

POSSIBLE SHIPWRECK AND ABORIGINAL SITES ON SUBMERGED LAND

NEW BEDFORD, MASSACHUSETTS

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ABSTRACT

A proposed dredging of the New Bedford Harbor channel could adversely affect significant underwater archaeological sites unless those sites are located and avoided or mitigated. Prehistoric sites may be present, but almost impossible to detect. Historical research indicates, because of centuries of intense maritime activity in the harbor and Buzzards Bay, there were at least eighty-one historically significant small and large vessels lost in the general area that includes the proposed disposal sites. Any dredging or disposal might disturb one or more of the shipwreck sites.

Therefore, any dredging in the New Bedford area should be preceded by an archaeological remote sensing survey, to locate and identify by type, any significant sites within the proposed disturbance areas. Once any detectable cultural resources have been located and identified by type, decisions can be made to avoid or mitigate them.

INTRODUCTION

The State of Massachusetts is currently planning to dredge the New Bedford Harbor shipping channels. As part of the project planning, local and federal statutes and regulations require the identification of significant cultural resources within the possible impact zone and either avoidance or mitigation of impacts to such resources, if identified. As this channel was dredged in the past, the impact zones will be areas chosen for dredge material disposal.

Massachusetts therefore contracted with the Maguire Group to 1) conduct preliminary background research to determine if undetected remains of prehistoric sites and shipwrecks may be in the project's possible disposal areas and, 2) recommend any necessary further research to meet local and federal cultural resource requirements. The Maguire Group conducted the study, in association with Dr. Warren Riess as maritime archaeologist.

PROJECT DESCRIPTION

Area Description

The project area is located in New Bedford and Fairhaven, and in a section of Buzzards Bay. For millennia this part of the Atlantic Ocean has been a thoroughfare for numerous interests, including assumed prehistoric fishing and transportation, European exploration, general and military shipping, commercial fishing, and recreation.

Site Description

The disposal sites being considered are generally two types. One is the area directly adjacent to both sides of the existing shipping channel. The other consists of discreet sites in

northern-mid- Buzzards Bay. Each possible disposal site has a different size and shape (Figure 1).

BACKGROUND ANALYSIS

Methods

In order to determine the probability of sites, the location of any known remains, and information about previously investigated sites, the research team conducted interviews and inspected secondary and some primary archival material. To research all available primary material would take many months of time without any guarantee of added information. Therefore, extensive primary research was not required for this study.

The research team interviewed staff at the Massachusetts Board of Underwater Archaeological Resources, two local commercial divers, the New Bedford Harbor Master, and a commercial fisherman. They also conducted limited primary and secondary research at the local public library, the New Bedford Whaling Museum Library, and the US Corps of Engineers offices in Concord, Massachusetts.

Histories of the New England region, Massachusetts, and New Bedford Harbor were studied for background historical information, and published material on the prehistory of the area were read for pertinent information. In addition, published and unpublished lists of shipwrecks were inspected to determine how many ships were lost in the study area. The references included an “encyclopedia” of shipwrecks with many inaccuracies, excerpts from a federal Bureau of Land Management study of some primary sources, and a list compiled by an amateur shipwreck historian from Massachusetts. Little primary research was conducted, except for the study of historic charts of the area at the Mystic Seaport Museum chart archives and the interviews mentioned above.

Since most shipwreck locations cited in contemporary newspapers were quite general, such as "lost off New Bedford," and other sources gave exact locations, the team designated each reported shipwreck as being at a specific location, "off" a municipality, or in Buzzards Bay.

To determine significance for each site we used the Department of the Interior's definition for eligibility to the National Register of Historic Places -- generally sites over fifty years old. However, most of the shipwrecks were over one hundred years old. We have accepted the recorded locations and dates of the shipwrecks, without enough time to research each shipwreck in depth, therefore the information for any particular site might be inaccurate. However, the approximate number of significant shipwreck sites in the study area is accurate enough to allow the determination of recommendations for predredging planning.

HISTORICAL BACKGROUND

The history of the study area is rich in maritime activities. Fishing in the New Bedford Harbor area probably began when the first group of humans settled in the area. New Bedford and Fairhaven have a protected harbor on the north shore of Buzzards Bay, with land on three sides and a protected mouth at the southern entrance. Local, near shore, waters contained many edible species in quantities to sustain thousands of people, even with primitive fishing techniques.

Prehistoric Indians used the shores of the New Bedford and Fairhaven for permanent dwellings, growing food, collecting sea food, and using the waterways for transportation. Regionally, Indians were known to collect many types of shell fish and fin fish. They used small dugout canoes for fishing and hunting mammals, and for transportation along the shore and to nearby islands.

In most of the southern coast of New England, Indian dwelling sites are typically found

near a beach and a fresh water source with an exposure to the sea. In addition, shell middens, created by Indians processing bivalves, are often found in similar areas without the need of running fresh water (Bourque, 1980, IV-45-49 & Riess, 1989, 12). After the last ice age, the study area was well inland until the area was open to the sea at approximately 3,000 BP. Since then, a sea level change has placed the coastline of 3,000 BP under water in Buzzards Bay (Bourque, 1980, IV).

When Europeans settled at Plymouth and Boston in the 1620s, they left the New Bedford Harbor area to the Wampanoags, under the chief sachem Massasoit at Mt. Hope (Bristol, R.I.). The whites, mostly Quakers and Baptists, began to settle into the area after they bought the land in 1654. They were mostly farmers and fishermen who took over some of the Wampanoags fields and fishing grounds. New Bedford and Fairhaven were part of the township of Dartmouth during the colonial period. The population grew slowly until the mid-1700s, when shipbuilding became an important local industry.

The area's colonial seafaring was mostly confined to local fishing, transportation, and the coastal merchant trade. During the Revolutionary War, the British raided New Bedford Harbor, burning much of the town, the wharves, and most of the ships and boats in the harbor. After a few years, the area recovered as New Bedford became an important whaling center. By the 1850s it had become the largest American whaling port, with 329 whaling ships and 10,000 men employed in the business. Even before the whaling industry peaked, New Bedford joined the New England industrial growth. Mills produced cloth, iron and copper goods, shoes, and machines. As the whaling industry died from kerosene and oil competition, New Bedford's other industries more than made up for the loss.

New Bedford Harbor remained busy throughout the 1800s and the early 1900s. Whaling and manufacturing required great quantities of supplies and exports by transoceanic and coastal ships and small boats. Fishing continued throughout the period and recreational boating increased with time. In the past eighty years commercial shipping has slowed due to decreased manufacturing and competition from other modes of transportation, while commercial fishing

has increased as diesel engines enabled fishermen to fish further away and return safely.

Today, New Bedford Harbor and Buzzards Bay continue to be active boating and shipping thoroughfares. A smaller amount of commercial fishing and shipping continues in the area and recreational boating has increased dramatically over the past 100 years.

POTENTIAL FOR ARCHAEOLOGICAL SITES

Since little is known of the prehistoric Indians of the study area, any remains, whether a village, fish processing site, or sunken canoe, would be of great importance. However, previous construction, dredging, and fill operations may have eliminated such possible finds. Remains of any prehistoric sites, not near a previously found archaeological site, would be extremely hard to locate under the sediment in the survey area. Remote sensing surveys will generally not indicate a prehistoric site in this type of topography. Locating them would require archaeological trenching of each proposed impact area. Spot inspection by archaeological divers, while investigating remote sensing targets of possible historic remains, would be useful, but probably not productive.

In contrast, historic shipwreck sites are known to exist in the general study area and are easier to detect. The number of vessel losses found in this study is smaller than the total losses that would be located with a complete study, but the results found are indicative of a larger number of probable shipwreck sites in the study area. The lack of complete recorded evidence is typical for any locality along the New England shores. Until recently the loss of a vessel, even with the loss of life, was not considered newsworthy enough for the ubiquitous 4-page weekly newspaper in the 1700s and 1800s. State and federal government compilations of vessel losses, which are incomplete, date only from the very late 1800s. In addition, the parameters of this study only included some primary research with mostly the inspection of secondary compilations of data from the primary sources. The data located in this study indicate that there is a

possibility of encountering the remains of an historic vessel in any section of the project area.

The survey-level historical research located a total of twenty-two shipwrecks in the New Bedford/Fairhaven area and fifty-nine in Buzzards Bay. All of the vessels are listed as lost "at" or "off" New Bedford or Fairhaven, or "in Buzzards Bay." Except for two ships, that are definitely not in any of the possible disposal areas, no closer locations are given for the lost vessels. Therefore their locations relative to the possible disposal sites is unknown. Sixty-three would fit the Department of the Interior's eligibility for the National Register of Historic Places.

In addition to those vessels found in the historical records, we must assume many others were lost in the study area and not recorded. Before radios and radar, vessels were surely lost with all hands on the numerous ledges and shallows in the area during storms and fogs. Others could only record them as missing at sea, whether they had just left the harbor, were returning after a long voyage, or were blown in while trying to sail past the shore. No one would know what happened to them. They would include small and large fishing boats, coasters, and transoceanic merchantmen, whalers, and warships.

Besides those vessels lost while underway, a number would have been lost at their moorings or abandoned in shallow water. Some of the shipwrecks would have been salvaged shortly after wrecking or more recently. For example, remains of some of the vessels destroyed by the British in 1778 may be in, or just outside of, the harbor.

Since we know so little of the early vessels, the onboard fishing processes, and life aboard the early merchant vessels, the remains of any historic ship or boat would be archaeologically and historically significant on a local, regional, and national level. Locating remains of these vessels with remote sensing will require a precise survey because of their peaceful utilization. Warships, and larger merchantmen sailing to dangerous places, carried many iron guns and a large quantity of iron shot. The iron disturbs the earth's magnetic field and can usually be detected with a magnetometer survey. Most of the vessels which might have been lost in the study area would have had few, if any, large guns or ammunition. However, they had iron anchors and sometimes small iron guns which produce a smaller magnetic anomaly. Therefore, they can only be detected with a careful and precise magnetometer survey.

Three sunken vessels are indicated on the NOAA navigation charts, in New Bedford Harbor between the hurricane barrier at Fort Phoenix and Popes Island. Another is indicated on the New Bedford waterfront just north of Fish Island. We were unable, through limited interviews, to determine the names of the vessels or whether they had been cleared to date.

RECOMMENDATIONS

The number of historic shipwrecks "found" by historical research, and the probable existence of smaller significant historic wrecks, indicates that there is a possibility that dredging and dredge disposal will impact historic shipwreck sites unless the planned site(s) is cleared by survey or avoidance is practiced after a survey. Depending on the planned method of anchoring the dredge and disposal vessels, disturbances from large anchors can be 500 to 1,000 ft. away from a barge. To clear the proposed disposal sites we recommend the following tasks be completed:

1. A remote sensing survey, including precise navigation, magnetometer, side scan sonar, and subbottom profiler of all possible impact areas.
2. Analysis of the gathered data to determine the location of possible sites.

3. Visual inspection of possible sites, suggested by the remote sensing, that might be impacted if not avoided.
4. A report on the above.

More specifically:

1. Remote Sensing Survey

A precise archaeological remote sensing survey of the proposed disposal sites, including any peripheral impact zones, should extend beyond any planned disturbance, otherwise last minute, small location changes might require a new survey at an inconvenient time. A series of 50 ft.

(15 m) tracklines should be planned. The marine magnetometer and side scan sonar should be used on each track line, while the subbottom profiler should be used on at least every other trackline. The archaeologist should plan and supervise the field work, analysis, and report.

The marine magnetometer should be capable of reading 1 gamma differences in the magnetic field. Magnetic data should include date, time, navigation events, heading, depth of sensor, and strength of field.

A 600 KHz side scan sonar survey of the sites should be conducted to locate possible cultural resources which do not have a significant amount of iron in them, and which are near the water/sediment interface. Presently, the most resolution is gained with a range of 67 ft. (20 m). Therefore, gathering data on every 50-ft. trackline will provide 200 % coverage, enabling a "view" of any target from two sides.

High resolution subbottom profilers, such as CHIRP systems, provide detailed information about the sediment and bedrock on the sea bottom. This information is helpful when analyzing the side scan and magnetometer data. Occasionally they can indicate possible vessel timbers buried in the sediment.

For any formerly dredged channel areas, there is much less chance of finding an undisturbed site in the dredged channel, but a number of sites have been located and held up construction in other "dredged" channels. Since it is not a large area, and the survey vessel must go near the channel anyway if disposal sites on the sides of the channel are being considered, we suggest that the survey include any such areas.

In order to tie all of this data together, a precise DGPS navigation system should be used and the magnetometer, side scan sonar, and subbottom profiler synchronized with it in the field.

2. Processing of the survey data should be handled by the survey company, who provide post plot track lines, a magnetic contour chart(s), and all original data, so that their geophysicist and archaeologist can systematically inspect and analyze the data for possible cultural resources. In small areas, with fewer than six track lines, a magnetic contour chart may not be appropriate.

3. Archaeological inspection of any possible sites usually can be accomplished at three per day in 0-to-60 feet of water or two per day in 60-to-100 ft. Inspection would include dropping an anchored buoy on each possible cultural resource and diving down to do a systematic search and recording of the target. If the target can not be located on the sea bottom surface, archaeologists should be able to find any target with a hand-held metal detector. Targets in water over 130 ft. deep are usually inspected with a remote operated vehicle (ROV).

Targets not located visually or with a metal detector should be few, if any. To core down to them or excavate to identify them is usually not justified. However, if there is such a target(s), a decision on the proper mitigation can be made at that time after consultation with state authorities.

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