shown are in part a product of the map production; some of the lakes seen in this image may have existed at an earlier time.

Figure 8. Sea Level Rise of Ocean SAMP Area, 10,000 yBP

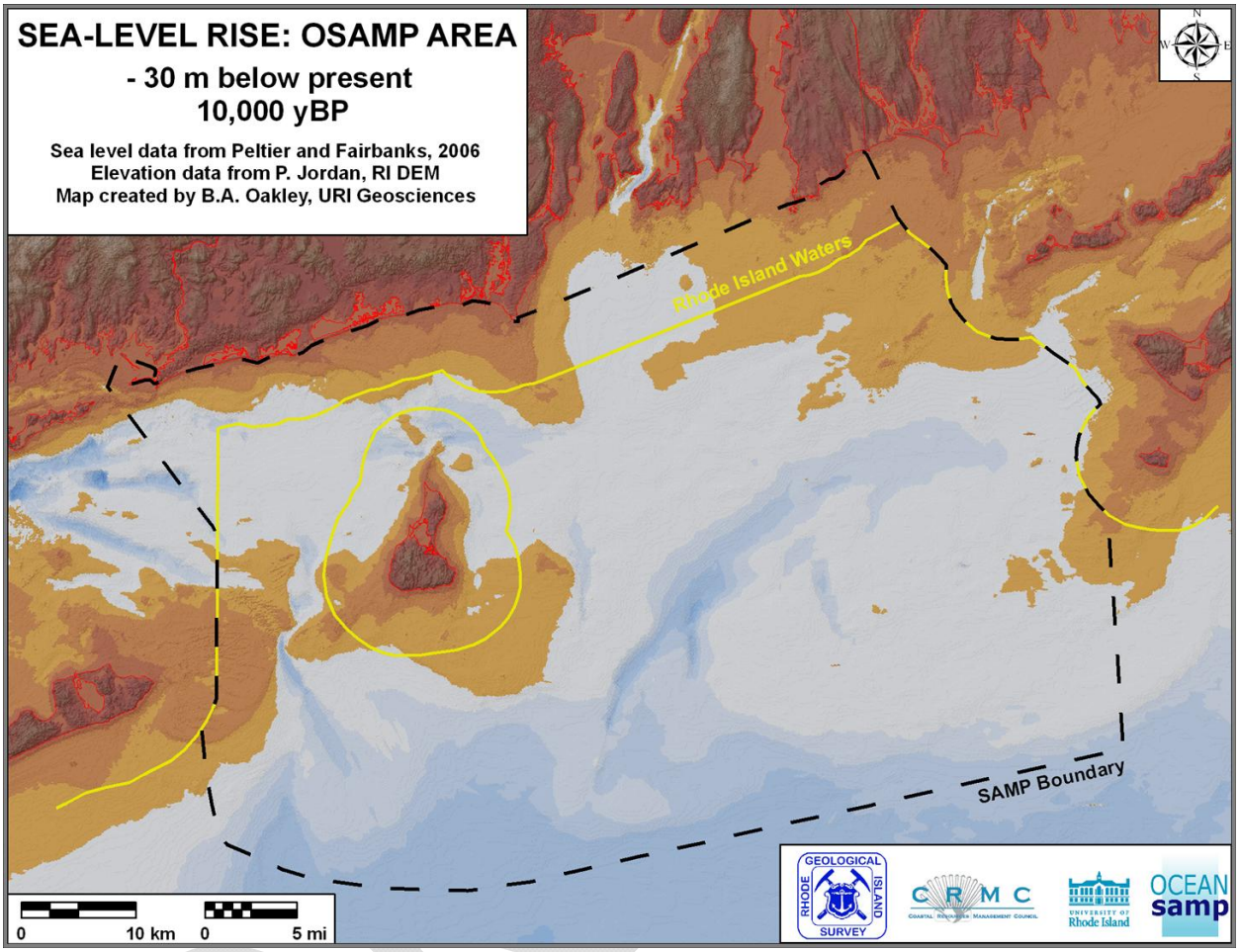


Figure 8. Figure SL - 30m. Relative sea level at -30m at 10,000 yBP. Marine water now occupies significant parts of both Rhode Island and Block Island Sounds and Block Island has become an island.

7. Knowledge of the depth of the erosion surface below the present sediment surface can be used to assess the possible impact of cable installation on cultural resources. For example, in cases where cables might be installed, if the depth of jet plowing is shallower than the erosion surface, then there will be negligible impact.

8. Borings are needed to assess the impact of installation of future developments on cultural resources.

Section 430: Onshore Historic Sites Adjacent to the Ocean SAMP Area

1. Approximately 1000 sites associated with Rhode Island's earliest history have been identified in the coastal zone. A number of these sites have contributed significant information to our knowledge of Rhode Island's past. Some have been listed on the National Register of Historic Places; others are included in National Register Archaeological Districts. Many archaeological sites in the coastal zone have been destroyed by development; others await discovery.

2. Rhode Island's ocean coastline has gone through several periods of change, but it has retained significant cultural resources from throughout its history. For some of these historic buildings and places that border the shore, the ocean is a fundamental aspect of their historic significance and for many others the coastal waters are an integral feature in their historic setting. A list of historic properties in the ocean coastal zone with a significant connection to the ocean follows. They include properties that are entered on the National Register of Historic Places or are candidates, potentially eligible for National Register listing. One property, Southeast Lighthouse on Block Island, is designated as National Historic Landmark.

3. The documentation of onshore land-based cultural and historic resources is important for the Ocean SAMP study area because offshore development proposals may present visual impacts to cultural and historic resources if the development is sited within the viewshed of onshore land-based sites designated as historically significant.

4. For onshore land-based sites, the overall perception of visual impacts of offshore developments is subjective and opinions vary about whether visual impacts for a given project are positive, negative, or neutral (Minerals Management Service 2007). Section 106 of the National Historic Preservation Act, however, requires that a given project's visual effect on historic resources be evaluated from National Historic Landmarks, properties listed or eligible for listing on the National Register of Historic Places, or Traditional Cultural Properties. (Minerals Management Service 2010)

5. For offshore development proposals, an Area of Potential Effect (APE) is defined to include visual impacts specifically related to onshore land-based National Historic Landmarks, properties listed or eligible for listing on the National Register of Historic Places, or Traditional Cultural Properties. (Minerals Management Service 2010)

6. The Criteria of Adverse Effect defined in Section 106 of the National Historic Preservation Act [36 CFR 800.5(a)(1)] states, "An adverse effect is found when an *undertaking may alter, directly or indirectly, any of the characteristics of a historic property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association."* Examples of adverse effects are listed as including, but not limited to, the following [36 CFR 800.5(a)(2)]: *"(v) Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features."*

430.1 Properties Listed on the National Register of Historic Places

1. The National Register of Historic Places is the federal government's official record of properties that have been evaluated for their significance in American history and determined to be worthy of preservation. Properties listed in the National Register include individual buildings / structures, historic districts, and archaeological sites. Rhode Island properties listed in the National Register include colonial houses, farms, Victorian neighborhoods, factory villages, diners, monuments, military bases, seacoast villages, suburban neighborhoods, etc. (RIHPHC 2010)

2. The Rhode Island Historical Preservation and Heritage Commission (RIHPHC) serves as the State Historic Preservation Office (SHPO) for Rhode Island. RIHPHC maintains records of listed and candidate properties in the state, along with survey publications for each of the Rhode Island's 39 towns, for specific neighborhoods, and for thematic projects.

3. There are 33 properties in 9 Rhode Island municipalities within or adjacent to the Ocean SAMP study area listed on the National Register of Historic Places.

4. Only one property within the study area, Block Island Southeast Light in the Town of New Shoreham, is designated as a National Historic Landmark (NHL). National Historic Landmarks are buildings, sites, districts, structures, and objects that have been determined by the Secretary of the Interior to be nationally significant in American history and culture. All National Historic Landmarks are included in the National Register of Historic Places (NPS 2010). Southeast Light was built in 1874, and the National Historic Landmark Study completed for Southeast Light lists the period of significance 1874-1929. The statement of significance defines Southeast Light as, "…outstanding as one of the finest lighthouses constructed by the U.S. Light House Board in the 19th century." (Reynolds 1997)

5. Table 4. lists historic properties identified by RIHPHC that are in the ocean coastal zone and listed on the National Register of Historic Places, or designated National Historic Landmarks (NHL).

Table 4. Selected Properties Listed on the National Register of Historic Places in the Ocean Coastal Zone, Little Compton to Westerly (RIHPHC, April 2010)

Town	Name of Property	Location	Date of Listing on NRHP
Charlestown	Fort Ninigret/The Niantic Fort	Fort Neck Road	4/28/1970
Charlestown	Babcock House	Quonochaontaug	1/1/1976
Jamestown	Beavertail Light	Beavertail Road	12/12/1977
Jamestown	Horsehead/Marbella	240 Highland Drive	6/16/1999
Jamestown	Fort Dumpling	Ocean Street	3/16/1972
Little Compton	Sakonnet Light Station	Little Cormorant Rock	5/10/1983
Little Compton	Stone House Inn	122 Sakonnet Point Road	4/2/2008

Town	Name of Property	Location	Date of Listing on NRHP
Middletown	St. George's School: Church of St. George, Little Chapel, & Memorial Schoolhouse	372 Purgatory Road	11/12/2004
Middletown	Smith-Gardiner-Norman Farm HD (Paradise Farm)	583 Third Beach Road	6/16/2008
Middletown	Clambake Club of Newport	353 Tuckerman Avenue	11/7/1995
Middletown	Lyman C. Josephs House	438 Walcott Avenue	5/2/1975
Narragansett	Ocean Road Historic District	Ocean Road, Hazard and Newton Avenues	8/18/1982
Narragansett	Dunmere	560 Ocean Road	9/23/2005
Narragansett	Point Judith Lighthouse	1470 Ocean Road	3/30/1988
Narragansett	Ocean Road Historic District	Ocean Road, Hazard and Newton Avenues	8/18/1982
New Shoreham	Hygeia House	Beach Avenue	10/22/2002
New Shoreham	U.S. Weather Bureau Station	Beach Avenue	8/4/1983
New Shoreham	Peleg Champlin House	Rodman Pond Lane	8/1/1982
New Shoreham	Block Island North Light	Sandy Point	5/23/1974
New Shoreham	Block Island South East Light (National Historic Landmark)	South East Light Road	8/6/1990; NHL: 9/25/1997
New Shoreham	Great Salt Pond Archaeological District		2/15/1990
New Shoreham	Old Harbor Historic District	All property within a 2,000-foot radius of the Village Square, at the intersection of Water, High, and Spring Streets	5/8/1974
Newport	Castle Hill Lighthouse	Castle Hill, off Ocean Ave., at the west end of Newport Neck	5/31/1972
Newport	Bellevue Avenue National Historic Landmark District (National Historic Landmark)	Both sides of Bellevue Avenue from Memorial Boulevard to the Atlantic Ocean at Land's End; bounded, generally, on the east by Easton Bay and on the west by properties on the west side of Bellevue Avenue	NHL: 5/11/1976
Newport	Ocean Drive National Historic Landmark District (National Historic Landmark)	Including all of Ocean Drive, from Almy Pond around and back to Wellington Ave. and Newport Harbor	NHL: 5/11/1976
South Kingstown	Theatre-by-the-Sea	Card's Ponds Road	7/10/1980
South Kingstown	Hale House	2625A Commodore Oliver Hazard Perry Highway	6/5/2007
South Kingstown	Willow Dell	2700 Commodore Oliver Hazard Perry Highway	11/21/1996
South Kingstown	Admiral Dewey Inn/ Dewey Cottage	668 Matunuck Beach Road	5/7/1992

Town	Name of Property	Location	Date of Listing on NRHP
South Kingstown	Browning's Beach Historic District	Card's Pond Road	9/5/1997
South Kingstown	Potter Pond Archaeological District		12/10/1987
Westerly	Weekapaug Inn	25 Spray Rock Road	1/25/2007
Westerly	Watch Hill Historic District	Bounded roughly by Breen, Watch Hill and East Hill Roads; Block Island sound; Little Narragansett Bay; and Pawcatuck River	9/5/1985

430.2 Selected National Register Candidate Properties

1. Table 5. lists candidate properties identified by the RIHPHC that are in the ocean coastal zone and considered to be eligible for nomination to the National Register of Historic Places.

Table 5. Selected National Register Candidate Properties in the Ocean Coastal Zone, Little Compton to Westerly (RIHPHC, April 2010)

Town	Name of Property	Location
Charlestown	Arnolda Historic District	
Jamestown	Fort Burnside	Beavertail Road
Jamestown	Fort Wetherill	Fort Wetherill Road
Jamestown	Harbor Entrance Control Post	Beavertail Point
Little Compton	Warren's Point Historic District	
Little Compton	West Main Road Historic District	
Little Compton	Goosewing/Tunipus Farm	Long Highway
Little Compton	Simmons-Manchester House	106 Sakonnet Point Road
Middletown	Paradise Road Historic District	
Middletown	Renfrew Cottages	Renfrew Park
Middletown	John C. Bancroft House	675 Tuckerman Avenue
Narragansett	Fort Nathanael Greene	Old Point Judith Road
Narragansett	US Coast Guard Station	Point Judith
New Shoreham	Block Island Historic Landscape District	
New Shoreham	US Coast Guard Station	Coast Guard Road (DOE)
New Shoreham	US Life-Saving Station	Cooneymus Road
New Shoreham	Vail Cottages	Mohegan Trail
New Shoreham	Mohegan Cottage/Bit O'Heaven	Snake Hole Road
South Kingstown	Windy Meadows, Weeden and Harbet Farms Agricultural District	Matunuck Schoolhouse Road

Town	Name of Property	Location
South Kingstown	Samuel Perry Farm	645 Matunuck Schoolhouse Road
South Kingstown	Henry Palmer House	Old Succotash Road
Westerly	Weekapaug Historic District	
Westerly	Misquamicut Golf Club	Ocean View Highway

430.3 Block Island Sites Eligible for the National Register

1. Block Island sits directly within the Ocean SAMP study area and has a number of historically significant onshore properties that are either listed on the National Register, or considered to be eligible for listing. The types of historic properties on Block Island have been categorized into: early houses; structures associated with Block Island's maritime history; farms; buildings associated with Block Island as a resort; and landscape. (RIHPHC 1991) Detailed inventory information on many properties considered to meet National Register eligibility criteria can be found in *Historic and Architectural Resources of Block Island, Rhode Island,* RIHPHC 1991.

2. Table 6. lists structures and sites from 1680 – 1948 on Block Island/Town of New Shoreham as identified by the Block Island Historical Society as either eligible for the National Register or contributing to the historic character of the island's scenic corridors, streetscapes or sense of place. (Compiled by Pamela L. Gasner for the Town of New Shoreham, 2008)

Table 6. Structures and Sites from 1680 – 1948 on Block Island/Town of New Shoreham considered eligible for the National Register or contribute to historic character of the Island (Compiled by Pamela L. Gasner for the Town of New Shoreham, 2008)

Plat	Lot	Sub-lot	Date built (deed)	Date built (tax assess-or's office)	Original owner and/or building name	Past/Present building name	Setting significance
17	9		1691	1694	Aaron W. Dodge	Myrtis Littlefield/ Tom and Esther Littlefield	Scenic corridor on Old Town Road
15	2	1	1700	1700	William B.S. Ball	Johnson's	Rural historic landscape; scenic corridor off Dories Cove Road

Plat	Lot	Sub-lot	Date built (deed)	Date built (tax assess-or's office)	Original owner and/or building name	Past/Present building name	Setting significance
3	103	1	1720	1720	Capt. Samuel Littlefield	Allen Littlefield(son); Karl Erickson; Alfred D. John; Spencer Farm; Littlefield Bee Farm	Scenic corridor off Corn Neck Road to Maze walking trails and Clayhead; rural historic landscape
2	26		1750	1790	Elias Littlefield/ John Hayes	Edward Hayes/ Miss Susan Morgan/Ellison Property	Scenic corridor on Corn Neck Road
3	142		1750	1790	Nathaniel Littlefield	Littlefield Farm/Jeremiah Littlefield (Jerry's Point) Edgar Littlefield/John Littlefield/ The Littlefield Homestead	Rural historic landscape; scenic corridor on Mansion Road; historic barn; property next door to Littlefield Farm
4	18		1760	1760	Thomas Mott	Mitchell Farm; Adrian's	Rural historic landscape; scenic corridor on Corn Neck Road; historic background buildings
14	11		1780	1780	Samuel Allen Sr.	Frank Allen	Scenic corridor on Dickens Farm Road off Cooneymus Road
15	13		1781	1700	Asa R. Ball	Goss Homestead	Scenic corridor off West Side Road
18	35		1781	1781	Charles C. Mitchell	"Breezy Hill;" Reg Conley's	Scenic corridor off Center Road
3	118		1790	1790	Silas Niles Littlefield	Abby Littlefield Home/Amazon Littlefield (Silas's Son and Capt. Of L.S.S. at Harbor) Nicholas Ball/ William O. Ball/Luella Ball	Rural historic landscape; scenic corridor on Mansion Road; historic background buildings

Plat	Lot	Sub-lot	Date built (deed)	Date built (tax assess-or's office)	Original owner and/or building name	Past/Present building name	Setting significance
2	19	1	1790	1790	Nicholas Littlefield Jr.	James Maxfield/ Jimmy Maxfield	Scenic corridor on Corn Neck Road
11	11		1797	1797	Sylvester Mitchell	Henry C. Sprague/ Wilbur and Virginia Mitchell	Scenic corridor on Mitchell Lane
15	64		1800	1800	Amos W. Mitchell	Jon Grant	Rural historic landscape; scenic corridor off Dories Cove Road
19	68		1800	1800	Abel Sprague	Adrian L. Sprague	Scenic corridor on West Side Road
13	1		1810	1810	Horatio W. Allen	"Red Shutters"/ Rev. Stanley and Winnie Pratt	Scenic corridor on West Side Road
19	39		1820	1812	Peleg C. Champlin	Weeden Champlin/ Susan Ball Dodge/ Mary Madison Miller/ Frederick Ritchie and Ethel Colt Ritchie/ Dr. Gerald F.Abbott	Rural historic landscape; scenic corridor on Rodman Pond Lane; listed on National Register
18	66		1825	1825	John Carr Dodge	Natalie Mitchell/ Gill W. and Ruth Y. Peabody	Scenic corridor off Beacon Hill connecting to greenway trails

Plat	Lot	Sub-lot	Date built (deed)	Date built (tax assess-or's office)	Original owner and/or building name	Past/Present building name	Setting significance
19	51	1	1827	1825	Edward Hull Champlin	Champlin Farm/Edward Peckham Champlin (1865 - 1942)/Robert Paine Champlin and Lillian Mae Chace Champlin/ Kathryn Champlin-Kernan	Rural historic landscape; scenic corridor on Coast Guard Road (Champlin Road)
15	78		1836	1830	John Mott	Otis Mott Farm/Otis V.P.Mott/Mrs. James F. Jackson(1950)	Scenic corridor on West Side Road/ historical significance
3	92		1840	1800	Capt. Hiram D. Ball	Hiram 'Ansel' Ball (son)/Mrs. Robert Barker/Louis Beauregard/ "Old Beauregard Homestead"	Scenic corridor off Corn Neck Road
8	103		1840	1840	Capt. Welcome Dodge Sr.		Scenic corridor off Amy Dodge Lane (New Haven House Road)
14	21		1840	1840	Jeremiah Allen		Scenic corridor off Dickens Farm Road
4	19	1	1840	1840	Joshua Chase Smith	Byron Littlefield	Rural historic landscape; scenic corridor off Corn Neck Road; rural laneway
8	222		1840	1840	John Ed Willis	Richard Heller	Scenic corridor on top of High Street
15	58	1	1845	1800	Samuel George Mitchell	Stanley Smith	Scenic corridor off West Side Road
4	53		1850	1850	Capt. Nathaniel L. Willis	Willis Homestead	Landmark farm; scenic corridor on Corn Neck Road

Plat	Lot	Sub-lot	Date built (deed)	Date built (tax assess-or's office)	Original owner and/or building name	Past/Present building name	Setting significance
6	18		1850	1850	Almanza Littlefield Farm	Oscar Willis House/ Wagenseil	Scenic corridor on Old Town Road; historical significance
8	19		1850	1850	Freeman M. Millikin		Scenic corridor on Mohegan Trail; rural laneway with open field and stonewalls
8	212		1850	1850	Capt. Arnold R. Millikin	Ambrose Rose/Anne Reed/ "Rosecrest"	Scenic corridor on Pilot Hill Road
16	25	1	1850	1850	Silas Niles Littlefield, 2nd	William T. Martin	Rural historic landscape; scenic corridor off West Side Road and Old Mill Road
16	71		1850	1850	Parsonage for West Side Church	duPont Family	Rural historic landscape; scenic corridor off Beacon Hill Road
8	137		1850	1850	Caleb W. Dodge Jr.	David Dudley and Warren Doolittle III	
15	74		1850	1965	William Allen		Scenic corridor off Dunn Town Road
15	33		1852	1790	Caleb Littlefield Rose	Tormut Rose Farm	Scenic corridor on Dories Cove Road
2	31		1852	1860	Benjamin Littlefield	Mr. Douglas, artist; Henry Oehrle of Newport; Bella Littlefield's; Albert and Bella Littlefield Gardiner(grand niece of Benjamin)/Dr. Gerald Abbott and Tom Abbott/Barn: WWII Bunker	Scenic corridor on Corn Neck Road adjacent to Hodge Property walking trails; rural historic landscape; WW II lookout bunker in converted barn; view of North Light; historic background buildings and stonewalls
16	73		1855	1855	Nathaniel Latham	Stephen duPont	Scenic corridor off Beacon Hill Road; rural historic landscape

Plat	Lot	Sub-lot	Date built (deed)	Date built (tax assess-or's office)	Original owner and/or building name	Past/Present building name	Setting significance
8	66		1860	1860	Charles H. Hall	John Steffian	Scenic corridor on Mohegan Trail
12	11		1860	1880	John P. Champlin		Scenic corridor
6	46		1867	1867	Lorenzo Dodge	Fair View Cottage/ Bob Rice	Scenic corridor on Old Town Road intersection and Conn. Avenue
10	17		1870	1920	School # 3	Gully School/ George Enos	Scenic corridor on Payne Road
5	81		1877	1854	"Centre" School #2	Private home after 1933	Scenic corridor on Center Road; historical significance
10	23	2	1877	1876	Edward S. Payne	Payne Farm/ Payne Farm Homestead	Scenic corridor off Payne Road
2	10		1879	1878	Samuel Hayes	"Hayes Cottage"/ Gordon and Frankie Smith	Scenic corridor off Corn Neck Road
18	24	2	1880	1850	James A. Dodge	Dodge Homestead; Erlanger's; Transue's	Scenic corridor on Beacon Hill; rural historic landscape
9	101		1880	1872	Lovice R. Conley		Scenic corridor on Pilot Hill Road
8	108		1880	1880	Amos D. Mitchell	Napolean B. Mitchell; Nicholas Rotz; Jay and Caral Edelberg	Scenic corridor on Amy Dodge Lane
8	130		1880	1880	unknown	Clarence McClarren/ Ernie Howarth/ John Handy	Scenic corridor on Spring Street
8	86		1880	1895	Spring Cottage	Venetia and John Rountree (Spring House Cottage)	Scenic corridor on Spring Street
4	21	1	1882	1850	Ezra C. Smith	Milton Carrow	Rural historic landscape; scenic corridor off Corn Neck Road; rural laneway

Plat	Lot	Sub-lot	Date built (deed)	Date built (tax assess-or's office)	Original owner and/or building name	Past/Present building name	Setting significance
9	106		1882	1891	Gurdon A. Millikin	"Pilot Hill House"(Boarding House)/ Fred Benson's Home/Millikin Family Homestead	Scenic corridor on Pilot Hill Road
15	116		1883	1850	Capt. John B. Dunn	Leona Carney	Scenic corridor off Graces Cove Road; rural historic landscape; rural laneway
18	58		1883	1860	Ray Sands Littlefield	Central House Annex	Scenic corridor on Center Road
9	44		1884	1870	William Smith Sprague	"Spokes" Spragues/ Mable Dawley	Scenic corridor on Lakeside Drive
17	17		1884	1870	Amos D. Mitchell and Annie R. Mitchell	Chas.J. Dodge; Browning/ Sands Littlefield/ Foy and Bea Stiefer/ Peter and Cheryl Blane	Scenic corridor on Old Town Road
8	205	2	1884	1886	James E. Mitchell	Armenie and Ray T. Mitchell; Haida Ginsburgh	Scenic corridor on Seaweed Lane off Pilot Hill Road
3	104	1	1884	1894	Capt. Benjamin F. Gardner	Mid Holloway	Scenic corridor on Corn Neck Road at the entrance to the Maze
17	16		1885	1800	John 'Frank' Hayes		Scenic corridor on Old Town Road
9	52		1885	1870	Miss Abby E. Vaill	1 of 2 Vaill cottages	
8	95		1885	1876	Enoch Rose	Linus Dodge	Scenic corridor off Spring Street
5	79		1885	1885	William Pitt Ball	Holiday Haven	Scenic corridor on Center Road
10	21	1	1886	1880	John R. Payne	(part of) Payne Farm; Frank C. Payne; Herb Fisher's	Rural historic landscape off Payne Road; house in original state

Plat	Lot	Sub-lot	Date built (deed)	Date built (tax assess-or's office)	Original owner and/or building name	Past/Present building name	Setting significance
14	53		1886	1886	Samuel B. Dickens, 2nd	Emily Reeve's cottage	Scenic corridor off Cooneymus Road
11	32	2	1886	1887	Everett D. Barlow	Mohegan Cottage/Bit O' Heaven; Judge McCabes	Scenic corridor on Black Rock Road
17	31		1887	1887	Anderson C. Rose	Lydia A.S. and Curtis H. Sprague/ Erastus and Mary Ida Sprague/ Meyers Family	Scenic corridor on Beach Ave.
5	60		1887	1900	George W. Willis		Scenic corridor off Corn Neck Road on Indian Head Neck
8	199		1888	1860	Horatio N. Milliken	"Millikin Cottage"/ Kikuchi	Scenic corridor on Pilot Hill
3	127		1888		Edward Searles	Searles Mansion foundation	Scenic corridor on Mansion Road
3	128		1888		Edward Searles	Searles Mansion foundation	Scenic corridor on Mansion Road
16	56		1889	1840	John A. Mitchell	Cirlor Sprague/ Vera Littlefield Sprague	Scenic corridor on West Side Road
8	207		1889	1880	William Pitt Dodge	Betty B. Dodge	Scenic corridor on Seaweed Lane
2	46		1889	1888	Capt. Amazon Niles Littlefield	Capt. Oswald A. Littlefield; Littlefield Bee Farm	Scenic corridor on Corn Neck Road
3	93	1	1889	1889	Hiram 'Ansel' Ball	Ansel Ball's/ Cottage Farm	Scenic corridor on Corn Neck Road
4	70		1889	1889	David Van Nostrand	"Innisfail"/Dr. Norman Boas	Scenic corridor on Corn Neck Road
8	52		1890	1890	Capt. Potter Carriage House		Scenic corridor on Southeast Extension

Plat	Lot	Sub-lot	Date built (deed)	Date built (tax assess-or's office)	Original owner and/or building name	Past/Present building name	Setting significance
8	125		1891	1910	Halsey Littlefield Jr.		
15	76		1892	1898	William Crook Allen	"Sunset View Lodge"	Scenic corridor off Dunn Town Road
15	5		1892	1900	Capt. Martin L. Rose	Grace Wheeler's	Scenic corridor off West Side Road
11	48		1892	1901	Oliver D. Sprague	Ezra and Mary Rose/Johnston/ Comstock	Scenic corridor on Lakeside Drove
13	35	6	1892	1903	Jesse D. Lewis	Lewis Farm Farmhouse	Rural historic landscape at Lewis Farm
11	50		1892	1908	Thomas K.Warner		
15	99		1893	1880	Thaddeus P. Dunn	Giles P. Dunn, Sr. (son) and Ada Mitchell/ Dewey cottage	Rural historic landscape; scenic corridor on Dunn Town Road
4	72		1893	1892	Charles F. Fairfield	"Lake Side"/ David M. Poole	Scenic corridor off Corn Neck Road
4	74		1895	1895	Simon R. Ball Jr.	Gertrude Ball	Scenic corridor off Corn Neck Road Neck
4	74		1895	1895	Simon R. Ball Jr.	Gertrude Ball	Scenic corridor off Corn Neck Road
15	27		1895	1900	H.W.Dickins	Latham Farm/ Knapp Family	Scenic corridor off West Side Road
4	48		1897	1860	Everett A. Willis	"The Bayside"	Scenic corridor on Corn Neck Road; house currently behind large privet hedge
7	95		1897	1896	Mrs. Sarah L. Tourjee	Tourjee Cottage/ Scott Rutan	Scenic corridor on High Street
4	48		1897	1900	Everett A. Willis	Bayside or Little Red House?	Scenic corridor on Corn Neck Road
9	50		1898	1875	Hon. Julius Deming Perkins	"Bayberry Lodge"	

Plat	Lot	Sub-lot	Date built (deed)	Date built (tax assess-or's office)	Original owner and/or building name	Past/Present building name	Setting significance
2	31		1900	1900	WWII Bunker 1940's converted Barn/cottage	Bella Littlefield Gardner/ Abbott Family	Scenic corridor off Corn Neck Road
10	54	1	1900	1900	unknown	Rosie LaRue	
8	48		1901	1900	Capt. Mark L. Potter	"Pine Lodge"/Potter Place/Potter Mansion	Scenic corridor on Southeast Extension
5	59		1904	1904	L.V. Maltby	Maltby Cottage/ "Ninicroft Lodge"/ Brownlee/ Sullivan House	Rural historic landscape on Indian Head Neck; scenic corridor off Corn Neck Road (old Cemetery Street)
15	44		1904	1940	Horace W. Dickens	"West Side View Cottage"/ Miss Kiley's	Scenic corridor off Dories Cove Road
6	42		1905	1900	Irving M. Ball		Scenic corridor on Conn. Avenue
6	41		1906	1890	Morris L. Negus	Negus Cottage/Martha Bodington/ C. Scott/ "Beachcomber"	Scenic corridor on Conn. Ave.
18	61		1907	1907	Primitive Methodist Church		Scenic corridor on Center Road
15	21		1907	1910	James E. Sprague II		Scenic corridor on West Side Road
18	52		1908	1850	Fenner Ball	"Parsonage" (1921)/ Primitive Methodist	Scenic corridor off Center Road
6	49		1908	1908	Elgin Roberts		Scenic corridor on Old Town Road
18	60		1913	1875	John Ernest Littlfield	Omar Littlfield's	Scenic corridor on Center Road
2	36		1917	1911	Eugene Littlefield Rose	Gene and Lenice Rose	Scenic corridor on Corn Neck Road

Plat	Lot	Sub-lot	Date built (deed)	Date built (tax assess-or's office)	Original owner and/or building name	Past/Present building name	Setting significance
4	55		1920	1920	Crawford cottage	little white cottage moved from Calico Hill in Town	Landmark cottage on Corn Neck Road
4	70		1920	1920	Innisfail cottage	converted summer kitchen	Landmark cottage on Corn Neck Road
12	14		1920	1920	Preston Dunn	Black Rock cottage	Scenic corridor on Black Rock Road
15	106		1920	1920	Boarding House on Swede Hill		Scenic corridor on Graces Cove Road
18	18		1920	1920	WW II Lookout Tower on Beacon Hill	Brown Family	Scenic corridor on Beacon Hill Road
4	74		1922	1922	Simon R. Ball Jr.	Gertrude Ball	Scenic corridor on Indian Head Neck off Corn Neck Road
18	18		1928	1920	Thomas T. Doggett	Beacon Hill Tower/ "Mariner's Monument"	Scenic corridor on Beacon Hill Road
20	17		1932	1932	Hippocampus	Boy's camp/ Beane Family	Rural historic landscape at Beane Point
20	10		1935	1940	U.S.Coast Guard Brick House		Scenic corridor at end of Coast Guard Road
9	87		1940	1930	WWII Lookout Tower at Sands Pond	Turtle Hill	Scenic corridor off Sands Pond Road on Turtle Hill
5	75	1	1940	1940	Red Gate Farm outbuilding	2 outbuildings	Scenic corridor off Center Road
6	41		1940	1940	Negus Cottage outbuilding	laundry building	Scenic corridor on Conn. Avenue
18	60		1942	1942	Omar Littlefield cottage	John E. Littlfield Homestead site/Omar's	Scenic corridor on Center Road

Plat	Lot	Sub-lot	Date built (deed)	Date built (tax assess-or's office)	Original owner and/or building name	Past/Present building name	Setting significance
15	52		1943	1943	John Rose cottage		Scenic corridor on Dories Cove Road; rural historic landscape
8	23		1945	1945	WWII Lookout	round white tower adjacent to cottage on SE side	Scenic corridor off Spring Street

Section 440: Cultural and Historic Resource Policies

1. The Coastal Resources Management Council ("Council") has a federal obligation as part of its responsibilities under the Federal Coastal Zone Management Act to recognize the importance of cultural, historic, and tribal resources within the state's coastal zone, including Rhode Island state waters. It has a similar responsibility under the Rhode Island Historic Preservation Act. The Council will not permit activities that will significantly impact the state's cultural, historic and tribal resources.

2. The Council will engage federal and state agencies, and the Narragansett Indian Tribe's Tribal Historic Preservation Office (THPO), when evaluating the impacts of proposed development on cultural and historic resources. The Rhode Island Historic Preservation and Heritage Commission (RIHPHC) is the State Historic Preservation Office (SHPO) for the state of Rhode Island, and is charged with developing historical property surveys for Rhode Island municipalities, reviewing projects that may impact cultural and historic resources, and regulating archaeological assessments on land and in state waters.

3. Project reviews will follow the policies outlined in "Section 220: Areas of Historic and Archaeological Significance" and in "Section 330: Guidelines for the Protection and Enhancement of the Scenic Value of the Coastal Region" of the State of Rhode Island Coastal Resources Management Program, As Amended ("Red Book"). The standards for the identification of cultural resources and the assessment of potential effects on cultural resources will be in accordance with the National Historic Preservation Act Section 106 regulations, 36 CFR Part 800, *Protection of Historic Properties*.

4. Historic shipwrecks, archeological or historical sites located within Rhode Island's coastal zone are Areas of Particular Concern (APCs) for the Rhode Island coastal management program. Direct and indirect impacts to these resources must be avoided to the greatest extent possible. Other areas, not noted as APCs, may also have significant archeological sites that could be identified through the permit process. For example, the area at the south end of Block Island waters within the 30 foot depth contour is known to have significant archeological resources. As a result, projects conducted in the Ocean SAMP area may have impacts to Rhode Island's underwater archaeological and historic resources.

5. Archaeological surveys shall be required as part of the permitting process for projects which may pose a threat to Rhode Island's archaeological and historic resources. During the filing phase for state assent, projects needing archaeological surveys will be identified through the joint review process The survey requirements will be coordinated with the SHPO and, if tribal resources are involved, with the Narragansett THPO.

6. APCs may require a buffer or setback distance to ensure that development projects avoid or minimize impacts to known or potential historic or archaeological sites.The buffer or setback distance during the permitting process will be determined by the SHPO and if tribal resources are involved, the Narragansett THPO.

7. Based upon recommendations from RIHPHC, the Council reserves the right to establish protected areas around shipwrecks or other submerged cultural resources for which an official Determination of Eligibility for listing on the National Register of Historic Places has been made.

8. Projects conducted in the Ocean SAMP area may have impacts that could potentially affect onshore archaeological, historic, or cultural resources. Archaeological and historical surveys may be required of projects which are reviewed by the joint agency review process. During the filing phase for state assent, projects needing such surveys will be identified and the survey requirement will be coordinated with the SHPO and if tribal resources are involved, with the Narragansett THPO.

9. Guidelines for onshore archaeological assessments in the Ocean SAMP Area can be obtained through the RIHPHC in their document, "Performance Standards and Guidelines for Archaeological Projects: Standards for Archaeological Survey" (RIHPHC 2007), or the lead federal agency responsible for reviewing the proposed development.

440.1 Marine Archaeology Assessment Standards

1. The potential impacts of a proposed project on cultural and historic resources will be evaluated in accordance with the National Historic Preservation Act and Antiquities Act, and the Rhode Island Historical Preservation Act and Antiquities Act as applicable. Depending on the project and the lead federal agency, the projects that may impact marine historical or archaeological resources identified through the joint agency review process shall require a Marine Archaeology Assessment that documents actual or potential impacts the completed project will have on submerged cultural and historic resources.

2. Guidelines for Marine Archaeology Assessment in the Ocean SAMP Area can be obtained through the RIHPHC in their document, "Performance Standards and Guidelines for Archaeological Projects: Standards for Archaeological Survey" (RIHPHC 2007), or the lead federal agency responsible for reviewing the proposed development.

440.2 Visual Impact Assessment Standards

1. The potential non-physical impacts of a proposed project on cultural and historic resources shall be evaluated in accordance with 36 CFR 800.5, *Assessment of Adverse Effects, (v) Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features.* Depending on the project and the lead federal agency, the Ocean SAMP Interagency Working Group may require that a project undergo a Visual Impact Assessment that evaluates the visual impact a completed project will have on onshore cultural and historic resources.

2. A Visual Impact Assessment may require the development of detailed visual simulations illustrating the completed project's visual relationship to onshore properties that are designated National Historic Landmarks, listed on the National Register of Historic Places, or determined to be eligible for listing on the National Register of Historic Places.

Assessment of impacts to specific views from selected properties of interest may be required by relevant state and federal agencies to properly evaluate the impacts and determination of adverse effect of the project on onshore cultural or historical resources.

3. A Visual Impact Assessment may require description and images illustrating the potential impacts of the proposed project.

4. Guidelines for Landscape and Visual Impact Assessment in the Ocean SAMP Area can be obtained through the lead federal agency responsible for reviewing the proposed development.

Section 450: Literature Cited

A Digest of Opinions of the Judge Advocates General of the Army, 1912. 1917. Washington: Government Printing Office.

Abbass, D. K. 2000. Naval History and the Submerged Cultural Resources of Rhode Island, Volume I. Newport, RI: Rhode Island Marine Archaeology Project.

Albion, R. G., Labaree, B. W. and Baker, W. A. 1970. *New England and the Sea*. Mystic, CT: Mystic Seaport Press.

Annual Reports of the War Department for the Fiscal Year Ended June 30, 1899. 1899. Washington: Government Printing Office.

Annual Report of the Auditor of the Railroad Accounts made to the Secretary of the Interior for the Year Ending June 30, 1880. 1880. Washington: Government Printing Office.

Annual Report of the Chief Signal Officer of the Army to the Secretary of War for the Year 1888. 1889. Washington: Government Printing Office.

Annual Reports of the Department of Agriculture for the Fiscal Year Ended June 30, 1902. 1902. Washington: Government Printing Office.

Atlantic Deeper Waterways Association. 1908. *First Annual Convention Held at Baltimore November 17, 18, 19 1908: Report of the Proceedings*. Philadelphia: Atlantic Deeper Waterways Commission.

Bartlett, John Russell, 1858. *Records of the Colony of Rhode Island and Providence Plantations in New England.* Providence: Knowles, Anthony & Co.

Boothroyd, J. and P. August. 2008. [need reference info]

Bridenbaugh, Carl. *Fat Mutton and Liberty of Conscience, Society in Rhode Island, 1636-1690.* Providence, RI: Brown University Press.

Carroll, Charles. 1932. *Rhode Island: Three Centuries of Democracy.* New York: Lewis Historical Publishing Company, Inc.

Coleman, D. F., and K. McBride, 2009. Underwater Prehistoric Archaeological Potential on the southern New England Continental shelf off Block Island. IN Ballard, R. D., ed., *Archaeological Oceanography*. Princeton University Press. pp. 200-223.

Coleman, D. F., 2003. *Archaeological Ocenaography of Inundated Coastal Prehistoric Sites*. PhD Dissertation, Graduate School of Oceanography, University of Rhode Island, Narragansett, Rhode Island, U.S.A.

Coleman, Peter J. 1963. *The Transformation of Rhode Island 1790 – 1860*. Providence: Brown University Press.

Cooper, David J. and John O. Jensen. 1995. *Davidson's Goliaths: Underwater Archaeological Investigations of the Steamer Frank O'Connor and the Schooner-Barge Pretoria*. Madison: State Historical Society of Wisconsin.

Cronon, William. 1983. *Changes in the Land: Indians, Colonists and the Ecology of New England*. Hill and Wang.

DeAlteris, J.T.; Gibson, M.; Skrobe, L.G. 2000. Fisheries of Rhode Island (Working Draft). Narragansett Bay Summit 2000: White Paper.

Fagan, Brian. 2006. *Fish on Friday: Feasting, Fasting and the Discovery of the New World*. New York: Basic Books.

Fowler, William M. 1976. *Rebels Under Sail: The American Navy during the Revolution*. New York: Charles Scribner's Sons.

Gasner, Pamela. 2008. "Structures and Sites from 1680 – 1948 on Block Island/Town of New Shoreham" Block Island Historical Society.

Goode, G. Brown. 1884. *The Fisheries and Fishing Instustries of the United States, Section II*. Washington, DC: Government Printing Office.

Gordon, Richard L. 1978. *Coal in the U.S. Energy Market: History and Prospects*. Lexington: D.C. Heath.

Graaebner, William. 1974. "Great Expectations: The Search for Order in Bituminous Coal. 1890 – 1917. " *The Business History Review*. Vol. 48. No. 1.

Hale, Stuart O. 1998 (updated ed.). *Narragansett Bay: A Friend's Perspective.* University of Rhode Island Marine Advisory Service NOAA/Sea Grant Marine Bulletin 42.

Harbors of Refuge at Point Judith, Block Island, and Great Salt Pond, etc. 1903. 55th Cong. 2nd Sess. H. Doc 60.

Hearings before the Committee on Expenditures in the Department of Agriculture, House of Representatives. 1907. Washington: Government Printing Office.

Hearings before the Committee on Interstate Commerce of the House of Representatives. 1908. Washington: Government Printing Office.

Hawes, Alexander Boyd. 1999. *Off Soundings: Aspects of the Maritime History of Rhode Island*. Chevy Chase, MD: Posterity Press.

Herndon, R.H. and Sekatau, E.W. *The Right to a name: The Narragansett people and Rhode Island officials in the revolutionary era.* Ethnohistory, 44(3), 433-462.

Herndon, R.H. and Sekatau, E.W. (2003). *Colonizing the children: Indian youngsters in servitude in early Rhode Island.* In C. Calloway & N. Salisbury (Eds.), Reinterpreting New England Indians and the colonial experience (137-173). Boston: University of Virginia Press.

Herndon, R.H. and Sekatau, E.W. (2003) *Pauper Apprenticeship in Narragansett Country: A different name for slavery in early New England.* In Benes, P (Ed.), The Dublin Seminar for New England Folklife Annual Proceedings 2003: Slavery/antislavery in New England. Boston: Boston University Press.

Hunter, Louis C. 1979. *A History of Industrial Power in America*. Volume One: Water Power in the Century of the Steam Engine. Charlottesville: University of Virginia Press.

Hunter, Louis C. 1985. *A History of Industrial Power in America. Volume Two: Steam Power*. Charlottesville: University of Virginia Press.

Hall-Arber M, Dyer C, Poggie J, McNally J, Gagne R. 2001. New England's Fishing Communities. Cambridge (MA): MIT Sea Grant 01-15. Available from: http://seagrant.mit.edu/cmss/

Jones, Daniel P. *The Economic and Social Transformation of Rural Rhode Island, 1780-1850*. Boston MA: Northeastern University Press.

Keatts, Henry and George Farr. 2002. *The Bell Tolls: Shipwrecks and Lighthouses, Volume 1, Block Island.* Laurel, NY: Main Road Books.

Kellner, G. H. and Lemons, J. S. 2004. *Rhode Island The Ocean State: An Illustrated History*. Sun Valley, CA: American Historical Press.

Labaree, B. W., Fowler, W. M. Jr., Sloan, E. W., Hattendorf, J. B., Safford, J. J., and German, A. W. 1998. *America and the Sea: A Maritime History*. Mystic, CT: Mystic Seaport Press.

Livermore, Samuel. 1877. *A History of Block Island from its Discovery, in 1514 to the Present Time, 1876.* Hartford, CT: Case, Lockwood & Brainard.

Marx, Deborah and Mathew Lawrence. 2006. "Nomination of Frank A. Palmer and Louise B. Crary – Shipwreck Remains to the National Register of Historic Places."

McLoughlin, William G. *Rhode Island, A History*. New York, NY: W. W. Norton & Co.

McMaster, R. L., 1984. Holocene stratigraphy and depostional history of the Narragansett Bay System, Rode Island, U.S.A. *Sedimentology*, 31, pp. 777 - 792.

Mendum, Samuel W. 1897. *New England Magazine*, 16, pp. 738–751

Minerals Management Service. October 2007. *Final Programmatic Environmental Impact Statement for Alternative Energy Development and Production and Alternate Use Facilities on the Outer Continental Shelf*. Online at http://ocsenergy.anl.gov/documents/fpeis/index.cfm.

Minerals Management Service. 2010. Documentation of Section 106. Finding of Adverse Effect for the Cape Wind Energy Project (Revised). Prepared by B.M. Carrier Jones, editor, Ecosystem Management & Associates, Inc. Lusby, Maryland.

Monthly Summary of Commerce and Finance of the United States for the Fiscal Year 1903. 57th Cong. 2nd Sess. H. Doc. 15 parts 7, 8 & 9.

National Park Service. 2010. Web site, "National Historic Landmarks Program." http://www.nps.gov/history/nhl/QA.htm#1

Ocean SAMP Chapter 7. "Marine Transportation, Navigation, and Infrastructure."

Oldale, R. N. and O'Hara, C. J., 1980. New radiocarbon dates from the inner continental shelf off south-eastern Massachusetts and a local sea-level-rise curve for the past 12,000 yr. *Geology*, 8, pp. 102-106.

Olsen, S.: Robadue, D.; Lee, V. 1980. An Interpretive Atlas of Narragansett Bay. Coastal Resources Center, Marine Bulletin 40, University of Rhode Island.

Olsen, S.; Stevenson, D. 1975. Commercial Marine Fish and Fisheries of Rhode Island. Coastal Resources Center, University of Rhode Island: Marine Technical Report 34.

Peck, J. A., and R. L. McMaster, 1991. Stratigraphy and geologic history of Quaternary sediments in lower West Passage, Narragansett Bay, Rhode Island. *Journal of Coastal Research*, Special Issue 11, pp. 25-37.

Peltier and Fairbanks. 2006. [need reference info]

Personal communication with Jon Boothroyd, Rhode Island State Geologist and Professor Emeritus, University of Rhode Island. April 2010.

Personal communication with John Brown, Narragansett Indian Tribe Historic Preservation Office. April 26, 2010.

Personal communication with David Robinson. [need info from URI Geologists]

Pope, Peter E. 2004. *Fish into Wine: The Newfoundland Plantation in the Seventeenth Century*. Chapel Hill, NC: University of North Carolina Press.

Reynolds, A., 1997. Block Island Southeast Lighthouse: National Historic Landmark Study http://www.nps.gov/maritime/nhl/blockisl.htm

Rhode Island Historical Preservation and Heritage Commission (RIHPHC), 1991. *Historic and Architectural Resources of Block Island, Rhode Island.* (In cooperation with the Block Island Historical Society) RIHPHC, Providence, RI.

Rhode Island Historical Preservation and Heritage Commission (RIHPHC). 2007. *Performance Standards and Guidelines for Archaeological Survey: Standards for Archaeological Survey"* RIHPHC, Providence, RI.

Rhode Island Historical Preservation and Heritage Commission (RIHPHC). 2010. Web site, "National Register." RIHPHC, Providence, RI. http://www.preservation.ri.gov/register/

Rhode Island Historical Society, 1993. *What a Difference a Bay Makes*. Providence, RI: Rhode Island Department of State Library Services.

Ritchie, Ethel Colt. 1980. *Block Island, Lore and Legends*. Block Island, RI: Francis M. Nugent.

Schroder, Walter K. *Defenses of Narragansett Bay in World War II,* 1980 repr. 1996. Chapel Hill, NC: Professional Press.

Schurr, Sam H. and Bruce C. Netschert. 1960. *Energy in the American Economy, 1850 - 1975: An Economic Study of its History and its Prospects*. Baltimore: The Johns Hopkins Press.

The Seaman's Bill: Hearings Held Before the Committee on Merchant Marine and Fisheries on House Bill 11372, December 14, 1911. 1911. Washington: GPO.

Sekatau, E.T. (Recipes). *Narragansett Indian recipes: Traditional and contemporary.*

Sekatau, E.T. (Pottery). *Narragansett Indians Teaqua: "What's going on?" pottery, past, and present.*

Snow, Ralph Linwood and Douglas K. Lee. 1999. *A Small Shipyard in Maine: Percy & Small and the Great Schooners*. Bath: Maine Maritime Museum.

Snyder, Marlene and Don Snyder. 1998. *Rhode Island Adventure Diving.* Westfield: Marlene and Don Snyder.

Snyder, Marlene and Don Snyder. 1999. *Rhode Island Adventure Diving II*. Westfield: Marlene and Don Snyder.

Snyder. 2001. [need reference info]

Statutes of the United States of America passed at the First Session of the Forty-Ninth Congress, 1885-1886. 1886. Washington: Government Printing Office.

Swanson, Carl E., 1991. Predators and Prizes: American Privateering and Imperial Warfare, 1739-1748. Columbia, SC: University of South Carolina Press.

St. Martin and Hall-Arber. 2008. [need reference info]

Tveskov, Mark. 1997. Martime Settlement and Subsistence along the Southern New England Coast: Evidence from Block Island, Rhode Island. *North American Archaeologist*, 18: 4, pp. 343-361.

U.S. Fish and Wildlife Service. *North Cape Oil Spill Restoration*. Available on line at http://www.fws.gov/Contaminants/restorationplans/NorthCape/NorthCape.cfm Last accessed March 27, 2010.

Vickers. P. 14. [need reference info]

Wroth, Lawrence C., ed. 1970. *The Voyages of Giovanni da Verrazzano, 1524-1528.* Yale: Yale University Press.