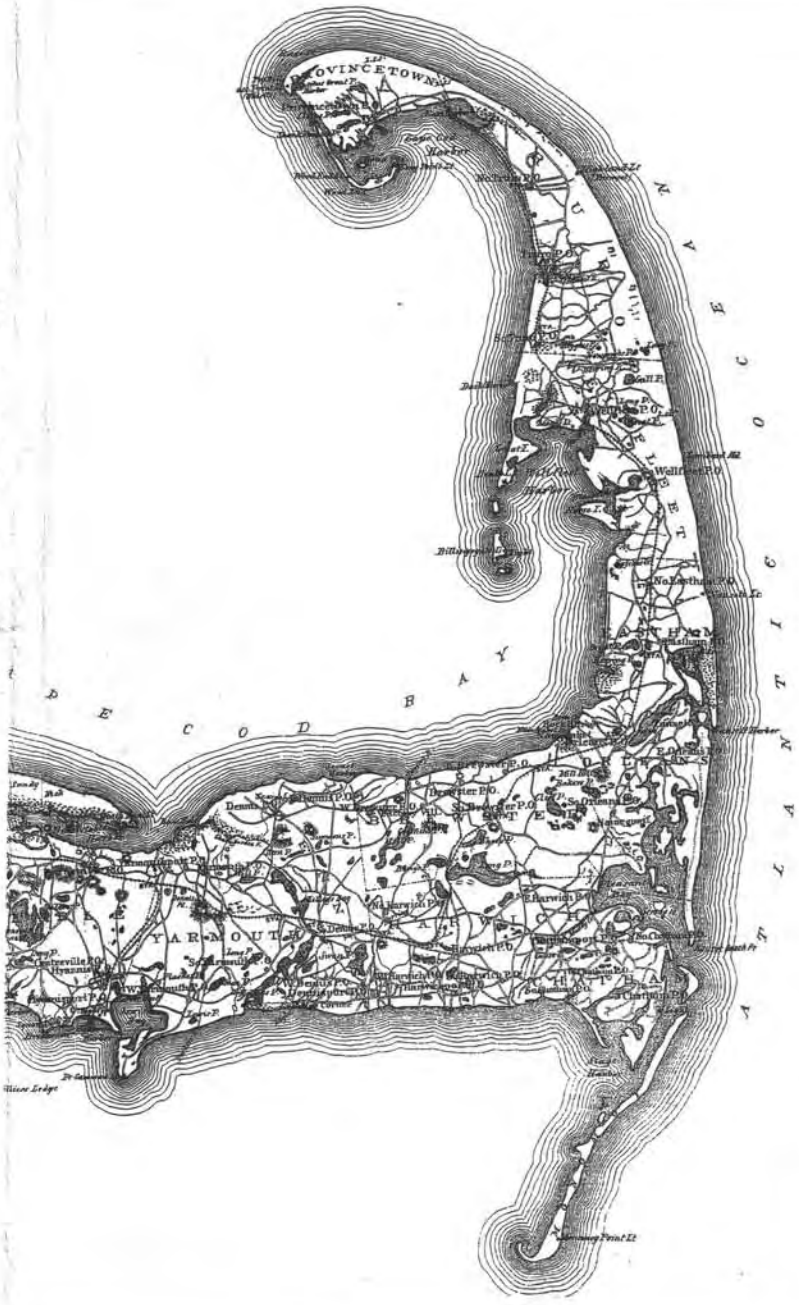

Historic Cultural Land Use Study of Lower Cape Cod

A Study of the Historical Archeology and History of the Cape Cod National Seashore and the Surrounding Region

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Carolyn D. Hertz
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Prepared for: The Archeology Branch,
Cultural Resources Center
Northeast Region, National Park Service
U.S. Department of the Interior
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Cover photograph: Alex MacLean
Cover drawing: *Atlas of Barnstable County, Massachusetts.* Geo. H. Walker and Company, 1880. 16-17.

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ACKNOWLEDGMENTS

This project was undertaken by the University of Massachusetts Archaeological Services (UMAS) of Amherst in cooperation with the National Park Service (NPS). The principal authors were Richard D. Holmes, Project Archeologist; Carolyn D. Hertz, Project Historian; and Mitchell T. Mulholland, Principal Investigator and Director of UMAS. Members of the Cape Cod (CACO) Research Group who worked on bibliographic materials, context development, and initial research and text were J. Edward Hood (architecture and infrastructure, public institutions), David Glyn Nixon (agriculture, maritime life, art colonies, and tourism), and Ellen-Rose Savulis (minority populations and Native Americans). Additional material on military technology was researched by Frederick T. Barker. Frederick J. Dunford of the Cape Cod Museum of Natural History reviewed material on Native Americans and provided suggestions on the Prehistoric and Contact periods of the Cape.

Staff of the NPS and the Massachusetts Historical Commission (MHC) who participated on a regular basis were Dick Hsu, former Regional Archeologist for the North Atlantic Region; Paul Weinbaum, former Regional Historian for the North Atlantic Region and now Lead Historian for the Boston Support Office; Frank Ackerman, Chief, Division of Interpretation and Cultural Resources Management at Cape Cod National Seashore (NS); and Michael Steinitz of the MHC. Not only did this group make valuable suggestions, but also their discussions turned this project into a fascinating seminar on the historical archeology and history of the region.

Several other persons reviewed material and made suggestions. Among them were Marguerite Reinke, Paul Mullins, and Eric Johnson of UMAS; Rebecca Joseph of the NPS; and Leonard Loparto of the MHC.

Many other individuals deserve thanks for their contributions. Although one runs the danger of omitting someone, among those who were of assistance to this project were Michael Whatley, Hope Morrill, William Burke, and other staff members of the NPS; Mark Adams of the Massachusetts Audubon Society; and librarians at the local libraries of Cape Cod. Members of local historical commissions and societies were uniformly helpful, as were many other residents. The reconnaissance reports associated with this document acknowledge and thank all those who have been helpful at various stages of this project.

UMAS is also fortunate in having the benefit of having consulted on previous projects with authorities on subjects relevant to this one, including such topics as the Pilgrims, Native Americans of the region, and maritime history; to these individuals, who are acknowledged in our other reports, our thanks again.

Computer assistance was provided by Margareta Chmiel. Mark Will served as library assistant. Field crew members on the archeological reconnaissance surveys also gave aid in researching materials at the Seashore Headquarters library when the weather did not cooperate; they are named in the various reconnaissance reports. Graphics were prepared by Maureen Manning-Bernatzky. The editors were Eric Johnson, Marguerite Reinke, and Jan Whitaker. NPS editing of the report was performed by Sharon Ofenstein of the Northeast Cultural Resources Center.

A note of thanks must also be given to the previous students of the Lower Cape, whose work was valuable for our own research. We hope that future archeologists, historians, and cultural geographers, as well as planners and managers, will find this volume useful.

The National Park Service began a multi-year National Archeological Survey Initiative (NASI) designed to locate, assess, and evaluate the archeological resources in all park areas. To do this for a large geographical area with a complex land-use history requires an interdisciplinary study of land use.

Managers of the former North Atlantic Region, NPS, decided to undertake a cultural land-use study of Cape Cod National Seashore. This was a pilot project designed to establish a framework for explaining the presence and form of historic archeological resources. Cape Cod NS was selected because of its many varied and dispersed archeological resources. After the study began, the North Atlantic Region was combined with the Mid-Atlantic Region to create the Northeast Region. The study will permit the significance of individual resources to be evaluated for purposes of determining National Register eligibility. Previously, the Massachusetts Historical Commission conducted a regional reconnaissance-level survey of Cape Cod and the Islands (**Bradley 1987**), providing broad historical themes for the region. Surveys of the history of the Lower Cape and historic resources have been prepared by **Clemensen** (1979) and **Rockmore** (1979). The NPS conducted a survey of historic structures in the seashore (**Pfeiffer 1987**), and also an archeological survey that addressed historic land use but was concentrated on prehistoric sites (**McManamon 1984**).

The project consisted of four segments: (1) a literature search, assessment, and description of methodology; (2) an outline of historic contexts and associated resources; (3) case studies, or archeological reconnaissance surveys; and (4) a cultural land use study. This report represents this fourth portion of the project. A summary of the segments follows:

1 Literature search, assessment, and description of methodology. The purpose of this segment was to determine the extent and location of information about topics deemed important in the region's history. This segment was completed preparatory to the construction of historic contexts (the second segment) and the case studies that applied them to Cape Cod National Seashore (the third segment). It resulted in an annotated bibliography, which was presented to the NPS in digital format.

2 Outline of historic contexts and associated resources. The purpose of this segment was to provide a framework for the cultural land use study, and to synthesize data in summary form. "Historic contexts are information about historic trends and properties grouped by an important theme in prehistory or history of a community, State, or the nation during a particular period of time" (**NPS 1991**:4). They are organized around theme, place, and time, and they provide a framework for interpreting sites and determining significance and National Register eligibility. Associating historic contexts with sites and archeological implications provides models for the location, identification, and interpretation of historic resources.

The outline was provided to the NPS in the course of this project. Not all contexts initially considered important in the Lower Cape Cod region could be investigated archeologically; consequently, the historic contexts developed are those that can be associated with artifacts, features, and landscapes, as well as documents. Nonetheless, the principal historic contexts for the interpretation of historic land use of the region have all been addressed.

3 Case studies. These are archeological reconnaissance surveys. They are conducted to demonstrate the connection between contexts and the evaluation of park resources. Field surveys are used to identify and interpret extant cultural features and anomalies or other indicators of past land use and potential subsurface features. Once the principal historic contexts were determined and initially researched, the case studies were undertaken to test the applicability of the contexts for the interpretation of sites. Further research on the individual project areas also added further information, particularly concerning archeological implications and expectations of archeological sensitivity. The case studies are reported as follows:

Holmes, R.D., C.D. Hertz, and M.T. Mulholland

1994a *Archaeological Reconnaissance Survey of Fort Hill, Cape Cod National Seashore, Eastham, Massachusetts.* University of Massachusetts Archaeological Services Report 154b, Amherst.

1994b *Archaeological Reconnaissance Survey of the Atwood-Higgins Complex, Cape Cod National Seashore, Wellfleet, Massachusetts.* University of Massachusetts Archaeological Services Report 154c, Amherst.

1994c *Archaeological Reconnaissance Survey of Higgins Hollow, Cape Cod National Seashore, Truro, Massachusetts.* University of Massachusetts Archaeological Services Report 154e, Amherst.

Holmes, R.D., C.D. Hertz, F.T. Barker, and M.T. Mulholland

1994 *Archaeological Reconnaissance Survey of Long Point, Cape Cod National Seashore, Provincetown, Massachusetts.* University of Massachusetts Archaeological Services Report 154d, Amherst.

4 **Cultural land use study.** This is a report that defines, describes, and graphically illustrates the historical contexts within which archeological resources may be identified, located, interpreted, and evaluated. It assesses the relative importance of each context so that management decisions may be made for resource preservation and protection. It discusses the archeological implications of each context. Archeologically sensitive areas are identified on the basis of previous research, field surveys, documentary evidence, and the expectations derived from the historic contexts.

The present volume is divided into eight chapters. Its first chapter provides background information on the environment, prehistory, and history of the region. It places the Lower Cape into a general historical framework by means of a timeline, and discusses the specific historical development of the six towns of the Lower Cape: Chatham, Orleans, Eastham, Wellfleet, Truro, and Provincetown. Topics addressed include early European exploration and settlement; the Pilgrims at Plymouth and Nauset; changes in economy, subsistence, and population; and major events of the past three and a half centuries. Historical sources useful for research are noted and evaluated. Subsequent chapters discuss the principal historic contexts for the interpretation of archeological resources and historical trends. The contexts are as follows:

Native American Settlements
Agriculture and Rural Life
Maritime Life
Industries: Extractive, Processing, and Manufacturing
Military Affairs
Tourism and Seasonal Residence
Transportation and Communication

These broad contexts contain many more specific topics. Some of these topics could have been considered in more than one context. For example, fish processing could be categorized either as part of maritime life or as a processing industry. Such topics were assigned to one among several potentially appropriate contexts in a somewhat arbitrary manner. Other topics presented different challenges that also required organizational decisions. For example, rather than considering minority populations as contexts in themselves, this volume places them within the historic contexts relevant to the Lower Cape as a whole. The problems with studying minority or "marginalized" populations are that the documentary record is very thin and the archeological record has not been thoroughly investigated. One conclusion of the research conducted for this project is that ethnographies and oral histories are needed to adequately represent the Portuguese and post-Contact Native Americans in the region.

Periodization in this volume follows that of the MHC and most northeastern archeologists for both prehistory and history. Although this may sometimes lead to the over-representation of events at the expense of processes, it does provide a convenient way to organize material and compare what was happening in different places and among different historical themes.

Geographic division was another concern. Since this wass a pilot study, it was not thought appropriate to focus solely on the towns at the expense of region-wide developments. Nevertheless, the particularity of New England towns required that attention be paid to the six individual towns and their different histories.

One important aspect of this study was to associate the contexts with archeological implications and historic resources. The archeological implications are hypotheses about the presence of artifacts, features, soils, and landscapes associated with a given context. They are included in the present volume.

The present volume also can be used as a handbook for further research. In addition to the text, it contains a compendium of historic maps useful for archeologists, historians, and cultural geographers. The bibliography includes all of the titles in the annotated bibliography, with a guide for locating some of the rarer works.

In sum, this portion of the project is useful for archeologists and historians performing research, and for park planners managing land on the Lower Cape, since it provides contexts within which to predict the location of sites and to interpret sites that have been encountered. Several research questions of significance are suggested. Every archeological implication is itself a hypothesis to be tested.

This volume does not presume to answer all questions on the archeology and history of the Lower Cape; the planning of this project included the understanding that further work would be undertaken on the topics addressed here. If any factual errors have occurred in the text, the reader is invited to correct them. Regarding the interpretations and conclusions of this volume and the reconnaissance surveys, as is the case with all models, ideal types, and syntheses in the social and historical sciences, further research can and should lead to revision and refinement.

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Chapter I

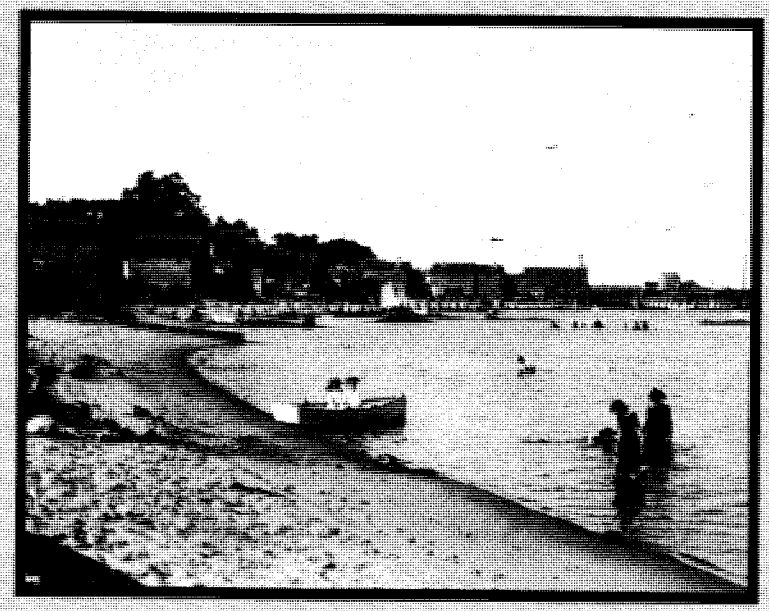
BACKGROUND FOR THE STUDY OF THE LOWER CAPE

A Region-Wide View

Chronology

Development of the Towns

Using the Background Information for Further Study



Examining in detail the principal themes of historic times on the Lower Cape first requires that the region be put into an environmental and historical setting; this chapter provides that setting. It supplies geographical, environmental, prehistorical, and historical background information. It presents a timeline that puts the history of the region into perspective. Finally, it discusses the development of each of the six towns of the Lower Cape.

A Region-Wide View

Geographical Background

Location. Cape Cod is located at the eastern end of Massachusetts (Figure 1). It is surrounded by Cape Cod Bay, Buzzards Bay, Vineyard Sound, Nantucket Sound, and the open waters of the Atlantic Ocean. Although it has been called a "cape" since the seventeenth century, technically it is not a cape but a peninsula. Modern practice is to consider that the Cape begins at the Cape Cod Canal.

Although it has been called a "cape" since the seventeenth century, technically it is not a cape but a peninsula.

Barnstable County (consisting of the 15 towns on the Cape) is often linked with Dukes County (the seven towns on Martha's Vineyard and the Elizabeth Islands) and Nantucket County (the town and island of Nantucket) in a geographic unit called "the Cape and Islands" (Figure 2).

The term "Lower Cape," of nautical origin, refers to the study area. Readers should be aware that there are other practices for naming the sections of the Cape. For example, "Outer Cape" is sometimes used for the Lower Cape or for the eastern portion of it.

This study centers on the Lower Cape, especially land within the legislative boundaries of the Cape Cod National Seashore. Monomoy Island, located south of the mainland in Chatham, was not included within the project area.

Maps. U.S. Geological Survey (USGS) topographic maps that show the project area are reproduced as Figures 3-12. Among recent USGS maps are the following 7.5 minute, 1:24,000 and 1:25,000 scale maps that show portions of the project area:

Chatham, Mass., Quadrangle
(1947, 1970, 1974, Figures 3 and 4)
Orleans, Mass., Quadrangle
(1946, 1971, 1974 [revised 1977], Figures 5 and 6)
Wellfleet, Mass., Quadrangle
(1958, 1968, 1972, Figures 7 and 8)
North Truro, Mass., Quadrangle
(1958, 1967, 1972 [revised 1977], Figures 9 and 10)
Provincetown, Mass., Quadrangle
(1958, 1972, Figures 11 and 12)

Other USGS maps that show land adjacent to the project area are:

Monomoy Point, Mass., Quadrangle
(1968, 1974 [revised 1977])
Harwich, Mass., Quadrangle (1969)

Place Names. When examining historic maps or old texts, the reader should be aware that not only have town boundaries been altered over time, but also the names themselves have changed. For instance, the area at the southern end of the Lower Cape was called the "Constablewick of Monomoyick" from 1679 until 1712 when it was named Chatham. "Nauset" (named in 1646, but referred to earlier in *Mourt's Relation* as "the Kingdome of Nawset") included Eastham, Wellfleet, and most of Orleans; after 1651, the name Eastham was used for this area. Wellfleet was originally called "Billingsgate." Orleans was the "South Precinct of Eastham," until it was set off as a town in 1797. At the northern end of the Cape, unincorporated land became the towns of Truro in 1709 and Provincetown in 1727. An old name for Truro was "Dangerfield." Within Provincetown was a tract of land that was not divided among individual landholders; this was called the "Province Lands."

Environmental Background

Just as the Cape is a distinct geographic entity, it can be considered as an environmental unit with a distinct ecological history and characteristics.

Geology. Bedrock is not exposed on the Cape, but is deeply buried by Quaternary sediments. Some geologists consider the bedrock here to be granite, gneiss, and schist from the Proterozoic Era (i.e., a period more than 600 million years ago) (**Zen 1983**).

The foremost geologist of the Cape, Robert Oldale, writes that the bedrock of the Cape and Islands "represents a very long history of sea-floor spreading and continental drift...." He continues:

> Much of the bedrock of this region formed in an early Paleozoic [i.e., during the Paleozoic Era, which lasted from 570 to 245 million years ago] ocean that existed where the Atlantic does today. This ocean, called Iapetus, closed gradually during the Paleozoic Era, as Africa, Europe, and South America drifted toward North America. As the continents drifted together, compression caused some of the crustal rocks to be thrust downward deep into the Earth, where they melted to form plutonic rock. Some of the melted rock formed granite deep in the crust...The colliding continents also caused some of the crustal rock to rise and form mountains...the

> deeply eroded [mountains] of southern New England...formed as Africa and the eastern part [of] North America collided, closing the Iapetus Ocean (**Oldale 1992**:24-25).

In the early Mesozoic Era (which lasted from 245 to 66 million years ago) the continents drifted apart again, creating the Atlantic Ocean. Erosion lowered the mountains, and sediments were carried by streams to the ocean. A thick deposit of sediments was laid down next to the ocean, forming the Coastal Plain. That part of the plain that is submerged is the Continental Shelf. During much of the following Tertiary period (from 66 to 1.6 million years ago) the area where the Cape is today was itself under water, although there were periods in which the land was exposed and subject to erosion (**Oldale 1992**:25-26, 31-32).

The present Cape Cod was formed by the action of the Laurentide Ice Sheet, the last glacier to cover the northeastern part of North America. The ice sheet split into lobes at its southern margin, divided by ridges of bedrock. In the area now occupied by Cape Cod Bay, the Cape Cod Lobe advanced; to the east, the South Channel Lobe covered a larger area. Parts of the Lower Cape (northern Orleans, Eastham, Wellfleet, and Truro) consist of interlobate moraine deposits laid between the Cape Cod Lobe and the South Channel Lobe. Among the topographic features of this area are the kame fields of northern Orleans and Eastham, the Plains of Nauset, the high plains of Wellfleet and southern Truro, and the North Truro Plains (**Chamberlain 1981**:95-139; **Oldale 1992**:42). Pressure from the ice pushed up clay beds that had been laid during the preceding interstadial at the "Clay Pounds" in North Truro.

To the west of the project area are deposits of the Buzzards Bay Moraine and the Sandwich Moraine. **Oldale and Barlow's** (1986) geologic map shows the Sandwich Moraine extending only as far as Dennis; to the east, in Brewster, Harwich, Chatham, and Orleans, are outwash plain deposits (such as the Harwich Outwash Plain deposits), ice-contact deposits (such as the Nauset Heights deposit), and Cape Cod Bay lake-bed deposits.

Chamberlain's older map, on the other hand, indicates that the Sandwich Moraine "runs east-west not far from the Cape Cod Bay shore from Sagamore to Orleans and Chatham," with a great outwash plain fenced in by the moraine on the west, north, and east (**Chamberlain 1981**:96). According to Chamberlain, the eastern end of the Sandwich Moraine is apparent in Orleans as irregular ground surfaces and boulder fields, and Town Cove may be a submerged series of kettle holes. In Pleasant Bay there are several morainal islands. At Chatham, the Cape Cod Lobe of the ice sheet reached further south, forming several hills (**Chamberlain 1981**:121-122).

These ice masses began to melt and retreat approximately 18,000 years ago, further altering the landscape. Much of the Cape consists of glacial outwash plains, and there are many topographic features associated with glacial melting, such as kettle hole ponds created by large blocks of ice and hollows created by meltwater channels.

Changes in sea level and the movement of the ocean's waters have sculpted the Cape further. The tip, north of Highland Light in Truro, was formed by the deposition of sand by longshore currents. Wind has also raised the drifting sands into dunes. In areas protected from the open ocean by barrier beaches, marshes have developed. Higher concentrations of organic matter are found in the soil here than on the beaches and dunes. These salt marshes offer a habitat to a wide range of migratory waterfowl and marine life.

There are no large or fast-moving rivers on the Lower Cape. Several small streams, some of them tidal, pass through east-west valleys called "pamets" or "hollows." Numerous ponds provide fresh water, although there are few springs.

Forests. Southern New England's forests have changed since they were reestablished after the last glaciers retreated. Four forest types have been postulated, on the basis of pollen data (**M. Davis 1965**):

between 10000 and 7500 B.P. (years before present)–white pine;
from 7500 to 5000 B.P.–oak-hemlock;
from 5000 to 1800 B.P.–oak-hickory; and
from 1800 to 400 B.P.–oak-chestnut.

Cape Cod was formed by the action of the Laurentide Ice Sheet, the last glacier to cover the northeastern part of North America.

Some early European explorers reported tall trees. On areas of poorer soil, there were stands of pitch pine (*Pinus rigida*) and oak. On richer soils were red oak (*Quercus rubra*) and beech (*Fagus grandi folia*); there were also white and chestnut oak (*Q. alba and Q. prinus*)and maple (*Acer* spp.). In sheltered spots, protected from salt air, white pine also could be found. Around ponds and lakes there developed a mixture of white pine, pitch pine, hemlock (*Tsuga canadensis*), beech, yellow birch (*Betula lutea*), ash (*Fraxinus* spp.), hickory (*Carya* spp.), red maple (*A. rubra*), white and red oak, sour gum or tupelo (*Nyssa sylvatica*), and holly (*Ilex* spp.). Warmer locations supported white, black (*Q. velutina*), and scarlet oak. Boggy areas had Atlantic white cedar (*Chamaecyparis thyoides*)and shrubs (**Altpeter 1939**:10-12).

Many trees were cut and many acres of forests were cleared in the first 150 years of English settlement. This contributed to soil erosion, a problem that had to be addressed as early as the 1720s.

Soils. Soil scientists (**Fletcher 1993**) have classified the soils on the Lower Cape as being the following:

Hooksan-Beaches-Dune Land—Beaches, dunes, and nearly level to steep, well-drained, sandy soils formed in windblown deposits, along coastal shorelines; these soils

are found on Monomoy Island, on the beaches facing the Atlantic from Chatham to Race Point, the northern part of Truro and all of Provincetown, and the bay shore of Truro, Wellfleet, and Eastham.

Ipswich-Pawcatuck-Matunuck—Nearly level, very deep, very poorly drained peats formed in marine organic and sandy deposits; in areas sheltered from ocean waves along coastal shorelines and adjacent to bodies of brackish water. They are found on islands and the shore of Pleasant Bay in Chatham and Orleans, on the bay side of Orleans around Namskaket Creek and Rock Harbor Creek, in salt marshes of Eastham, on the east side of Wellfleet Harbor around Fresh Brook, Blackfish Creek, and east of Indian Neck, as well as along the Herring River, and in Truro on the Pamet River, near Pilgrim Lake, and in Salt Meadow.

Carver-Hinesburg-Nantucket—Nearly level to steep, very deep, excessively drained and well-drained, sandy and loamy soils formed in glacial outwash, glacial lake sediments, and glacial till; located on outwash plains and in areas of glacial lake deposits; found in Chatham on Toms Neck, a portion of The Neck, the northern shore of Oyster Pond, and North Chatham, and in Orleans between Barley Neck and Snow Point, from Nauset Heights to the western part of town.

Carver—Nearly level to steep, very deep, excessively drained, sandy soils formed in glacial outwash and ice-contact deposits; located on outwash plains and kames; found in Chatham and Orleans on the western shore of Pleasant Bay, in most of Eastham, in the area of Great and Gull Ponds in Wellfleet, and in most of Truro.

Other soil map units present on the Cape as a whole include the following:

Plymouth-Eastchop-Carver-Boxford
Plymouth-Carver-Barnstable
Enfield-Merrimac-Carver and
Plymouth-Barnstable-Nantucket (**Fletcher 1993**).

The quality of the soil was what drew the first colonists from Plymouth to the Lower Cape; however, this quality could not be sustained for many years under English agricultural practices.

Marine Resources. Fortunately for the late seventeenth-century farmers, who realized that the soil was being depleted, several marine environments on and immediately around the Lower Cape provided alternative economic resources. These environments include tidal zones and shallow water; a discussion of these is found in **Godfrey et al.** (1978). Further offshore is another environment important to the Cape—the banks. About 61 m (200 ft) deep, enough sunlight penetrates the banks' waters to sustain plants needed by fish such as cod and haddock. The largest of these banks, the Grand Banks off Newfoundland, covers more than 40,000 square miles; the next largest is the Georges Bank (originally called "St. Georges Bank") off Cape Cod, covering over 10,000 square miles (**Albion et al. 1972**:15). Several protected harbors provided anchorage for the vessels with which residents of the Lower Cape exploited these marine environments.

Climate. The sea is a major moderating influence on the climate here. Cape Cod is the warmest part of New England, but it nonetheless has cold winters. The current average daily high and low temperatures (in degrees Fahrenheit; readings taken at Hyannis from 1951 to 1978) are:

Month	High	Low
January	38.1	21.1
February	39.2	21.9
March	44.9	28.6
April	54.7	36.3
May	64.7	45.3
June	74.0	55.3
July	79.4	61.4
August	78.5	60.3
September	71.9	53.4
October	63.0	43.6
November	52.3	35.2
December	42.5	25.4

There is an average annual precipitation of 44.71 inches and a snowfall of 24 inches (**Fletcher 1993**:138-139). Climate studies suggest that prior to the nineteenth century, generally colder temperatures prevailed across New England (**Grove 1988**).

Prehistorical Background

A succinct summary of the cultural history of Native Americans in southern New England before European Contact is available in **Mulholland** (1984:27-56) or **Dincauze** (1990). For the Cape in particular, there are **Mahlstedt** (1987) and **Moffett** (1957). The discussion that follows is largely drawn from these sources.

Paleoindian Period (12,000 to 10,000 B.P.). The earliest period of prehistory in New England has been characterized by a generalist subsistence strategy (**Dincauze and Curran 1983; Ford 1974; Mulholland 1984**). This contrasts with the view held by some prehistorians that Paleoindians were specialized hunters of big game (**Ritchie 1980; Snow 1980; Witthoft 1952**).

Fluted points are diagnostic of this period. Artifacts similar to fluted points have been found near the Bass River in Yarmouth and the Herring River in Harwich. The paucity

of Paleoindian sites on Cape Cod may be the result of the inundation of sites on the continental shelf as sea level rose in post-glacial times.

Early Archaic Period (10,000 to 8000 B.P.). This period is also poorly understood on the Cape. In southern New England, a slight increase in site frequency over the preceding period may reflect population growth as the climate ameliorated and a wider range of habitats became available.

Bifurcate base projectile points, the hallmark of the Early Archaic, have include specimens from the Herring River in Harwich, at Salt Pond in Eastham, and a location 1.5 miles west of this site in Eastham; there is also a specimen from an unspecified location in Chatham.

Middle Archaic Period (8000 to 6000 B.P.). The Middle Archaic shows an increase in the occupation of the Cape. Projectile point types diagnostic of this period, including Neville and Stark varieties, have been found in 34 artifact assemblages from the Cape. Most of these, however, come from collections rather than known sites. Middle Archaic sites on the Lower Cape are associated with a variety of environments, including estuaries (Chase Farm [19-BN-446] and Railroad [19-BN-144 and 146]), rivers and adjacent swamps (Rose [19-BN-141], Seth's Swamp [19-BN-120], and Freeman-Paine [19-BN-118 and 119]), and the shores of salt bays (Salt Pond, Drummer Cove, and Crows Pond [19-BN-14 to 18]). These known site locations suggest use of anadromous fish.

Other Middle Archaic material has been recovered at Pilgrim Heights in Truro (19-BN-159). No sites that can be conclusively dated to this period have been found on the ocean's shore; one possible exception, the Carns site, is presently being re-evaluated. Severe erosion may have destroyed any sites located there. There are also unsubstantiated reports of Middle Archaic material being found in shell middens.

Late Archaic Period (6000 to 3000 B.P.). This period was one of increased activity on the Cape. Laurentian tradition material is poorly represented on the Lower Cape; there are sites from this period at High Head, as well as the Railroad and Rose sites in Truro, at Salt Pond at Eastham, and at the Muddy Creek and Freeman-Paine (19-BN-118 and 119) sites in Chatham. Susquehanna tradition material has been found in at least 41 sites on the Cape. There are two major Susquehanna burial sites, the Coburn site (19-BN-210) in Orleans and the Hemenway site (19-BN-193) in Eastham. There are also Small-Stemmed tradition sites on the Cape; however, the assignment to the Late Archaic period of sites containing Small-Stemmed projectile points and Small Triangles is problematic in the absence of radiocarbon dates. Orient phase materials, from the end of the Late Archaic, have been recovered from sites at Crows Pond in Chatham, Portanimicutt in Orleans, and Salt Pond/Fort Hill in Eastham; there is a cluster of sites in Truro (seven at High Head and four near Corn Hill). The location of Orient phase sites suggests a concentration of activity at the end of the Late Archaic at the extremity of the Cape.

Woodland Period (3000 to 400 B.P.). The Woodland has been defined by the manufacture of ceramics, and, within the last 1,000 years, the adoption of a horticultural subsistence base. It has been subdivided into the Early (3000 to 2000 B.P.), Middle (2000 to 1200 B.P.), and Late (1200 to 400 B.P.) Woodland periods.

Few sites on the Cape have a single Woodland component; some have Early and Middle components, while others have all three. Areas of Early Woodland activity include 19-BN-234 in Wellfleet and Salt Pond (19-BN-190) in Eastham. There is a single-component Middle Woodland site at Chequesset Neck in Wellfleet.

The many Late Woodland Period sites reported on the Cape suggest that this was a time of increased prehistoric occupation there (**Mahlstedt 1987:41**). Late Woodland

Timeline of Events

Although a timeline can over-emphasize particular events at the expense of long-term trends and processes, it is a useful way to present a chronological perspective. Population data provide opportunities for comparison. Political events and names of some office-holders are listed as they were commonly used in early histories as chronological benchmarks. Events of direct significance to Cape Cod are printed in boldface.

This timeline has drawn on several sources, including local and state histories, previous UMAS reports, Andrews (1962), Commonwealth of Massachusetts (1909a, 1909b), MHC's regional reports (Bradley 1987), Vexler and Swindler (1978), and Wilkie and Tager (1991).

1492
Columbus' first voyage (1492-93) begins

1498
Cabot's voyage to North America

1524
Verrazano's voyage to New England

1585
Roanoke Island Colony established by Raleigh in North Carolina

1588
Spanish Armada defeated

1602
Gosnold's voyage to New England; Cape Cod and Martha's Vineyard visited and named

1603
Pring's voyage to New England;
First North American settlement by the French established by Sieur de Monts on St. Croix River, between Maine and New Brunswick

1605
Champlain's voyage to New England;
Weymouth's voyage to Maine

1606
Charter granted to Virginia Company of Plymouth; Champlain's second voyage to New England

1607
English settle at Jamestown, Virginia (first permanent English settlement in North America) and Sagadahoc Colony, Popham Beach, Maine

1609
Hudson visits Cape Cod, Maine, and Hudson River

1613
Permanent trading post at site of New York established by Dutch;
Block explores New England coast

1614
Smith visits New England coast; Hunt kidnaps people from Plymouth

1616
Epidemic in southeastern New England

1618
Thirty Years' War (1618-1648) begins in Europe

1620
Pilgrims land at Provincetown, explore tip of the Cape, and later arrive at Plymouth; *Mayflower Compact* signed;
Carver Governor of Plymouth

1621
Treaty concluded between Wampanoags and Pilgrims; second Pierce patent from the Council for New England gives title to planters and adventurers;
Bradford Governor of Plymouth;
Wessagusset (Weymouth, Mass.) established

1622
Account of the founding of the Plymouth Colony, *Mourt's Relation*, published in London

1623
English settle at Kittery, Maine;
English settle on Piscataqua River in New Hampshire, later called Strawbery Banke and Portsmouth;
English establish fishing settlement at Gloucester, Massachusetts

Land in the New World was claimed by the King of England on the basis of "discovery" by the Cabots and "non-use" by Native Americans.

1624
Plymouth Colony establishes trading settlement in Augusta, Maine;
Dutch in Hudson Valley;
Smith's *Generall Historie* published;
first cattle arrive in New England;
Wessagusset abandoned

1628
Puritans establish Salem, forerunner of the Massachusetts Bay Colony

burials have been found at the Railroad site (19-BN-144) in Truro and at the Indian Neck Ossuary (19-BN-387) in Wellfleet (**Bradley et al. 1982**). Evidence of eight-row Northern Flint corn has been recovered at sites around Salt Pond (19-BN-288, 323, and 390).

The archeology of Native Americans on Cape Cod is not well known after European Contact. Chapter 2 addresses some of the issues concerning late prehistory on Cape Cod.

Historical Background and Timeline

This historical overview, as well as the town histories and subsequent chapters, follows the system of periodization used by the Massachusetts Historical Commission in its regional summary (**Bradley 1987**), town reconnaissance reports, and site files is followed. While other ways to divide history may be worthwhile, by applying this one to many contexts and towns, the reader can compare what happened in different places and with different enterprises.

A Note on Sources. The history of Plymouth and the Plymouth Colony can be studied from published records, such as the *Plymouth Colony Records*, edited by **Nathaniel B. Shurtleff** (1855-1861), and *The Compact with the Charter and Laws of the Colony of New Plymouth* [short title: *Plymouth Colony Laws*], edited by **William Brigham** (1836). Another source is contemporary accounts; among them are *Mourt's Relation* (first published in 1622), which is the work of several authors, principally Edward Winslow and William Bradford (**Heath 1963** [1622]), Bradford's *Of Plimoth Plantation*, which covers the years 1606 to 1647 (1981 [1856]), and Edward Winslow's *Good Newes From New-England* (1841 [1624]). Older histories include works by **Thacher** (1835), **Young** (1841), **Baylies** (1866), **W.T. Davis** (1885, 1899), **Dudley** (1874), **Hurd** (1884), and **Goodwin** (1920 [1888]). A summary of the history of the Old Colony was prepared by Brigham (**Massachusetts Department of Labor and Industries 1922**:7-12). Many more recent studies address aspects of life in Plymouth. One popular work, criticized by historians for its assertions, is **Willison** (1945). More recent works on Plymouth include **Brewster** (1970), **Dillon** (1975), **Langdon** (1966), and **Stratton** (1986) for general history, **Rutman** (1967) for agricultural practices, and **Demos** (1970) for social life.

There are many secondary works that provide information on the history of the Cape as a region. **Deyo** (1890), **F. Freeman** (1965 [1858, 1862]), and **Kittredge** (1987) are important starting places for a general overview. Some town histories are worthwhile, but readers should be aware that many contain errors that should be checked against primary sources. Since the Cape is a resort area, popular books and pamphlets have been published for the tourist market; these tend to be derivative from secondary sources.

A particularly helpful work on the Cape and Islands is the MHC regional summary (**Bradley 1987**). It contains very useful chapters by **Mahlstedt and Loparto** (pp. 7-16), **Mahlstedt** (pp. 17-53), **Loparto and Steinitz** (pp. 54-162), **Dempsey** (pp. 163-224), **Stott** (pp. 225-322), and **Steinitz and Loparto** (pp. 323-396). A valuable, concise history of the Lower Cape is **Clemensen** (1979), and a study of historic land use on the Lower Cape has been reported by **Rubertone** (1985).

As for primary documents that can be consulted, town records have great potential for research. Although many documents like deeds and probate records have been lost to fire, those that remain are valuable sources. Travel accounts, such as those of **Dwight** (1822) and **Kendall** (1809), and Thoreau's journals (**Thoreau 1962**:VII:431-433 [1855], IX:413-455, 430, 434-435, 448-449 [1857]), are also useful.

Census data can provide information about population growth and decline, and the productivity of industrial, agricultural, and maritime activities. Census information

is available in both primary (e.g., **U.S. Census Bureau various dates**) and secondary (e.g., **Wilkie and Tager 1991**) sources. Graphs depicting population changes for each of the Lower Cape towns are presented in Appendix B.

Maps can be helpful—if not infallible—guides for locating settlements and structures. They also chart the exploration and development of the region. Many early maps (e.g., Figures 14 and 15) have been reprinted in works such as **Benes** (1982), **Dexter** (1984), **Hershey** (1962), **McCorkle** (1985), and **Schwartz and Ehrenberg** (1980). The 1795, 1798, and 1831 maps (Figures 16-25) are available in several locations, as are other historic maps (Figures 26-51).

Geopolitical Issues. Before considering the history of the region, the chronology of significant events, or the history of each town, some discussion of political institutions may be helpful, particularly to readers unfamiliar with New England.

Political Entities. For most of the seventeenth century, Cape Cod was not part of the Massachusetts Bay Colony but was in the Colony of New Plymouth. The latter included the present-day counties of Barnstable, Bristol, and Plymouth, except for the towns of Hingham and Hull. Much of the Lower Cape was within a tract reserved for the "Purchasers" or "Old Comers" of Plymouth. Many of the earliest English settlers of Cape Cod, however, had lived in Massachusetts Bay towns before arriving in the towns of Sandwich, Yarmouth, and Barnstable (**Kittredge 1987**:51; **Swift 1975**:81 [1884]).

In 1691, the Plymouth and Massachusetts Bay Colonies were united into the "Province of the Massachusetts Bay." After its extinction as an independent political entity, Plymouth Colony sometimes has been referred to as the "Old Colony."

Although they are often linked to the Cape for study purposes, Martha's Vineyard, the Elizabeth Islands, and Nantucket were never a part of the Plymouth Colony. They were under the jurisdiction of New York until 1692, when they were transferred to the control of Massachusetts. In 1695 they became Dukes and Nantucket Counties (**Loparto and Steinitz 1987**:78).

Barnstable County, which includes the Lower Cape, was created in 1685 (along with Plymouth and Bristol Counties) for the better administration of the affairs of Plymouth Colony (**Kittredge 1987**:95-96). The Lower Cape today consists of the towns of Chatham, Orleans, Eastham, Wellfleet, Truro, and Provincetown. The remaining nine towns of Barnstable County are Bourne, Sandwich, Falmouth, Mashpee, Barnstable, Yarmouth, Dennis, Brewster, and Harwich.

The Town and Land in New England. When considering the settlement of towns, one should note that today every part of the Commonwealth of Massachusetts is within the boundaries of a town or city. Therefore, to speak of a parcel of land as being within a certain town does not necessarily imply that the area has been intensively settled.

Land in the New World was claimed by the King of England on the basis of "discovery" by the Cabots and "non-use" by Native Americans. The sovereign then granted a charter to a company that could settle the land. Plymouth Colony, as is discussed below, was legitimatized by the patent it received from the Council for New England in 1630; Massachusetts Bay Colony received its own charter from King Charles I, under the fairly liberal terms of Kentish land law. "Unoccupied" (i.e., by Europeans) and unincorporated lands were granted by a colony (or later by the "Province of the Massachusetts Bay") to individuals.

Some claim to the land by Native Americans was recognized by the English. Europeans who received land grants had to purchase the property from Native Americans. Concepts of land ownership, however, differed between Europeans and Native Americans. Cronon illustrates some of the consequences of these differences in the following passage:

1629
Massachusetts Bay Company chartered;
Endicott Governor of Massachusetts Bay

1630
Bradford begins *History of Plimoth Plantation* (published in 1856);
after landing at Salem and Charlestown, Winthrop's company joins Blackstone at Shawmut, establishing Boston;
other towns created are Watertown, Roxbury, Dorchester, Medford, and Saugus;
Winthrop Governor of Massachusetts Bay;
English population of New England doubled by immigration;
"Great Migration of 1630-40" to Massachusetts Bay begins;
Winthrop begins *The History of New England* (published in 1790)

1633
Dutch build fort at Hartford, Connecticut;
English settle at Windsor and Wethersfield, Connecticut;
E. Winslow Governor of Plymouth

1634
Each town in Massachusetts Bay begins to elect own representatives to General Court;
Prence Governor of Plymouth;
Dudley Governor of Massachusetts Bay

1635
Bradford Governor of Plymouth;
Haynes Governor of Massachusetts Bay

1636
Plymouth Colony adopts system of representative government;
Williams establishes Providence Plantation;
Harvard College founded;
E. Winslow Governor of Plymouth;
Vane Governor of Massachusetts Bay

1637
Pequot War;
Bradford Governor of Plymouth;
Winthrop Governor of Massachusetts Bay

1638
Sandwich settled by Plymouth Colony;
Barnstable first mentioned in Plymouth records;
New Haven Colony established;
Prence Governor of Plymouth

Many of the earliest English settlers of Cape Cod, however, had lived in Massachusetts Bay towns before arriving in the towns of Sandwich, Yarmouth, and Barnstable.

1639
Yarmouth first mentioned in Plymouth records as "Mattacheeset";
Orders of Connecticut written;
Bradford Governor of Plymouth

1640
Dudley Governor of Massachusetts Bay

1641
Purchasers of Plymouth surrender charter to whole body of freemen;
Massachusetts, interpreting its claim to land three miles north of the Merrimack to mean the source of the river, absorbs New Hampshire;
Bellingham Governor of Massachusetts Bay

1642
Outbreak of the English Civil War;
Winthrop Governor of Massachusetts Bay

1643
A confederation of Massachusetts Bay, Plymouth, Connecticut, and New Haven colonies formed, called the United Colonies of New England

1644
Plymouth settlers occupy the Nauset Grant (Eastham);
Colony of Rhode Island chartered, with religious freedom granted;
E. Winslow Governor of Plymouth;
Endicott Governor of Massachusetts Bay

1645
Bradford Governor of Plymouth;
Dudley Governor of Massachusetts Bay

1646
Nauset (Eastham) established as a township;
Eliot begins preaching to Native Americans of Massachusetts;
Winthrop Governor of Massachusetts Bay

1647
Rhode Island General Assembly writes constitution with separation between church and state

1649
Puritan Commonwealth (1649-1660) in England;
Endicott Governor of Massachusetts Bay

> ...Indians, at least in the beginning, thought they were selling one thing [usufruct] and the English thought they were buying another [title in fee simple], it was possible for an Indian village to convey what it regarded as identical and nonexclusive usufruct rights to several different English purchasers. Alternatively, several different Indian groups might sell to English ones rights to the same tract of land (**Cronon 1983**:70).

These different concepts and practices led to misunderstandings between Native Americans and Europeans, and ultimately to attempts by colonial governments to regulate land transactions between the groups.

Land purchases were followed by the creation of towns. Plymouth Colony established several towns on the Cape and in today's Plymouth, Bristol, and Barnstable counties. However, neither the Plymouth Colony nor the Massachusetts Bay Colony in the seventeenth century had the authority to create towns or corporations, and, after the Stuart Restoration in 1660, questions were raised about the validity of town incorporations.

As towns grew, they subdivided their common lands, leading eventually to the formation of new towns. In the Massachusetts Bay Colony (and on Cape Cod, after the merging of Plymouth Colony into Massachusetts), when new settlements arose within the boundaries of a township, portions of that town could be "set off" as a precinct or parish, with the responsibility for maintaining its own school and church. Later it could become a district; this was a self-governing minor civil division that did not have its own elected representative in the General Court (legislature) of Massachusetts. Districts eventually became towns. Except for Mashpee, a Native American community on the Cape, the process of town creation might be delayed but was predictable. With the onset of the American Revolution, the General Act of 1775 transformed all existing districts into towns, but it did not affect either precincts or plantations.

Within a town there may be several communities or villages, which are not corporate political bodies in Massachusetts. Occasionally, the name of a village is as significant (or more so) than the name of the town in which it is situated (e.g., Hyannis is a village within the town of Barnstable). When social distinctions within a community are added to the mixture, the politics of town government can become extremely complex. How town government functioned in New England is a major theme in early American history.

Chronology

Contact Period (to 1620). Among the reported Contact-Period Native American sites are those located in Chatham (Mattaquason Purchase site, 19-BN-12), Orleans (Peck site, 19-BN-214; Namequoit Point site, 19-BN-215; and Hayward's Portanimicutt site, 19-BN-275), Eastham (Hemenway site, 19-BN-193), Wellfleet (Indian Neck Ossuary site, 19-BN-387), and Truro (Railroad site, 19-BN-144; Corn Hill site, 19-BN-147).

Except for possible but undocumented voyages by Norsemen or fishermen blown off course, no Europeans visited New England before John Cabot sailed by in 1498.

Except for possible but undocumented voyages by Norsemen or fishermen blown off course, no Europeans visited New England before John Cabot sailed by in 1498. Giovanni de Verrazano explored Narragansett Bay in 1524; he called Cape Cod "C. della Bussa" (**De Costa 1881**:49). The next year, a Spanish sailor traveled along the New England coast, mapped it, and named it for himself: "Tierra de Esteban Gomez" (**Dillon 1975**:133). Other sixteenth-century cartographers called it "c.d. arenas" (1527), "Capo de aracefe" ["Reef Cape"] (1542), "Cabo d. Malabrigo" ["Cape Bad Shelter"] (1542), "Cabo Bajo," "C. de Lexus" (1569), "C. Baixo" (1597), and Cabo de Baxos (**DeCosta 1881**:49-59).

In the early seventeenth century, European explorers such as Bartholomew Gosnold, Martin Pring, Samuel de Champlain, Adrian Block, and John Smith visited the coast of the Cape:

It was Bartholomew Gosnold who gave Cape Cod its name during a voyage in the summer of 1602. This name, however, did not appear on a published map until the 1624 map of Sir William Alexander (**De Costa 1881**:58). A report of Gosnold's voyage was written by John Brereton and included this account of landing on the Cape.

> [We] went ashore, being a white sandie and very bolde shore; and marching all that afternoon with our muskets on our necks, on the highest hilles which we saw (the weather was very hot) at length we perceived this headland to be a parcell of the maine...we espied an Indian, a yong man, of proper stature, and of a pleasing countenance; and after some familiaritie with him, we left him at the sea side, and returned to our ship, where, in fiue or sixe houres absence, we had pestered our ship so with Cod fish, that we threw numbers of them ouer-boord againe...(**Brereton 1905**:35-36 [1602]).

Martin Pring, sent out by Bristol merchants, sailed into Cape Cod Bay in 1603 and collected sassafras at Plymouth (**Pring 1906 [1603]**).

Samuel de Champlain explored the New England coast with Sieur de Monts from a base in what is now Nova Scotia, and was the first to map Cape Cod accurately (**Benes 1982**:3). To French sailors the bars off Chatham were aptly called "Mallebarre." Cap Blanc is the name he gave the Cape because "it consisted of sands and downs which had a white appearance." Cape Cod Bay he found "very safe, provided the land be not approached nearer than a good league." Wellfleet Harbor was named Ste. Suzanne du Cap Blanc. In 1605 he described the coast as being:

> rather high, and consists of sand, which is very conspicuous as one comes from the sea...There is a large extent of open country along the shore before reaching the woods, which are very attractive and beautiful (**Champlain 1912**:1:123 [1605]).

Champlain also visited Nauset Harbor. His report can be found in several editions of his works; the one that follows is from **Levermore** (1912:1:123-129 [1605]).

> ...we found a very dangerous harbor in consequence of the shoals and banks, where we saw breakers in all directions. It was almost low tide when we entered, and there were only four feet of water in the northern passage; at high tide there are two fathoms. After we had entered, we found the place very spacious, being perhaps three or four leagues in circuit, entirely surrounded by little houses, around each of which there was as much land as the occupant needed for his support. A small river enters here, which is very pretty, in which at low tide there are some three and a half feet of water. There are also two or three brooks bordered by meadows. It would be a very fine place, if the harbor were good. I took the altitude, and found the latitude 42 [degrees], and the deflection of the magnetic needle is 18 [degrees] 40 [minutes]. Many savages, men and women, visited us, and ran up on all sides dancing. We named this place Port de Mallebarre.

He continued with an account of both friendly and hostile encounters with the inhabitants, and a description of the Native Americans and their settlement (Figure 14). Champlain provided his opinions on the Native Americans, as well as information on the wildlife of the region.

1650
Dudley Governor of Massachusetts Bay;
estimated population: Plymouth-1,566, Massachusetts Bay-14,037

1651
Nauset renamed "Eastham";
Navigation Acts first passed to keep Dutch out of English colonies;
Endicott Governor of Massachusetts Bay

1652
General Court of Massachusetts Bay declares Maine a part of Massachusetts;
first Anglo-Dutch war (1652-1654) begins, Plymouth towns build fortifications

1654
Bellingham Governor of Massachusetts Bay

1655
Endicott Governor of Massachusetts Bay

1657
Prence Governor of Plymouth

1658
Quakers establish meeting on Cape Cod (Sandwich)

1660
Billingsgate (Wellfleet) settled; because of persecution in Sandwich, Quakers establish new settlement on the Cape (Falmouth);
monarchy restored in England;
estimated population: Plymouth-1,980, Massachusetts Bay-20,082

1661
Massasoit dies;
Philip becomes sachem of the Wampanoags

1662
Colony of Connecticut chartered;

1663
Colony of Rhode Island chartered;
Staple Act requires that crops grown in colonies be sent to England instead of directly to other countries;

1664
Second Anglo-Dutch War (1664-1667);
English capture Dutch settlements

It was Bartholomew Gosnold who gave Cape Cod its name during a voyage in the summer of 1602.

1665
Nickerson buys land in Chatham from Native Americans;
Bellingham Governor of Massachusetts Bay

1670
Estimated population: Plymouth-5,333, Massachusetts Bay-30,000

1672
Third Anglo-Dutch War (1672-1674);
Leverett Governor of Massachusetts Bay

1673
first English revenue officials appointed for the colonies;
J. Winslow Governor of Plymouth

1674
187 "Praying Indians" reportedly live on the Lower Cape

1675
King Philip's War begins;
New England Confederation declares war;
fighting in Swansea and Mendon;
Bloody Brook Massacre in Deerfield

1676
Philip killed, war ends

1679
Nickerson's land in Chatham incorporated as the "Constablewick of Manomoit" or "Monomoyick";
New Hampshire separated from Massachusetts, creating a royal colony;
Bradstreet Governor of Massachusetts Bay

1680
Estimated population: Plymouth-6,379, Massachusetts Bay-39,752

1684
Government of Massachusetts Bay dissolved

1685
115 "Praying Indians" reportedly live in Chatham;
King Charles II succeeded by King James II;
Barnstable, Bristol, and Plymouth Counties created by Plymouth Colony

Adrian Block sailed from New Amsterdam in 1613 to claim the Cape for the Dutch. The name "Staten hoeck" appears by Cape Cod on Dutch maps of 1614 and 1635 (**DeCosta 1881**:57; **Benes 1982**:103).

Despite this claim, John Smith arrived a year later, giving names to Plymouth, Massachusetts, and New England. Cape Cod he called "Cape James"; Cape Cod Bay was "Stuards Bay"; and Provincetown Harbor was named "Milford Haven" (**Goodwin 1920**:facing 151). He described Cape Cod as:

> onely a headland of high hils of sand, overgrowne with shrubbie pines, hurts, and such trash; but an excellent harbor for all weathers. This Cape is made by the maine Sea on the one side, and a great Bay on the other in forme of a sickle; on it doth inhabit the people of Pawmet; and in the bottom of the Bay, the people of Chawum. Towards the South and South west of this Cape, is found a long and dangerous shoale of sands and rocks (**J. Smith 1905**:242-243 [1614]).

Although he never returned to New England, Smith was an advocate for English settlement there (**Dillon 1975**:134-135).

Among the Europeans to reach New England in the first two decades of the seventeenth century was Thomas Hunt. Hunt not only gathered codfish but also kidnapped and enslaved Native Americans, including Tisquantum, or Squanto, at Patuxet (what is now Plymouth) (**Salisbury 1981**). A moving account of an old woman whose sons had been kidnapped by Hunt is found in *Mourt's Relation* (**Heath 1963**:70 [1622]). These kidnappings caused some hostility towards the English among local Native Americans.

Before any families moved from Plymouth to the Lower Cape, "irresponsible fishermen and traders" may have inhabited the Cape (**Edwards 1918**:144). If there were Europeans living on the Lower Cape before the settlement by the Plymouth colonists, they are not well-documented.

In 1620, the Pilgrims landed at what is now Provincetown and explored a portion of the Lower Cape. *Mourt's Relation* includes an account of Cape Cod.

> And upon the 11th of November [Old Style] we came to an anchor in the bay, which is a good harbor and pleasant bay, circled round, except in the entrance which is about four miles over from land to land, compassed about to the very sea with oaks, pines, juniper, sassafras, and other sweet wood. It is a harbor wherein a thousand sail of ships may safely ride. There we relieved ourselves with wood and water, and refreshed our people, while our shallop was fitted to coast the bay, to search for a habitation (**Heath 1963**:16 [1622]).

After exploring the Cape, and encountering people who were already living there, the Pilgrims weighed the advantages and disadvantages of settling on the Lower Cape (**Heath 1963**:29-31 [1622]). They decided to go across the bay to Plymouth. The earliest history of the English occupation of the Lower Cape is thus a part of the history of Plymouth and the Pilgrims. Sites associated with the Pilgrims are shown in Figure 51.

Settlement Period (1620-1675). Plymouth and Massachusetts Bay had different roots. Although they are often confused by the public, the Pilgrims of Plymouth were distinct from the Puritans of Massachusetts Bay. They held in common ideas on the necessity of "purging" elaborate rituals reminiscent of Roman Catholicism, and both were opposed by "High Church" Anglicans. The Pilgrims, unlike the Puritans, were Separatists (sometimes called "Brownists") who did not wish to remain within the

Church of England. Puritans disagreed with the Separatists over church discipline, and they remained in the national church. They did this not only as a matter of religious principle but also as a political necessity; adherence to the Church of England was required for participation in parliamentary politics during the reign of Charles I. Conflicts did arise in England and New England between Separatists and Puritans.

The religious world of the seventeenth century is a complex and rich one that has been the subject of much historical debate. A discussion of Puritans and Separatists is found in **Goodwin** (1920:7-16) and **Brewster** (1970:40-53). The bibliographic essay in **Morgan** (1958:210) provides sources on the distinctions within Puritanism and the increasing divisions between American and British forms. Puritan thought is addressed in **Miller and Johnson** (1938) and **Morgan** (1958).

Having said this, it is possible to make even finer distinctions. The term "Pilgrim" apparently was not used to refer to the settlers of Plymouth until the middle of the nineteenth century. Even in the late nineteenth century, the name "Forefathers" was commonly used to speak of the passengers on the first ships to arrive in Plymouth. As for the English settlers of Plymouth, they distinguished between "Saints" and "Strangers"; the former were members of the Leyden congregation, and the latter were not members. Indeed, the "Strangers" were not Separatists but remained loyal to the Church of England; some of the "Strangers" were in the Puritan wing of the Church, but many actually were High Church adherents. To complicate matters further, there were hired men and indentured servants in the company of settlers. Separatists were, in fact, outnumbered by non-Separatists on the *Mayflower* and subsequent ships in the 1620s (**Heath 1963**:vii-viii [1622]; **Willison 1945**:129-130, 454).

When the Pilgrims arrived in New England, as the "Northern Parts of Virginia" had recently been re-named, they faced a legal problem. The "patent they had [was] for Virginia and not for New England, which belonged to another government (as Bradford put it), with which the Virginia Company had nothing to do." The patent was, therefore, invalid. This situation was remedied, at least in the Pilgrims' eyes, by the Mayflower Compact, which "might be as firm as any patent, and in some respects more sure" (**Bradford 1981**:83 [1856]). Subsequent patents issued in 1621 and 1629/30 by the Council for New England did provide a legal basis for the settlement after it was established (**Stratton 1986**:141, 393-403).

The Pilgrims also had an agreement with London merchants with whom they planned to trade (**Bradford 1981**:37-48 [1856]). At the end of seven years, there was to be a division of property held in common by "merchant adventurers" in London and the "planters" in Plymouth. In 1626, the planters negotiated with the merchants to buy out their shares; the term "Purchasers" refers to the heads of households and unmarried adult males who took on the responsibility of paying the London merchants. Since the purchasers had all come on the first ships to arrive at Plymouth (the *Mayflower* and the *Fortune*), they were also called the "Old Comers," to distinguish them from the later settlers or "New Comers" (**Bradford 1981**:205-218 [1856]).

Seeking trade, the Pilgrims expanded from Plymouth. As the Dutch had done elsewhere in southern New England, the Plymouth colonists in 1627 established a trading post at Aptuxet, a Wampanoag settlement. It was located on the Monument River, in today's town of Bourne, near Buzzards Bay; the name "Monument" is a corruption of Manomet, not to be confused with the promontory south of Plymouth. Its position enabled traders to avoid dangerous shoals off the Cape. Here trading was done with both the Native Americans and the Dutch from the New Netherlands (**Bradford 1981**:214-216 [1856]; **Loparto and Steinitz 1987**:66). This was not a permanent settlement or community, but it was the first presence of Plymouth Colony on the Cape.

In 1630, the patent granted by the Council for New England gave the Plymouth Colony a legal claim to Cape Cod (**Kittredge 1987**:52). The towns of Sandwich

1686
Dominion of New England formed from New England colonies, and later New York and the Jerseys; Sir Edmund Andros appointed Governor in Chief

1688
Glorious Revolution in England

1689
Revolt in Boston;
English *Bill of Rights*;
Dominion of New England dissolved;
King William's War (1689-1697), called the War of the League of Augsburg in Europe;
Hinckley Governor of Plymouth;
Bradstreet Governor of Massachusetts Bay

1690
Estimated population: Plymouth-7,424, Massachusetts Bay-49,504

1691
Plymouth Colony absorbed into Massachusetts Bay;
Massachusetts finishes buying out the proprietors of Maine

1692
Salem witch trials;
Phips Governor

1694
Harwich incorporated from land called "Satuckett";
Falmouth first mentioned in Plymouth records;
Stoughton acting Governor

1695
Dukes and Nantucket Counties created as part of Massachusetts

1696
Navigation Act increases power of customs officials in America and requires colonial governors to enforce trade laws

1697
A single governor presides over Massachusetts and New York

1698
Pirates off the New England coast;
Captain Kidd arrested in Boston

1699
Coote Governor

1700
First meeting house in Chatham;
Stoughton acting Governor;
estimated population of all of Massachusetts-55,941

As for the English settlers of Plymouth they distinguished between "Saints" and "Strangers"; the former were members of the Leyden congregation, and the latter were not members.

1701
Massachusetts governed by the Executive Council

1702
Queen Anne's War (1702-1713), called the War of the Spanish Succession in Europe;
Dudley Governor

1709
Truro established from common land called "Pawmett" and incorporated as "Truroe"

1710
Estimated population of Massachusetts: 62,390

1711
First cod fishing station in Chatham started

1712
Village or district of Manomoit established as Chatham; common lands of Chatham divided;
first sperm whale caught and taken to Nantucket, found to contain high- quality oil for lamps;
from 1712 to 1730 longer whaling voyages are undertaken;
Wellfleet builds meetinghouse

1713
First schooner built in America constructed in Gloucester

1715
Massachusetts governed by the Executive Council;
Tailer acting Governor

1716
First lighthouse built in America constructed in Boston harbor;
Shute Governor

1718
Orleans made a separate parish of the town of Eastham

1720
County road from Harwich to Truro laid out;
estimated population of Massachusetts-91,008

1721
Smallpox epidemic in New England

1722
Dummer acting Governor

1723
Billingsgate (Wellfleet) becomes the northern parish or precinct of Eastham

(1637, incorporated 1638), Barnstable (1638, incorporated 1639), and Yarmouth ["Mattacheeset"] (1639) were established, with some of the first inhabitants coming from Massachusetts Bay towns (**Shurtleff 1855-1861**:I:80, 108, XI:38; **Commonwealth of Massachusetts 1909a**:811, 874, 897).

The Purchasers surrendered the charter to the whole body of freemen in 1641. In doing so, the Purchasers reserved for themselves tracts of land on the Cape that had not yet been settled by Europeans (**Paine 1937**:25-28). One of these tracts was "Nauset," which included much of today's Eastham (**Paine 1937**:28; **Stratton 1986**:75-76).

This land was familiar to the people of Plymouth. They had visited "the Kingdome of Nawset" to reclaim a boy who had wandered too far. Friendly relations were established with the local leader, Aspinet, with whom they traded for the food they needed (**Willison 1945**:213).

In the 1640s, Plymouth faced a shortage of arable land, as areas immediately inland from the settlement were rugged and not suited for cultivation. One solution was for the original settlement to divide itself, as had happened with the establishment of Duxbury ("Ducksburrow") in 1637 and Marshfield ("Green's Harbor" or "Rexhame") in 1641 (**Shurtleff 1855-1861**:I:62, XI:37). The alternative was moving as a body to another, more spacious location. In 1643 a committee considered making the move to Nauset, relocating the church and seat of government there (**Deyo 1890**:720).

After looking at the issue twice, it was decided that:

> this place [i.e., Nauset] was about fifty miles from hence, and at an outside of the country remote from all society; also that it would prove so strait as it would not be competent to receive the whole body, much less be capable of any addition or increase; so as, at least in a short time, they should be worse there than they are now here [Plymouth] (**Bradford 1981**:370 [1856]).

Although the "whole body" of Plymouth did not move to the Lower Cape, a portion of it did, led by Thomas Prence (or Prince) Jr., John Doane, Edward Bangs, and others. Thus Nauset came "out of the bowels" of the Plymouth church, that is, it was established by the original settlers of Plymouth and their offspring (**Bradford 1981**:369-370 [1856]). In this respect, Nauset differed from most other Plymouth Colony towns, which were settled by New Comers.

In 1644, residents of Plymouth negotiated with George and Mattaquason, the sachems of Nauset and Monomoyick respectively, for the purchase of the land in the Nauset Grant (**Baylies 1866**:I:219). This parcel extended for approximately 24 kilometers (15 miles), from Pleasant Bay to Truro. Settlement by the English occurred first in the vicinity of Town Cove in what is now Orleans and Eastham.

No firm census data exist from the seventeenth century, but estimates and population reconstitutions can be made based on historical documents. Nauset's English population in 1659 may have been 209, and by 1703 may have reached 948 (**Dickey 1978**; **Rockmore 1979**). The Native American population may have been 1,200 on the Lower Cape prior to the 1617-1619 epidemics; this number could have been reduced to 500 by 1621, although this is disputed by some researchers who question the effects of the early seventeenth-century epidemics on Cape Cod (**Dunford 1993**: personal communication; **MHC 1984c**:3; **Mooney 1928**:4; **Mooney and Thomas 1910**:40-41).

The missionary **Gookin** (1966:196-197 [1792]) reported in 1674 that there were three congregations of Christian Native Americans on the Lower Cape with the following populations:
Meeshawn (Provincetown) "and" Punonakanit (South Wellfleet) 72
Potanumquut (Portanimicut) (south Eastham) "or" Nawsett (north Eastham) 44
Manamoyik (Chatham) 71

Other settlements of "Praying Indians" were located elsewhere on the Cape at this time.

Colonial Period (1675-1775). European settlement during this period was characterized by dispersed farms. As colonists purchased and occupied land, Native Americans were pushed south to reservation lands at Portanimicut (Potanumquut). However, this land was divided among the colonists in 1712. By 1765, there were only 16 Native Americans listed in the census (**Benton 1905**:92-93).

English settlers grew native corn, and for a while also raised European wheat, until blight and caterpillars destroyed it. Both corn and wheat required mills for processing. Since there are few sources of water power on the Cape, windmills were erected. Windmills are among the archeological sites from this and subsequent periods shown on Figure 52; standing structures are indicated on Figure 53.

Farmland soon became depleted, causing settlers to turn to animal husbandry and limited maritime pursuits. The subsistence pattern shifted from agriculture with some fishing to maritime activity with limited seasonal farming.

Beached whales were used for oil by Native Americans and English settlers alike. Whaling began as in-shore whaling, which involved driving blackfish into shallow waters to be stranded. By the early eighteenth century, whales were entering Cape Cod Bay less frequently, and by 1737, Provincetown was sending whaling vessels into deeper waters, and becoming the early center of deep-sea whaling.

Chatham was the principal fishing port on the Lower Cape before the American Revolution. Orleans was oriented more towards agriculture, even though some cod and herring were caught. Eastham residents gathered shellfish, and caught some fish. Wellfleet, with a good harbor on the bay side, became the whaling center of the Lower Cape by the end of the period. Truro was also a fishing and whaling town. Provincetown did not, however, maintain a large population; it was actually abandoned during the Revolution.

Federal Period (1775-1830). In the early part of this period, maritime activities were severely curtailed by the war. In addition, oysters—a major resource for Wellfleet—disappeared in 1775. Oystermen planted new seed oysters to aid the failing beds.

After the Revolution, many people moved to the Lower Cape, settling along the seashore in a dispersed pattern. Maritime resources such as harbors and tidal creeks were important factors in settlement patterns. Maps of the area from this period are illustrated in Figures 16-21.

Fishing recovered after the Revolution. It was, however, subject to international events, depressions, and changes in laws and tariffs. The War of 1812 crippled local maritime industries once again. Whaling ended during the Revolution, and was not restored on the Lower Cape until the 1840s.

Saltmaking, an enterprise associated with the preservation of fish, increased on the Lower Cape in this period. Its growth was encouraged by developments in solar evaporation and the imposition of a tariff on imported salt.

Agriculture intensified during wartime, since men who were unable to go to sea turned to farming. The intensification of food production placed additional strains on the environment and the soil's agricultural potential.

Early Industrial Period (1830-1870). This period witnessed both rapid growths and rapid declines among a variety of industrial and agricultural activities. One agricultural activity that boomed during this period was sheep and wool production. Chatham, Orleans, and Truro were leaders on the Lower Cape. The peak of this industry was around 1837.

1727
Precinct of Cape Cod incorporated as the town of Provincetown

1728
Burret Governor

1730
New England whalers travel to Brazil and the Arctic;
Tailer acting Governor;
Belcher Governor;
estimated population of Massachusetts-114,116

1733
Molasses Act places prohibitive tariff on rum, molasses, and sugar imported from foreign colonies into British colonies;
another meetinghouse built in Wellfleet

1734
Great Awakening (1734-1736) begins with the preaching of Edwards

1739
Act to prohibit grazing in the Province Lands

1740
Massachusetts Land Bank vetoed by Britain, financial losses to Massachusetts investors;
divisions among New England Congregationalists regarding the Great Awakening;
estimated population of Massachusetts-151,613

1741
Shirley Governor

1744
King George's War (1744-1748), called the War of the Austrian Succession in Europe

1749
Phips acting Governor

1750
Estimated population of Massachusetts-188,000

1754
French and Indian War (1754-1763), called the Seven Years' War in Europe

1755
Acadians expelled by the British, some ("French Neutrals") settle in New England, others in Louisiana

1757
Massachusetts governed by the Executive Council

1760
Eastham most populous town on Cape Cod;
New Hampshire makes land grants in Vermont;
Berkshire County created;
Hutchinson acting Governor;
Bernard arrives and becomes Governor;
estimated population of Massachusetts-202,600

1763
Treaty of Paris ends French and Indian War, ends French power in North America;
District of Wellfleet set off from Eastham;
district of Mashpee established

1765
Stamp Act goes into effect;
Stamp Act Congress;
wind-powered grist mill built in Wellfleet on Mill Hill;
population: Massachusetts-238,195, **Barnstable County-12,127, Lower Cape-2,935**

1766
Stamp Act repealed

1767
Townshend Acts passed

1768
Quartering Act passed, British troops stationed in Boston

1769
British ship *Liberty* burned by protestors in Newport, Rhode Island;
Hutchinson acting Governor

1770
Green Mountain Boys formed to defend property rights in Vermont;
Boston Massacre;
Townshend Acts repealed, except for levy on tea;
estimated population of Massachusetts-235,308

1772
British revenue ship *Gaspe* burned by protestors in Providence, Rhode Island;
S. Adams suggests a Committee of Correspondence be formed in Boston;
part of Harwich annexed to Eastham

1773
Boston Tea Party;
Eastham appoints a Committee of Correspondence

Egg and poultry production grew from a minor activity to a principal agricultural enterprise. Chatham and Orleans were the foremost egg producers in Massachusetts between 1845 and 1865. Some beef and pork also were raised for market.

Saltmaking reached a high point early in this period with 388 saltworks operating in 1831. Competition from new sources and the lifting of the tariff, however, contributed to its quick decline. By the 1850s, the industry had died, and salt was imported from other sources.

Shipbuilding was another industry that Lower Cape residents attempted to establish. In Provincetown, 150 vessels were constructed, but this business declined over the next few decades. Nonmaritime industries were established, but they were minor and did not last long; each town, for example, had some boot and shoe manufacturing.

Both cod and mackerel fishing continued; on the Lower Cape, the cod catch exceeded that of mackerel between 1837 and 1865. While Wellfleet and Provincetown both began the period as important mackerel centers, the lead soon passed to Wellfleet, which specialized in the catching and processing of mackerel. Provincetown became the premier cod fishing port.

Several sets of maps in the Massachusetts Archives, as well as U.S. Coast Survey maps, span this period. Maps from 1836 (Figures 26, 27), 1841 (Figures 28-30), 1848 (Figures 31-33), 1856 (Figures 34-36), and 1868 (Figure 37) are reproduced in this report. **Walling's** (1858) map is not reproduced here because it was impossible to obtain a clear copy.

Late Industrial Period (1870-1915). The Cape as a whole saw a decline in its fishing industry in the 30 years after the Civil War. However, Provincetown had a very large cod industry; in 1885, it caught more than 16 million pounds of cod. Chatham was the second busiest fishing port on the Lower Cape in this period, but it was far behind Provincetown.

Fishing was revitalized in Provincetown by the immigration of skilled fishermen from the Cape Verde Islands and the Azores.

Fishing was revitalized in Provincetown by the immigration of skilled fishermen from the Cape Verde Islands and the Azores. Also in this period, new railroads created better access to transportation networks and urban markets for fish. Fish were preserved for transport by canning or freezing, or were shipped fresh, preserved on ice, to markets in Boston. Two canneries operated in Truro during this time, and the first fish-freezing plant opened in Provincetown in 1893.

Unlike fishing, which managed to survive, whaling was almost at an end. It was not, however, until the next period that the last whaling voyage was made. Provincetown still produced whale oil, although this industry faded with the turn of the century; by 1915, whale oil was no longer regularly processed on the Lower Cape.

Farms produced a small grain crop for human consumption. Poultry, eggs, vegetables (e.g., asparagus and turnips), fruits (e.g., strawberries and cranberries), and specialty crops became the most important agricultural products. Eastham was the most productive agricultural town on the Lower Cape in the middle of this period; it was followed by Chatham, and then Wellfleet, Truro, Orleans, and Provincetown.

The Lower Cape retained a rural atmosphere; this and the seacoast became attractions for tourists and seasonal residents. Houses for these visitors were constructed and passenger rail service made the Lower Cape more accessible to city dwellers. Both of these developments in infrastructure contributed to the growth of the tourist industry.

Maps from this period are illustrated in Figures 38-45. USGS maps (1884-1890) were first prepared during this time.

Early Modern Period (1915-1940) and After. Agriculture persisted throughout this period, as farmers continued to produce vegetables, eggs, and specialty crops. Prices were subject to variations that sometimes discouraged production, which was

the case with cranberries around World War I. By 1940, however, the rural farm population was small in all of the Lower Cape towns, and it had disappeared in Provincetown.

In this period, the "Portuguese" (a term that sometimes was used to refer without distinction to Azoreans, Cape Verdeans, and mainland Portuguese) became the dominant population group in Provincetown. They have continued to be major participants in the region's remaining fishing industry.

Population in Chatham increased steadily up to 1940; in Orleans and Eastham, the rises were smaller and less even. On the other hand, there were drops in population in Wellfleet, Truro, and Provincetown. After World War II, Chatham and Orleans had steep population increases, and the other Lower Cape towns had slower growth. Provincetown, however, had fewer year-round residents in 1960 than in 1920. These changes are illustrated in USGS maps from this period (Figures 3-12, 46-50) and population graphs (Appendix B).

Development of the Towns

Chatham

Setting. The Town of Chatham is bounded on the north by Orleans and Pleasant Bay, on the east by the Atlantic Ocean, on the south by Nantucket Sound, and on the west by Harwich (Figure 2).

Chatham has several freshwater sources, including Goose Pond, Lover's Lake, Schoolhouse Pond, and White Pond. Among the tidal rivers and creeks in town are Crow's Pond, Ryder Cove, Oyster Pond River, Stage Harbor, Mitchell River, Bucks Creek, Mill Creek, Red River, and Mill Pond (Figures 3 and 4).

Most of Chatham is covered with Harwich outwash plain deposits, which are medium to fine sands containing a few pebbles and cobbles (**Oldale 1992**; **Oldale and Barlow 1986**). The town also has Chatham kame deposits located in the southeast portion of town. These consist of pebbly to cobbly sand with pebble and cobble gravel and scattered boulders (**Oldale and Barlow 1986**). Beach, dune, swamp, and marsh areas are located along the shore; swamps and marshes are also located in interior areas. Chatham is hilly, with ridges and narrow valleys. Elevations range from 0 to about 18.3 m (60 ft) above sea level (ASL).

Early English settlers in Chatham found pine forests mixed with a few oaks; cedar trees grew in wet areas. By the turn of the nineteenth century, these forests had been almost entirely cut. Most pines and oaks growing in Chatham today are about 40 years old.

Contact Period (Before 1620). Champlain estimated that there was a Native American population of 500 to 600 in 1606 when he spent about three weeks at Stage Harbor exploring and mapping the area. An epidemic in 1616 severely reduced the population near Boston and west of Plymouth; there is not, however, a clear indication of the effect of the epidemic on the Cape. By 1622 when Governor Bradford and other Plymouth Colony settlers visited the area to trade for corn and beans, few Native Americans may have been living in Chatham (**MHC 1984a**:4). Nonetheless, since the English and the Dutch were able to buy corn from Native Americans, there must have been a sufficiently large local population to produce surplus crops for trade (**Dunford 1993**:personal communication).

Late Woodland-Period sites have been located throughout the town. Contact-Period settlement sites also may be extant. Steinitz and Loparto identify the Chatham area ("Manomoyick") as a Contact-Period local core of settlement (**Steinitz and Loparto 1987**:327).

There are no records of European settlers living in Chatham during these years.

1774
Intolerable Acts passed;
Massachusetts Government Act annuls charter and limits towns to a single annual meeting;
British close the port of Boston;
Suffolk Resolves passed by a convention of towns in Suffolk County, Massachusetts;
First Massachusetts Provincial Congress;
First Continental Congress;
Barnstable Congress of Towns held after Provincial and Continental Congresses meet, to discuss the crisis;
James Otis is moderator

1775
Battles of Lexington and Concord (Massachusetts);
Fort Ticonderoga (New York) captured by Continental forces;
Battle of Bunker Hill (Massachusetts);
Washington assumes command at Cambridge, Massachusetts;
General Act of 1775 passed by new legislature in Massachusetts, incorporating many towns;
Wellfleet incorporated by the General Act;
oysters decline in Wellfleet

1776
British evacuate Boston;
Declaration of Independence;
Newport, Rhode Island, occupied by British;
salt production by solar evaporation invented in Dennis;
population: Massachusetts-295,080, **Barnstable County-15,546, Lower Cape-5,495**

1777
Battles of Hubbardton, Bennington, and Saratoga;
warfare spreads to Middle Atlantic and Southern states;
Articles of Confederation written

1778
HMS *Somerset* goes down off Peaked Hill bars

1780
New constitution for Massachusetts adopted;
Hancock first Governor;
estimated population of Massachusetts: 268,627

1781
Battle of Yorktown, British surrender;
Articles of Confederation adopted;
slavery abolished in Massachusetts

1783
Treaty of Paris ends the American Revolution

1786
Humane Society of Massachusetts founded to aid shipwrecked mariners

1786
Shays' Rebellion (1786-1787)

1787
Constitution of the U.S.

1788
Mashpee no longer a district, with "Guardians to the Proprietors" appointed

1789
Constitution ratified;
new federal government established at New York;
Washington inaugurated;
federal government assumes responsibility for lighthouses

1790
Portanimicut reservation for Native Americans set up on border of Harwich and Brewster; population: United States-3,929,000, Massachusetts-379,000, **Barnstable County-17,354, Lower Cape-5,738**

1791
Bill of Rights;
Panic of 1791

1793
Britain and France at war, American ships seized by the British;
Dennis incorporated

1797
Orleans set off from Eastham and incorporated;
Adams inaugurated

1798
Undeclared naval war with France;
Alien, Sedition, and Naturalization Acts aimed at opponents of the Federalist administration

1800
Solar evaporation method of salt production introduced to Chatham; population: United States-5,308,000, Massachusetts-423,000, **Barnstable County-19,293; Lower Cape-6,276**

1801
Jefferson inaugurated

Settlement Period (1620-1675). In 1665 William Nickerson made the first of several land purchases in the Chatham area. Nickerson settled in Chatham with his large family, and began to sell land to other settlers in 1674. He and his family were able to raise some crops but also depended on Plymouth for some of their needs.

Colonial Period (1675-1775). Prior to its establishment as the district of "Manomoit" in 1679, Chatham came under the jurisdiction of Eastham. It was incorporated as the Town of Chatham in 1712 (**Commonwealth of Massachusetts 1909a**:822).

As the English population grew, the Native American population declined. In 1675 Richard Bourne reported that there were 71 "Praying Indians" and their families in town, but in 1685 Governor Hinckley of the Plymouth Colony reported a total of 115. By 1698 there were about 50 to 70 Native Americans in Chatham. A Native American meetinghouse was built before 1700 near the site of the East Harwich Methodist Church within the present limits of Chatham (**MHC 1984a**:8). The Provincial Census of 1765 showed a population of 678 white residents, five blacks, and no Native Americans. In 1776 there were 929 inhabitants (**Benton 1905**; **Commonwealth of Massachusetts 1909a**:822). Many of the English who settled Chatham during this period were second and third generation offspring of the original settlers of Eastham and Yarmouth.

The settlement pattern in Chatham was characterized by dispersed farms (**MHC 1984a**:8). Farmers of the Lower Cape continued to raise grain crops, but soils were being depleted and new agricultural strategies had to be developed. Settlers turned more to animal husbandry, particularly sheep raising, as early as 1700 (**MHC 1984a**:9). Maritime pursuits also increased in this period. Whaling supplied oil, and mackerel and cod fishing provided food; shellfishing provided bait for the cod fishery.

Chatham became the principal fishing port of the Lower Cape (**Kittredge 1987**:184). By 1774, 27 vessels employing 240 persons were engaged in fishing. This figure implies that all able-bodied men and boys in town were employed this way. Chatham also built the vessels in which its men sailed.

Federal Period (1775-1830). There was a tremendous growth in population during this period; the number of residents more than doubled from 929 in 1776 to 2,130 in 1830. Each decade except 1800-1810 showed large increases. The 1820s had the greatest influx, with an addition of 500 inhabitants. In 1790, the population was 1,140; in 1800, 1,351; in 1810, 1,334; in 1820, 1,630 (**Commonwealth of Massachusetts 1909a**:822).

Dispersed settlement along the shoreline continued until the turn of the century. Settlement nodes developed in the northeast at Old Harbor and in the south at Stage Harbor. Figure 16 shows the town's principal harbors and roads in 1795. In the early nineteenth century, some expensive residences were built on the north shore. By the end of the period, a village had developed north and east of Mill Pond, and the focus of local activity had shifted to the wharves of Chatham Village, near the lighthouses that were built in 1808.

Chatham's coasting trade, fishing enterprises, and related industries dominated the economy, despite the fact that maritime pursuits suffered during the American Revolution. Chatham was the only Lower Cape town with a large cod-fishing industry during this period; between 1786 and 1790, Chatham and Yarmouth had the greatest number of cod-fishing vessels in Massachusetts (**Deyo 1890**:582; **McFarland 1911**:131).

Associated with the fishing industry was salt manufacture. Salt makers introduced the solar evaporation method in Dennis in 1776, but they did not use it in Chatham until about 1800. Chatham's saltworks were concentrated on Nickersons Neck, but were also located all along the shoreline from Pleasant Bay to Red River (Figure 22).

Near the end of the period, blocks, pumps, and rollers for saltworks were made in town (**Deyo 1890**:602).

Early Industrial Period (1830-1870). The cod and mackerel fisheries' fortunes were tied not only to the waters of the Atlantic, but to the shifting position of the shore (**MHC 1984a**:14). Changes in the Nauset Beach shoreline obstructed Chatham's Old Harbor with sand bars, making passage by vessels increasingly difficult. In 1832, half of the Chatham fishing boats were sold; salt manufacture in Chatham saw its peak at that time but declined as rapidly as the fishing industry (Tables 30-34).

During the 1850s, Nauset Beach reopened, which made Old Harbor usable again. This allowed the cod and mackerel fleet to regain its former status. Isaiah Baker introduced a purse seine in 1853, an improvement on existing mackerel-catching techniques (**Kittredge 1987**:192-194; **N. Smith 1922**:66-67). During this period, Chatham specialized in mackerel; by 1875 the town ranked third in Barnstable County in this enterprise (Table 23).

Shellfishing for bait for cod fishing was the town's second largest industry, employing 77 persons in 1865. Chatham also was a center for lobstering, surpassing the other Lower Cape towns in this period (**MHC 1984a**:14). The coasting trade remained active with 17 vessels engaged in it.

The town also had several associated maritime manufacturing industries, and there were land-based industries as well. Textiles were produced after 1827, and a small boot and shoe business was operated.

Agriculture continued to decline in importance; there were fewer than 25 farmers in 1865 (**Loparto and Steinitz 1987**:118).

Affected by these fluctuations in the local economy, Chatham continued to grow, but more slowly than during the Federal Period. While there was an overall gain from 2,130 in 1830 to 2,411 in 1870, the state census of 1865 began to show the decline that would continue for decades in Chatham. In 1840 the population was 2,334; in 1850, 2,439; in 1855, 2,560; in 1860, 2,710; in 1865, 2,624; and in 1870, 2,411 (**Commonwealth of Massachusetts 1909a**:822).

Late Industrial Period (1870-1915). Chatham's population continued its decline throughout this period. In 1870 the population was 2,411; in 1875, 2,274; in 1880, 2,250; in 1885, 2,028; in 1890, 1,954; in 1895, 1,809; in 1900, 1,749; in 1905, 1,634; and in 1910 it was 1,564 (**Commonwealth of Massachusetts 1909a**:822; **U.S. Census Office 1922**). Settlement concentrations are indicated on Figure 38.

Farming became even less important to the local economy. Deyo stated that most food had to be imported from Connecticut, Rhode Island, and Boston. He attributed the decline of agriculture to the effects of drifting sand on farmland (**Deyo 1890**). Nonetheless, Chatham ranked second among the Lower Cape towns for the value of its agricultural products in 1895 (**Commonwealth of Massachusetts 1899b**). In that year, the most profitable crop was fruits and berries, which accounted for $13,500 out of the approximate total crop value of $49,000.

Maritime enterprises continued to be the primary economic endeavor. The cod and mackerel industry varied in productivity. Catches began declining in the 1880s; by 1887 the mackerel had all but disappeared. Lobstering helped to ease the economic problems of the fishing industry, and by the end of the period, Chatham was also harvesting oysters.

Chatham was connected to the railroad via a branch of the Cape Cod Railroad in 1887. This provided a boon to the town in helping it to attract summer visitors, as the tourist industry began to grow during this period.

Early Modern Period (1915-1940) and After. Town growth recovered during this period. In 1920 the population was 1,737; in 1930, it was 1,931; by the end of the

1802
42 saltworks on Lower Cape

1803
Suppression of the Barbary Coast pirates;
Louisiana Purchase;
town of Brewster incorporated

1807
Congress passes Embargo Act, damaging shipping but aiding local manufacturing

1808
Two wooden lighthouses built at Chatham village

1809
Nonintercourse Act continues to disrupt shipping

1810
Population: United States-7,240,000, Massachusetts-472,000, **Barnstable County-22,211, Lower Cape-6,880**

1812
War of 1812 (1812-1814)

1813
Part of Truro annexed to Provincetown

1814
British invasion stopped at Battle of Orleans;
Rock Harbor landing built in Orleans;
Hartford Convention on possible secession by New England held;
Lowell and his associates operate cotton mill in Waltham, Massachusetts;
Wellfleet woolen and cotton factory incorporated but does not operate

1816
Methodist Society formed in Chatham;
Methodist church built in Wellfleet;
epidemic in region and on Cape;
"year without a summer" (unseasonably cold weather) prompts emigration from New England;
Race Point lighthouse built;
the value of sanding cranberry bogs discovered in Dennis

1818
Treaty between U.S. and Britain on fishing rights;
Long Point fishing settlement begun in Provincetown

1819
Panic of 1819;
Methodists hold camp meetings at South Wellfleet and at Bound Brook (1819-1825)

1820
Portanimicut reservation land sold;
Reformed Methodist Society established in Orleans;
population: United States-9,638,453, Massachusetts-523,287, **Barnstable County-24,026, Lower Cape-7,704**

1821
Methodist church built in Eastham;
salt manufacturing company of Billingsgate Island incorporated but does not operate

1822
Universalist Society formed in Chatham;
Billingsgate lighthouse built

1823
Monroe Doctrine proclaimed;
Monomoy Point lighthouse built

1824
Baptist Society formed in Chatham;
first strike in American factory, in Pawtucket, Rhode Island

1825
Erie Canal opened, making western grain available in competition with New England grain, and giving New York an advantage in trade over New England as well;
Quincy Market opens as a commercial center in Boston;
three gales hit the Cape, destroying vessels

1826
Baptist Society formed in Orleans;
first wooden piling wharf built in Provincetown;
Long Point lighthouse built

1828
Methodist camp meetings held in Eastham

1829
Part of Truro annexed to Provincetown;
new Congregational church built in Eastham;
new Congregational church built in Wellfleet

By 1666 English colonists were looking for more land, and Native Americans were removed to a reservation at Portanimicut...

period in 1940, the population had climbed to 2,136. After World War II, population continued to rise. In 1950 the population was 2,457; in 1960, 3,273; in 1980, 6,071 (**U.S. Census Office 1922, 1952**; **Wilkie and Tager 1991**:140).

A new form of land use in town was a U.S. Naval Air Station built during World War I. Dirigible and seaplane hangars and landing areas were constructed at Eastward Point on Nickersons Neck. After the war, however, these structures were abandoned.

The years between the world wars saw further changes in the development of the town. Seasonal residents and tourists altered the economy and land use patterns. Resort features such as a golf course, a beach and tennis club, accommodations for travelers, and new and improved highways were built. These developments may be seen on the 1943 USGS map (Figure 46). By 1925, one-third of the houses in Chatham were owned by persons who did not live year-round in the town. These trends continued in the post-World War II period.

Orleans

Setting. The Town of Orleans is bounded on the north by Eastham, on the east by the Atlantic Ocean, on the south by Chatham, and on the west by Harwich and Brewster (Figure 2).

The town has several freshwater ponds and lakes, including Baker Pond, Pilgrim Lake, and Crystal Lake, as well as creeks such as Rock Harbor Creek, Little Namskaket Creek, Namskaket Creek, and Namequoit River. Saltwater outlets include Town Cove, Nauset Harbor, Little Pleasant Bay, and Pleasant Bay. Salt marshes are located on creeks along the Cape Cod Bay shore, in the Pleasant Bay area, and in Nauset Marsh (Figures 5 and 6).

Soils are gravelly sand, pebble to cobble gravel, clayey silt, with till and boulders (**Oldale and Barlow 1986**). Orleans contains several areas of distinct surficial geological deposits. The Harwich outwash plain deposits cover most of the town west of Pleasant Bay. These sediments are medium to very coarse sand, and pebble to cobble gravel, with till and large boulders. Dune and beach deposits are located on both the Atlantic and bay shores. Additionally, there are fine-grained lake and lake bottom deposits between Namskaket and Rock Harbor creeks. Elevations range from 0 to 15 m (50 ft) ASL.

Seventeenth-century Orleans probably was forested with oak and pine that was cut for use as fuel and shipbuilding timber. At present, oak, pine, and scrub vegetation is about 40 years old.

Contact Period (Before 1620) and Settlement Period (1620-1675). The MHC identifies Orleans as being heavily populated during the Late Woodland Period in the following areas: Town Cove, Weeset, Tonset, Nauset Heights, and the necks and shores along Pleasant Bay (**MHC 1984c**:4).

When Plymouth Colony granted permission to seven men and their families in 1644 to settle on Lower Cape Cod, six of the seven Nauset Plantation proprietors settled in Eastham; the other, Nicholas Snow, chose what is now Orleans. Further settlement was slow, but did occur around Town Cove and in East Orleans. By 1666 English colonists were looking for more land, and Native Americans were removed to a reservation at Portanimicut (also spelled Portanomicut, Potanumaquat, and Potonumecot). The actual process of establishing Portanimicut began earlier, in transactions that began in 1644 (**Paine 1937**:29-30).

Colonial Period (1675-1775). A meetinghouse for native Christian converts was built in 1685. However, Orleans' indigenous population dwindled during the next decades and nearly disappeared during this period. In 1712, reservation lands were divided (**MHC 1984c**:8).

Orleans was part of Eastham during this period. However, agricultural settlement had dispersed well beyond the original Eastham town center. Residents of what is now Orleans petitioned to become a separate parish when town funds were to be used to built a church in Eastham in 1718 (**MHC 1984c**). Not until 1723 did the Town Cove and Pleasant Bay areas become the South Parish.

Although agriculture was the predominant economic activity in this period, maritime pursuits increased. Cod and herring were caught by men from Orleans who sailed from their own town and from other ports. Rock Harbor and Nauset Harbor were the main ports in Orleans at the time (**Kittredge 1987**:184).

Federal Period (1775-1830). Orleans was incorporated as a town in 1797, and thereafter was listed separately from Eastham in census data. Deyo gave an estimate of 137 settlers (adult males), or about 700 persons living in Orleans when it became a town in 1797 (**Deyo 1890**:750-751). Federal census data show an increase in population of 694 persons from 1800 to 1830. In 1800, there were 1,095 persons; in 1810, 1,248; in 1820, 1,343; and in 1830, 1,789 (**Commonwealth of Massachusetts 1909a**:864). In 1790, the Portanimicut Reservation's native population was small. This land was sold off in 1820 (**Paine 1937**:413-414).

The countryside was dominated by dispersed farm settlements, but the seashore, with its maritime pursuits, was more densely developed. Figure 18 indicates the principal roads and harbors.

Orleans was the only town on the Lower Cape to support entry into the War of 1812; this was ironic, since it was at Rock Harbor in Orleans that the only Cape Cod "battle" of that war was fought (**Freeman 1965**:II:728 [1862]). In 1814 a ship landing had been constructed at Rock Harbor, which was a focal point of water transportation in Orleans. The harbor also had a stage office and commercial enterprises. It may be for this reason that on December 12, 1814, a British ship demanded payment as the price for not destroying the town's saltworks and infrastructure. Citizens resisted this attempted extortion and successfully defended themselves. Soon after this incident, the treaty of Ghent was signed, ending the conflict (**Murdoch 1964**:172-181; **Rich 1988**:358 [1883]).

Early Industrial Period (1830-1870). This was a period of great changes in Orleans' economy, settlement pattern, and population. Fishing for mackerel—and, to a lesser extent, cod—was important early in the period, but declined rapidly. By 1845, few men and vessels were engaged in the effort. Other maritime activities included shellfishing and cod liver oil and whale oil production. Concentrations of saltworks were built after 1800 along the shore at Namskaket, Pochet Neck, and on the eastern side of Town Cove (Figure 23).

As shipping interests declined at mid-century, agriculture regained its earlier prominence. There were between 50 and 100 farmers at the end of the period (**Loparto and Steinitz 1987**:118). Egg production in Orleans and Eastham between 1845 and 1865 surpassed all other towns in Massachusetts (**Stott 1987**:235). Farms are shown on a map from 1868 (Figure 37).

With the decline of Rock Harbor's shipping, the town center shifted inland. During this period, settlement was centered in the Town Cove/Pleasant Bay area, with a few small nodes located at Tonset Neck, Barley Neck, and Namequoit. In 1864, when the Cape Cod Central Railway extended service from Yarmouth to Orleans, the depot area northwest of the center of town became the local commercial focus.

During this period, population declined from 1,789 in 1830 to 1,323 in 1870—a loss of 477 persons. In 1840 the population was 1,974; in 1850, 1,848; in 1855, 1,754; in 1860, 1,678; and in 1865, 1,585 (**Commonwealth of Massachusetts 1909a**:864-865).

1830
Poor House and Harding Wharf built in Wellfleet;
population: United States-12,860,702, Massachusetts-610,408; **Barnstable County-28,514, Lower Cape-10,192; Eastham is the only town on the Cape with fewer than 1,000 residents**

1831
Poor Farm started in Orleans; wharf built at Black Rock in Wellfleet;
388 saltworks on the Lower Cape

1833
Universalist Society formed in Orleans;
South Congregational church built in Wellfleet

1834
Methodist church build in Wellfleet;
plantation of Mashpee made a district

1835
Boston and Worcester Railroad, Boston and Lowell Railroad, and Boston and Providence Railroad begin to operate;
Commercial Wharf built in Wellfleet

1836
Part of Truro annexed to Provincetown and boundary established

1837
Panic of 1837;
boundary of Wellfleet and Truro established;
funds from sale of Portanimicut reservation used for new Town House in Orleans;
Enterprise Wharf built in Wellfleet

1838
Methodists clear Millennium Grove campground in Eastham;
three brick lighthouses (the "Three Sisters") built on Nauset Beach in Eastham

1839
Part of Eastham annexed to Orleans;
Mayo Beach light erected in Wellfleet

1840
Population: United States-17,063,353, Massachusetts-737,699, **Barnstable County-32,548, Lower Cape-11,682**

1841
Gale kills 57 men from Truro fleet

1843
Barnstable County agricultural society organized

1845
Potato Famine in Ireland increases immigration to Massachusetts

1846
Mexican War (1846-1848)

1847
Part of Eastham annexed to Wellfleet; block-and-tackle making machines first made in Massachusetts in Chatham

1848
Railroad links Sandwich to the rest of Massachusetts

1849
Pamet lighthouse built in Truro

1850
Compromise of 1850;
Fugitive Slave Act passed;
Long Point settlement abandoned as bluefish enter Provincetown's waters; population: United States-23,191,876, Massachusetts-994,514, **Barnstable County-35,276, Lower Cape-12,751**

1851
New Methodist church in Eastham

1855
Stage Harbor (Harding) lighthouse built in Chatham

1857
Panic of 1857;
January extremely cold in New England;
Dred Scott Decision;
Billingsgate light erected in Wellfleet

Late Industrial Period (1870-1915). The population decline that began in the Early Industrial Period continued throughout the Late Industrial Period. Population dropped from 1,323 in 1870 to 1,052 in 1905. In 1875 the population was 1,373; in 1880, 1,294; in 1885, 1,176; in 1890, 1,219; in 1895, 1,198; in 1900, 1,123; and in 1910 it was 1,077 (**Commonwealth of Massachusetts 1909a**:865; **U.S. Census Office 1922**).

The railroad continued to operate during this period, and the area around the depot continued to function as the town's commercial center (Figure 39). At Town Cove, Snow Wharf and Store were built between 1879 and 1881.

The fishing industry continued to decrease in economic importance. Although scallops became commercially important after 1874, the cod and mackerel fisheries declined further. Mackerel fishing ended in Orleans by 1885 (**Ackerman 1941**:31-33).

Orleans focused more on agriculture during this period. Corn, rye, English hay, vegetables, and poultry were raised (**Deyo 1890**). In addition, manufacturing, especially of clothing, played an increasingly important role in the town's economy, and provided needed economic diversification.

Another new field was communications. The first trans-Atlantic cable had been laid by the *Compagnie Francaise de Cables Telegraphiques* in 1879. It had one "way station" in Newfoundland, and its terminus in North America was at Nauset Beach in Eastham. However, the latter site was too isolated for the cable workers, so the company moved its receiving operations to Orleans in March 1891. A secondary cable was laid to carry the signals between the old terminus at Eastham and the new station. In 1897-1898, the company laid a new cable that ran directly from France to Orleans.

Early Modern Period (1915-1940) and After. This period witnessed the growth of the tourist industry, with its concomitant changes in infrastructure, settlement, and population. World War I struck close to home in 1918 when a German U-boat fired on a tugboat. However, no serious damage was done (**Vorse 1990**:132-133). After the war, with the improvement of highways and tourist accommodations, summer resort activity began and increased throughout the period, particularly after World War II. Vacation home clusters were built on both the bay side and the ocean side.

Population in 1920 was 1,012; in 1930, 1,181; in 1940, 1,451; in 1950, 1,759; in 1960, 2,342; and in 1980, it was 5,306 (**U.S. Census Office 1922, 1952**; **Wilkie and Tager 1991**).

Eastham

Setting. The Town of Eastham is bounded on the north by Wellfleet, on the east by the Atlantic Ocean, on the south by Orleans, and on the west by Cape Cod Bay (Figure 2).

Ponds in the town are Great, Herring, Depot, and Minister Ponds. Brooks include Herring Brook, Herring River, Boat Meadow River, and Rock Harbor Creek. Salt marshes are located at Sunken Meadow, Herring River, Boat Meadow River, and Rock Harbor Creek; Nauset Marsh is the most extensive in Eastham (Figures 5 and 6).

Eastham's terrain is generally flat; elevations are usually less than 18.3 m (60 ft) ASL. Shore areas have dune and beach deposits. Soils are generally sandy loams over gravels and sands.

Early stands of oak and pine were used for fuel and other purposes, which caused erosion of lands. Present growths of oak, pine, and scrub vegetation are probably not more than 40 years old.

Contact Period (Before 1620). According to the MHC, "The present limits of Eastham do not appear to have been as extensively settled [by Native Americans] as areas to the south (Orleans) and to the north (Wellfleet)" (**MHC 1984b**:3). This

suggests that English colonists may have chosen this area to settle because no one else, including Native Americans, was occupying that particular parcel of land.

Champlain produced a map in 1605 that shows a settlement near Nauset Inlet (Figure 14). Native use of the territory probably would have been concentrated near the shore and inland at ponds and other waterways. In addition, trails may have run along the shore (**MHC 1984b**:4).

Settlement Period (1620-1675). The present Town of Eastham was a part of lands included in the 1640 Nauset Plantation grant. It was settled in 1644 by members of the Plymouth congregation, as discussed above. All but one of the original seven proprietors settled on 200-acre farms within the present town limits. During their first year, they built a centrally located meetinghouse 20 feet square at Town Cove. Nauset Plantation was incorporated by the General Court of Plymouth in 1646, and its name was changed to Eastham in 1651 (**Commonwealth of Massachusetts 1909a**:831). In 1656 there was a population of about 115 in the plantation (**Deyo 1890**:722).

Eastham had relatively good soil for dispersed agricultural pursuits. Colonists planted fields of wheat, corn, and English hay, and had apple and pear orchards. They also kept cattle, pigs, sheep, horses, oxen, and fowl. Fishing also provided a portion of the subsistence (**Rockmore 1979**:4-7).

Population of the area continued to grow at a steady pace. This growth, coupled with intensive agriculture and animal husbandry, severely taxed the area's natural resources. By 1663, Eastham soils were depleted, and the colonists were looking for more territory. Proprietors purchased additional land from the local Native Americans, most of which is now Orleans, Eastham, and Wellfleet. Native Americans retained some rights to the land, such as shellfishing and receiving shares of drift whales. Most of these rights were revoked when the Native Americans were assigned to the reservation at Portanimicut (now Orleans) in 1666.

Trails along the bay side and ocean side continued in use. These, as well as paths connecting homesteads, served as important transportation routes. No true highways were laid out in Eastham until the Colonial Period.

Colonial Period (1675-1775). Near the beginning of the period in 1684, there were about 250 colonists in Eastham (**Deyo 1890**:722). At the end of this period, the population was substantially larger and was growing rapidly, from 1,327 in 1765 to 1,899 in 1776 (**Commonwealth of Massachusetts 1909a**:831). It would not reach this level again until the late twentieth century. By the early eighteenth century, the population was concentrated in settlements at Wellfleet Harbor in the north, and at Town Cove and Pleasant Bay in the south. A second meetinghouse was built in 1720, on Bridge Road at Herring Pond.

The settlement cluster at Town Cove and Pleasant Bay was organized as South Parish in 1723. Another cluster at Wellfleet Harbor was made Billingsgate Parish in 1722, and it was incorporated as the Town of Wellfleet in 1763.

These settlements on the water became centers for cod fishing (**Kittredge 1987**:184). Shellfish, oysters, soft-shell clams, herring, and drift whales were also taken.

More roads were needed to facilitate the increasing travel through the villages. The King's Highway was laid out during this period, and may have traveled roughly the path of Route 6 (**Deyo 1890**:723) (Figure 15). This is discussed further in Chapter 8, "Transportation and Communication."

Federal Period (1775-1830). As with other Lower Cape towns, the British blockade suppressed maritime pursuits and forced mariners to find work on the land. This had negative consequences for the quality of the soil. Economic gains after the Revolution were set back by the Embargo and the War of 1812.

1859
January snows very heavy in New England;
first year that railroads carry more freight than canals in U.S.;
Congregational church in Eastham has dwindling membership and cannot support a minister

1860
Population: United States-31,443,321, Massachusetts-1,231,066, **Barnstable County-35,990, Lower Cape-12,278**

1861
Lincoln inaugurated;
Civil War begins;
boundary of Orleans and Brewster established

1862
Confederate Navy at Portland, Maine;
boundary of Chatham, Orleans, and Harwich established

1863
Battle of Gettysburg and Siege of Vicksburg;
Methodist camp meetings moved from Eastham to Yarmouth;
Central Wharf built in Wellfleet;
Massachusetts Agricultural College (MAC) founded;
gun batteries built at Long Point

1864
Congregational Society of Eastham dissolved;
Wood End lighthouse built in Provincetown

1865
Confederates surrender;
Lincoln assassinated;
Cape Cod Central Railway extended from Yarmouth to Orleans;
cranberries grown in Chatham

1867
Boundary of Eastham and Orleans established;
carriage factory in Orleans;
Alaska purchased

Nauset Plantation was incorporated by the General Court of Plymouth in 1646, and its name was changed to Eastham in 1651.

1870
Railroad service extended from Orleans to Wellfleet Center; causeway for railroad across mouth of Duck Creek blocks access to upstream wharves at Wellfleet Center;
Mercantile wharf built in Wellfleet;
Gustavus Swift, founder of meat empire, operates a butcher shop in Eastham;
Lorenzo Dow Baker voyages to Central America, eventually founding the United Fruit Company;
Mashpee incorporated as a town;
population: United States-38,558,371, Massachusetts-1,457,351, **Barnstable County-32,774, Lower Cape-11,671**

1871
Britain and U.S. settle "*Alabama* Claims" from Civil War;
last packet boat from Wellfleet to Boston

1872
Lifesaving stations at Nauset in Eastham and Cahoon Hollow in Wellfleet

1873
Panic of 1873;
new Poor House in Orleans;
railroad service extended from Wellfleet Center through Truro to Provincetown;
blackfish oil processing, producing oil for watch mechanisms, operated in Wellfleet

1874
Lifesaving stations on Monomoy and Morris Islands, Chatham

1877
Reconstruction ends in the South;
boundary of Eastham and Wellfleet established;
Chatham Branch Railroad opens, connecting to the Cape Cod Central Railroad at Harwich

1879
Snow Wharf built in Town Cove, Orleans;
service on the French transatlantic cable begins;
Swift introduces refrigerated railroad cars

Eastham lost significant population during this period. Population dropped from 1,899 in 1776 to 1,834 in 1790. Orleans was separated from Eastham in 1797; as a result, population in Eastham fell by more than half to 659 in 1800. It rose to 751 in 1810, and to 766 in 1820. This slight increase may have been greater if an epidemic had not struck in 1816. Population again rose during the next decade, to 970. No new settlement nodes developed at this time (Figures 17, 18, and 23). Dispersed farming with little focus on the sea continued as the norm.

Methodism arrived in town in 1821 when a church was built on the County Road north of Minister Pond. Methodist camp meetings were held in town after 1828.

Early Industrial Period (1830-1870). During this period, Eastham's population began a gradual decline that continued into the twentieth century. Population stood at 970 in 1830; at 955 in 1840; at 845 in 1850; at 808 in 1855; at 779 in 1860; at 757 in 1865; and at 668 in 1870. So few people were in town that the Congregationalists could not support a minister after 1859. The society disbanded and the church was removed in 1864. The Methodist church, however, persisted. The Methodists cleared a 10-acre site for a camp meeting in 1838. A house was built for the ministers, but camp-goers were relegated to tents. The Millennium Grove Camp Meeting brought thousands of participants to town. Packet boats supplied transportation to North Eastham for some of the visitors. In 1851, the Methodists built a new church; this structure burned in 1920. Even though the camp meeting succeeded in bringing many people to town during the summer months, most were not attracted to settle in the area. In 1863, the camp meeting was relocated to Yarmouth.

Farmers who remained in town produced corn, rye, and potatoes, but these were inconsequential when compared to production figures of other Cape towns. Farms appear on maps from 1848 and 1856 (Figures 34, 35, 36). There were fewer than 100 farmers in 1865 (**Loparto and Steinitz 1987**:118).

The sea did not provide much support for Eastham either, although the salt industry did well in Eastham until repeal of the tariff. Thirteen vessels were engaged in the cod and mackerel fisheries in 1837, but by 1846 there were only five fishing boats in Eastham. This decline may be attributed to the improved harbors in neighboring towns.

To aid navigation on the Lower Cape, three brick lighthouses were built on the Atlantic Coast at Nauset Beach in 1838. These came to be known as the Three Sisters.

Late Industrial Period (1870-1915). Near the beginning of this period, in 1875, Eastham was the second poorest town on the Lower Cape, after Truro. Townspeople continued to invest most of their time in farming, but Eastham ranked only seventh out of 15 towns in Barnstable County in agricultural production. The town's agricultural economy soon improved, however, with the introduction of cranberry production and asparagus farming. By 1895 Eastham was the leader in agriculture among the Lower Cape towns with a total value of agricultural products at about $54,000 in that year (**Commonwealth of Massachusetts 1899b**).

Developments in communication and transportation also reached Eastham during this time. In 1870, rail service was extended through Eastham to Wellfleet Center. A small village developed near the railroad depot built on Samoset Road (Figure 40); a cluster of homes, a Universalist church (1890), and a library (1897) were built east of the railroad.

A house for the lighthouse keeper at Nauset was built in 1875. The three brick Nauset lighthouses were replaced in 1892 by three wooden ones. Nauset Light was connected to an off-cape station and the nearby lifesaving station (built ca. 1872) in 1898, when a telephone was installed (**J. West 1989**).

The first trans-Atlantic cable was laid by the *Compagnie Francaise de Cables Telegraphiques* in 1879; its terminus in North America was in Eastham, at the Nauset

Beach lighthouses. As explained previously, the company moved its receiving operations to Orleans in March 1891. The reduced role of the Eastham terminus building led to its being sold in 1893, and to the construction of a small hut nearby to replace it.

Although maritime pursuits were not a large economic factor, Eastham brought in more bluefish than any other Lower Cape town during this time (**MHC 1984b**:13-14).

There were also a few commercial ventures in town. Among these was a butcher shop run from about 1870 to 1875 by Gustavus Swift, who later moved to Chicago and founded Swift & Company.

In 1870, Eastham had 668 inhabitants; in 1875, 639; in 1880, 692; in 1885, 638; in 1890, 602; in 1895, 476; in 1900, 502; in 1905, 519; and in 1910, there were 518 residents (**Commonwealth of Massachusetts 1909a**:831; **U.S. Census Office 1922**).

Early Modern Period (1915-1940) and After. Eastham's survival continued to be based on agriculture. Although a rust fungus destroyed the asparagus crop after World War I, a newly developed rust-resistant strain returned asparagus to its preeminent place in the economy. This crop was followed in importance by turnips, carrots, and cranberries (**Massachusetts Department of Labor and Industries 1922**).

The King's Highway was upgraded and paved as U.S. Route 6 in 1920; it was widened to a four-lane highway in 1938 (**MHC 1984b**:15) (Figure 47). These improvements brought summer visitors and tourists to town, and helped to boost the local economy.

Population fluctuated at first, and then increased rapidly. In 1920 the population went down to 430; then, in 1930, it rose to 543; in 1940, it was 582; by 1950, it had jumped to 860; in 1960, it was 1,200; and by 1980, it had more than doubled to 3,472 (**U.S. Census Office 1922, 1952**; **Wilkie and Tager 1991**).

Wellfleet

Setting. The Town of Wellfleet is bounded on the north by Truro, on the east by the Atlantic Ocean, on the south by Eastham, and on the west by Cape Cod Bay and Wellfleet Harbor (Figure 2). Its southern portions are flat, with elevations usually less than 50 feet. The rest of the town is somewhat hilly, with a range of hills that continues to Provincetown; elevations here can be more than 30.5 meters (100 feet) ASL (Figures 7 and 8). The town has several tidal inlets, such as the Herring River, Blackfish Creek, Duck Creek, and Bound Brook. There are also several kettle holes, including Herring, Gull, Higgins, Long, and Great ponds.

Geologically, the town has Older Wellfleet plain deposits to the north, and Younger Wellfleet plain deposits in the vicinity of Cahoon and Le Count Hollows. Soils are thin sandy loams, with gravelly fine to very coarse sands.

Wellfleet's original growth of oak and pine was cut for shipbuilding. Scrub pine and other scrub vegetation has regenerated, but some coastal areas remain barren.

Contact Period (Before 1620) and Settlement Period (1620-1675). Contact-Period population figures for Wellfleet are not certain (**MHC 1984f**:3). Late Woodland-Period shell midden sites, particularly in the Wellfleet Harbor area, have been recorded (**MHC 1984f**:4). The Native American population in Wellfleet may have declined during the Settlement Period, as a few European families began to settle the area about 1660.

By 1663, as Eastham's soils were becoming less productive than they had been at the time of the first English settlement, residents of Eastham moved up to the bay side of Wellfleet (**Crosby 1946**:246-247). Native Americans were later removed to a "Praying Indian" settlement (**MHC 1984f**:6).

Both English settlers and indigenous peoples were attracted to the area by the abundance of oysters in Wellfleet Harbor, as well as by other fish available in local water holes and drift whales from the ocean.

1880
Provincetown has 44 wharves; population: United States-50,189,209, Massachusetts-1,783,085, **Barnstable County-31,897, Lower Cape-11,474**

1882
Massachusetts Agricultural Experiment Station established in Barnstable

1884
Bourne set off from Sandwich and incorporated

1887
Interstate Commerce Commission established to regulate railroads; **Wellfleet subsidizes a shoe factory, but it lasts only a few months**

1889
Rebuilding of the U.S. Navy begins; **a pants factory operates in the former shoe factory in Wellfleet**

1890
Census Bureau declares the western frontier closed; **Cranberry Growers' Association started; Universalist church built in Eastham; population:** United States-62,979,766, Massachusetts-2,238,947, **Barnstable County-29,172, Lower Cape-10,627**

1891
New cable house built in Eastham

1892
Cable operations moved to Orleans

1893
Panic of 1893; **first freezing plants in Provincetown and Truro**

1895
Southern and eastern European immigration exceeds northern European immigration into U.S. for the first time

1898
Spanish-American War; **transatlantic cable laid; lifesaving station built at Old Harbor, Chatham; "*Portland* Gale" devastates Provincetown wharves**

1899
Massachusetts shoe industry produces half the shoes made in U.S.

1900
Population: United States-76,212,168, Massachusetts-2,805,346, **Barnstable County-27,826, Lower Cape-9,376**

1902
First gasoline-powered oyster boat in Wellfleet; Marconi's radio towers built in Wellfleet

1903
Wright Brothers successfully fly a heavier-than-air craft; **first successful transatlantic radio transmission**

1907
Panic of 1907

1910
Population: United States-92,228,496, Massachusetts-3,366,416, **Barnstable County-27,542, Lower Cape-9,205**

1912
Portuguse community establishes Our Lady of Lourdes church in Wellfleet;
Titanic sinks

1913
Marconi radio station built on Orleans Road in Chatham

1914
Cape Cod Canal opens;
Panama Canal opens;
World War I (1914-1918)

1915
Lusitania sunk;
severe erosion of Billingsgate Island

1916
Overharvesting of oysters in Wellfleet

1917
U.S. enters World War I;
Bolshevik Revolution in Russia;
U.S. Naval Air Station built at Nickerson's Neck in Chatham, abandoned in 1920; transatlantic radio transmissions made at the government station in Truro and the RCA commercial station in Chatham

Deep-sea whaling itself began and grew rapidly during the Colonial Period. By the time of the Revolution, 420 men (one-third of the entire population of the town) were employed in this enterprise.

Colonial Period (1675-1775). Wellfleet became Billingsgate Parish of the Town of Eastham in 1723, and was elevated to district status in 1763. In 1765, the Provincial Census counted a population of 928 persons, including 14 blacks and 11 Native Americans (**Benton 1905**:92-93). By the end of the period, the population had increased to 1,235 (**Commonwealth of Massachusetts 1909a**:889).

Wellfleet's settlement pattern was controlled not so much by agricultural considerations as by the location of the harbor and streams (Figure 15). Original European settlement was focused at Billingsgate Island, Great Island, Bound Brook Island, and Duck Creek Harbor. One meetinghouse was built at Chequesset Neck in 1712, and another was built in 1734 at the head of Duck Creek (**Deyo 1890**:803). The Native American population gathered at Punonakanit settlement after 1674 (**Conkey et al. 1978**:178).

During the Colonial Period, Wellfleet developed its maritime interests. The first wharves were constructed in the town during this period (**Morison 1921**:300). Oystering, whaling, and cod and mackerel fisheries were based at several harbors, and the Duck Creek area became important for shipbuilding and commercial ventures.

Whaling in this period is associated with the Wellfleet Tavern site on Great Island (**Ekholm and Deetz 1971**). Men waited here for whales to appear in the bay; they would then drive the whales into shallow water where they could be dispatched. This type of whaling declined in the eighteenth century in favor of deep-sea whaling. Deep-sea whaling itself began and grew rapidly during the Colonial Period. By the time of the Revolution, 420 men (one-third of the entire population of the town) were employed in this enterprise (**Kittredge 1987**:172). Having invested so much in deep-sea whaling, Wellfleet suffered greatly from the British naval blockade during the American Revolution. Further problems came to Wellfleet's maritime economy when the oyster beds failed in 1775, having succumbed to disease, silting, and/or overharvesting (**Kochiss 1974**:41-42).

Although Wellfleet's economy was primarily marine-centered, agriculture was also pursued. Wind and tidal grist mills were set up to accommodate local farmers who grew corn, wheat, rye, English hay, and vegetables. Some cattle, sheep, pigs, horses, and oxen were also kept.

Federal Period (1775-1830). Wellfleet became a town by the General Act of August 23, 1775. Over the next 55 years, population greatly increased from 1,235 in 1776 to 2,046 in 1830. In 1790 the population was 1,117; in 1800, 1,207; in 1810, 1,402; and in 1820, 1,472 (**Commonwealth of Massachusetts 1909a**:889).

After the Revolution, Wellfleet's maritime fortunes revived, and industry and infrastructure grew. About 1800, salt-making began as a local industry along the shore at Duck Creek, Blackfish Creek, and the Herring River. Windmills associated with this industry, as well as roads, are shown in Figure 19. Packet boats operated from Wellfleet to Boston from 1800 to 1812, and again after the War of 1812, which briefly interrupted maritime businesses. The packets brought people for the Methodist camp meetings that were held at South Wellfleet from 1819 to 1822, and at Bound Brook Island from 1823 to 1825. An enormous increase in population during the 1820s, possibly aided in part by the Methodists, led to new building in town in the form of a new Town House and a Poor House in 1830. To assist all manner of marine vessels, Billingsgate Light was built in 1822 at the entrance to Wellfleet Harbor.

Wellfleet attempted to rejuvenate its oystering. In 1824, Chesapeake oysters were brought to Wellfleet for reseeding the old oyster beds (**Morison 1921**:302; **Nye 1920**:25). The mature oysters were harvested and shipped to eastern seaboard ports (**Echeverria 1991**:95).

Agriculture was of little or no importance to the town at this date.

Early Industrial Period (1830-1870). This was a period of continuing growth in maritime pursuits and commerce—including the construction of facilities such as wharves—and population. Wellfleet's fishing and shipping industries expanded. Between 1837 and 1845 Wellfleet was the only Lower Cape town able to keep almost the same number of vessels employed in mackerel and cod fisheries (**Commonwealth of Massachusetts 1838, 1846**). The town had 60 vessels in 1845, and ranked second only to Gloucester in the Commonwealth (**MHC 1984f**:13). Associated maritime industries included the manufacture of sails, anchors, blocks, and pumps. Figures 31-33 show the harbors and inlets of Wellfleet in 1848.

Duck Creek developed as a commercial center, and Main Street in Wellfleet Center became a civic center (Figure 24). Several wharves were built at Duck Creek harbor to accommodate the mackerel fleet. The wharves that were built at Wellfleet Center were cut off when the Cape Cod Railway extended service to the Center in 1870, and built a causeway across the mouth of Duck Creek (Figures 41 and 42). Other secondary settlements were located at South Wellfleet, where a wharf, a Congregational church, and a Methodist church were built; and at Billingsgate Island, which had 30 houses, a school, a store and a lighthouse by 1857.

Agriculture continued to play a minor role in the town's economy. No more than 25 farmers worked land in Wellfleet in 1865 (**Loparto and Steinitz 1987**:118).

Population continued to grow in the 1830s but reached a plateau in 1850. Then it began a decline, although the period actually showed an overall gain. In 1830 the population was 2,046; in 1840, 2,377; in 1850, 2,411; in 1855, 2,325; in 1860, 2,322; in 1865, 2,296; and in 1870, 2,135 (**Commonwealth of Massachusetts 1909a**:889).

Late Industrial Period (1870-1915). During this period, Wellfleet experienced a severe decline in its marine economy and a drop in population. With the coming of the railroad to Wellfleet in 1870, packet boat service declined and was ended in 1871. The railroad brought passengers who stayed in several resort facilities that were built in both settled and rural areas of town. By the turn of the century, summer resorts were a part of the economic base.

Fisheries held their own until the late nineteenth century, when larger vessels were used; these could not navigate Wellfleet Harbor. At this time, there was an attempt to revive deep-sea whaling in Wellfleet. One ship left port, never to be heard from again; after this, the enterprise was dropped (**S. Rich 1988**:112 [1883]). Although whaling was not successful, oystering was. By the end of the century, Wellfleet oystermen faced increasing competition from Chesapeake Bay.

Townspeople tried to diversify their industries. Among the businesses of the period were a shoe factory, a pants factory, and oil works (Figure 42). An attempt at textile manufacturing proved short-lived.

In 1902, the Marconi radio towers were built on the bluffs south of Le Count Hollow. The station could send and receive trans-Atlantic messages, but was in operation for only 14 years. After 1917 its work was divided between the government station at Truro and RCA's commercial wireless station at Chatham.

During this period, the population decreased by 55 percent. In 1870 the population was 2,135; in 1875, 1,988; in 1880, 1,875; in 1885, 1,687; in 1890, 1,291; in 1895, 968; in 1900, 977; in 1905, 958; and in 1910, it was 1,022 (**Commonwealth of Massachusetts 1909a**:889; **U.S. Census Office 1922**).

Early Modern Period (1915-1940). This period represents the final shift from a maritime-based economy to one based on tourism. Wellfleet's oyster harvests declined substantially due to overharvesting and the removal of empty shells, which had acted as a fertilizer for the beds.

1918
Influenza pandemic;
German U-boat fires on tug off Orleans;
war ends

1919
Acadia National Park created;
18th Amendment establishes prohibition;
rust fungus destroys asparagus crop

1920
County road improved as U.S. Highway 6;
19th Amendment establishes women's suffrage;
economic recession (1920-1921);
population: United States-106,021,537, Massachusetts-3,852,356, **Barnstable County-26,670, Lower Cape-8,805**

1921
First commercial radio broadcast;
Immigration Act passed, restricts immigration by groups such as the Cape Verdeans

1923
Chatham tower moved to Nauset

1929
Panic of 1929—stock market crash followed by the Great Depression

1930
Chatham Branch Railroad closed;
most severe drought in U.S. history (1930-1941) begins;
population: United States-123,202,624, Massachusetts-4,249,614, **Barnstable County-32,305, Lower Cape-8,799**

1931
Chequesset Country Club built in Wellfleet

1933
Prohibition ended

1934
First part of the year extremely cold, with world-record winds (230 mph) on Mount Washington, New Hampshire

1936
March snow melt and rain cause massive flooding in New England;
Nauset lifesaving station replaced by Coast Guard station

1937
Economic recession (1937-1938)

1938
September's great hurricane devastates Cape and the rest of New England

1939
World War II begins

1940
Population: United States-132,164,569, Massachusetts-4,316,721, **Barnstable County-37,295, Lower Cape-9,312**

1941
U.S. enters World War II

1945
Atomic bomb developed and used on Japan;
war ends

1947
Winter of 1947-1948 has more snow than any other in southern New England

1948
Berlin Airlift, start of the Cold War

1949
NATO founded

1950
Korean War (1950-1953);
North Truro AFS established; population: United States-151,325,798, Massachusetts-4,690,514, **Barnstable County-46,805, Lower Cape-10,655**

1954
Hurricane Carol hits New England

1955
Hurricanes Connie and Diane hit New England

1956
Interstate Highway Act provides for extensive new highway network

1960
Population: United States-179,323,175, Massachusetts-5,148,578, **Barnstable County-70,286, Lower Cape-12,610**

1961
Kennedy inaugurated;
Hyannis site of "Summer White House"

1963
Kennedy assassinated, Johnson inaugurated

1966
Cape Cod National Seashore established

The new Route 6 highway ran from the Eastham border to South Wellfleet and continued along the old County Road through the center to Truro (Figure 48). Road improvements must have encouraged the growing tourist industry. It was during this period that the town became primarily associated with tourism. Some summer residents became year-round residents, and population began to increase. Population figures do not, however, accurately represent all the people who spend time in Wellfleet. In 1920, there were 826 residents; in 1930, 823; in 1940, 890; in 1950, 1,123; in 1960, 1,404; and in 1980, 2,209 (**U.S. Census Office 1922, 1952**; **Wilkie and Tager 1991**).

In 1943, Camp Wellfleet opened as the home of the Anti-Aircraft Artillery Training Center. On the coast was an artillery firing range. The base became a Navy radar school until it was put on standby status in 1945. It was then returned to the Army, which used it in the late 1940s as a National Guard training camp. This installation was officially closed in 1961 (***Colony Memorial*, March 23, 1944**; ***Falmouth Enterprise*, December 10, 1943**; **Lowe 1968**:24).

Truro

Setting. The Town of Truro is bounded on the north by Provincetown, on the east by the Atlantic Ocean, on the south by Wellfleet, and on the west by Cape Cod Bay (Figure 2). Most of the town is hilly, and slopes from east to west. Elevations reach 51.8 m (170 ft) ASL on the eastern shore, and 36.6 m (120 ft) ASL on the western shore; most are less than 30.5 m (100 ft) ASL. Soils are generally sandy loams, with rocky soils in the south.

The Little Pamet and Pamet Rivers cut across the town. Truro has several ponds, including Village, Great, Snow, Ryder, Round, Horseleech, and Slough ponds (Figures 9 and 10). Pilgrim Lake was known as East Harbor until it was closed in 1869; it has become less saline with time.

Early forests were cut for use as fuel and as timber for shipbuilding. Today, scrub oak and pine, as well as some dune grasses, help in erosion control.

Contact Period (Before 1620) and Settlement Period (1620-1675). Although no population figures are available specifically for Truro, it is clear from the archeological evidence that "the Truro area was intensively settled during the Contact Period, particularly along the bay shore" (**MHC 1984e**:3). Many Late Woodland sites have been recorded.

When the Pilgrims explored the area in late 1620, they found cleared fields and a cache of corn in the Corn Hill area. The Native Americans probably did not have a nucleated village, but had dispersed farmsteads in the region (**Thorbahn 1988**). In addition to raising corn and other crops, indigenous people probably gathered quahogs, clams, oysters, and scallops, caught fish in weirs at coastal flats on the bay side, and hunted deer and other mammals.

Europeans were probably transient visitors to Truro at this time. They may have had fishing stations along the bay shore in the East Harbor, Pamet Harbor, and Pond Village (**MHC 1984e**:5).

Colonial Period (1675-1775). Proprietors of Eastham purchased much of Truro from the Pamet Indians in 1684. However, the first European settlement of the Pamet area did not begin until about 1700 (**S. Rich 1988**:80-81 [1883]). A plantation began under the name of Dangerfield in 1705. In 1709, the common land called "Pawmett" was made the town of "Truroe" (*Prov. Laws* I:642; **Commonwealth of Massachusetts 1909a**:885). Its northern lands were set off as Cape Cod Precinct in 1714; the precinct was incorporated as Provincetown in 1727.

During this period, Truro developed a mixed economy of maritime and agricultural pursuits that proved highly successful and led to rapid growth. The major

occupation of residents was fishing and whaling. Truro built its own whaling vessels on the Pamet River. Several wharves were built at Indian Neck and the Pamet River to accommodate the fisheries and coastal trade.

Agriculture was also important to Truro. Cattle, pigs, sheep, horses, and oxen were kept, and corn, rye, oats, barley, and wheat were grown. Several windmills were built to process the grains.

Early settlement clusters were located at High Head and East Harbor, and later expanded to Pond Village, Great Hollow, Truro Village, and South Truro. The "King's Highway" reached Truro in 1720, although water transportation was probably an easier means of travel at the time.

By 1765 there were 925 residents, including six African Americans and one Native American. In 1776 the population was recorded at 1,227—a 33 percent increase (**Benton 1905**:92-93; **Commonwealth of Massachusetts 1909a**:885).

Federal Period (1775-1830). During the late eighteenth century, Truro lost some of its residents, but later it recouped its losses and finished the period with another substantial gain. In 1776 the population was 1,227; in 1790, 1,193; in 1800, 1,152; in 1810, 1,209; in 1820, 1,241; and in 1830, 1,547 (**Commonwealth of Massachusetts 1909a**:885).

During the Revolution, a local militia was organized to defend the town. This group repulsed an attempted landing by the British at Pond Village. Later, a company of militia was stationed in Truro by order of the General Court to protect the town (**S. Rich 1988**:280-281 [1883]). In 1778, the British warship HMS *Somerset* went down off the Peaked Hill Bars and was looted by the residents of Truro and Provincetown (**Hatch 1951**:27-29; **S. Rich 1988**:283 [1883]).

Between the American Revolution and the War of 1812, whaling and fishing continued, and some salt was produced. Most foodstuffs and other necessities, however, had to be brought in from other towns. Shipbuilding provided an impetus for clear-cutting the remaining forests in town. By 1820 wood had to be imported for further construction (**Finch 1985**:110).

There were several clusters of settlement along the bay shore, including Pond Village which had 40 homes in 1794. Other settlement nodes were located at East Harbor and south of the meetinghouse at Great Hollow. "Hollows" or "pamets," local names for the valleys extending from ocean to bay, were attractive to settlement because they were sheltered from high winds, and generally contained better soils than the more exposed areas (**Holmes et al. 1994c**; **S. Rich 1988**:202 [1883]; **Yentsch 1988**:138).

The Pamet River settlement became a center for churches. A Methodist Episcopal Church was built there in 1826, and camp meetings were held. The Congregational Church was built in 1827.

The first lighthouse on Cape Cod, Highland Light, was built near the village in 1798 (**A.G. Clark 1992**:23).

Early Industrial Period (1830-1870). During this period maritime activities and related industries first expanded and then declined, while agriculture virtually disappeared. Mackerel and cod fisheries had become the important economic base in town. The quantity and value of Truro's catch were second only to those of Provincetown in 1837. Shipbuilding continued, with 15 brigs and schooners built on the Pamet River from 1837 to 1851. There was a general decline after this. Only 10 ships were reported fishing for cod and mackerel in 1865 (**Commonwealth of Massachusetts 1867**).

Truro's salt production could not keep up with its fisheries; more than half of its salt was imported from other towns. Truro had 39 saltworks, placing it ninth in the county at its peak in 1831. By 1865 no saltworks were reported for the town (**Commonwealth of Massachusetts 1867**).

The Pamet River settlement (Truro Center) grew with the prosperity of the fishing industry at the beginning of the period (Figure 29). Requests to the government in 1839 and 1848 to build a breakwater were denied. In 1854, residents tried to sink a pile structure but it proved inadequate. Other attempts at keeping Pamet Harbor from silting in were unsuccessful, thereby halting the growth of Truro Center. The fishing industry shifted to Provincetown by 1860.

As maritime activity rose and fell in Truro, agriculture also became less important. By the end of the period there were no farmers in town (**Loparto and Steinitz 1987**:118).

Population figures reflect the rise and decline in the fisheries. In 1830 the population was 1,547; in 1840, 1,920; in 1850, 2,051; in 1855, 1,917; in 1860, 1,583; in 1865, 1,447; and in 1870, 1,269 (**Commonwealth of Massachusetts 1909a**:885). Maps of Truro for this period are shown in Figures 25 (1831), 27 (1836), and 29-30 (1841).

Shipbuilding provided an impetus for clear-cutting the remaining forests in town. By 1820 wood had to be imported for further construction.

Late Industrial Period (1870-1915). Truro's population continued to plummet, with a 48 percent decrease over the period. In 1870 the population was 1,269; in 1875, 1,098; in 1880, 1,017; in 1885, 972; in 1890, 919; in 1895, 815; in 1900, 767; in 1905, 743; in 1910, 655; and in 1915, there were only 663 residents (**Commonwealth of Massachusetts 1909a**:885; **MHC 1984e**:13; **U.S. Census Office 1922**).

The Cape Cod Railroad was extended north from Wellfleet through Truro and Provincetown in 1873 (Figures 43-45). The railroad facilitated the shipment of fish to distant markets (**Kittredge 1987**:198-199; **Marshall 1974**:184-190). Later, several facilities were constructed to take advantage of this ability. A fish-canning plant opened, and a freezing plant was built in 1893; these facilities

exemplified the shift from salting fish to canning or preserving it on ice.

Weir-fishing became more prevalent from the 1870s on, especially for fish that were previously not marketable because of problems of preservation. Eels, for the Boston market, became important (**Marshall 1974**:182-183). Agriculture, on the other hand, was not a significant economic pursuit at this time.

Early Modern Period (1915-1940) and After. This period saw the growth of the tourist industry, the persistence of weir-fishing, some slight expansion in agriculture, and an eventual growth in population after World War II. The year-round resident population declined from 663 in 1915 to 554 in 1920, and to 513 in 1930. It started to rise, with 585 in 1940, 661 in 1950, 1,002 in 1960, and in 1980 it was 1,486 (**MHC 1984e**:14; **U.S. Census Office 1922, 1952**; **Wilkie and Tager 1991**).

Numbers of summer guests rose, and resort development expanded, because of the extension of Route 6 through Truro (Figures 49 and 50). Cottages were built at Pilgrim Beach, North Truro, Pilgrim Heights, and Great Hollow.

Local residents continued their profitable weir-fishing to fill the freezers for the export market. Portuguese immigrants began to successfully grow cranberries.

Provincetown

Setting. Shaped like a hook, the Town of Provincetown is bounded on the north and east by the Atlantic Ocean, on the south by Truro, and on the west by Cape Cod Bay. Provincetown Harbor is south of the hook or "fist" of the Cape (Figure 2).

Provincetown is composed of glacial plain deposits that accumulated by westward shore drifting. Sand dunes in the northern portion of town slope southward into Provincetown Harbor. Dune elevations can be as high as 30.5 m (100 ft) ASL. Soils are poor, with some sandy loams between dunes.

Among the ponds in town are Shank Painter, Clapps, Duck, Pasture, Great, and Grassy ponds (Figures 11 and 12). Any forests that may have been present earlier are no longer extant. Today vegetative cover consists of grasses, scrub pine, maple, beech, wild cherry, beach plum, and bayberry.

Contact Period (Before 1620) and Settlement Period (1620 to 1675). Gosnold, visiting in 1602, met a Native American in the harbor, but he may have been a seasonal user of the lands. Prehistoric sites have been located in the Provincelands section of town (**Dunford 1993**: personal communication). Other than temporary visits, no early seventeenth-century European settlement in Provincetown is known.

It was here that the Pilgrims landed in 1620 and first encountered local people. The *Mayflower Compact* was signed in Provincetown. Although the Pilgrims decided not to settle at Provincetown, they did visit to fish for bass, mackerel, and cod.

Colonial Period (1675-1775). European settlement by about 130 persons was concentrated in a small area along the harbor in 1705 (**Deyo 1890**:692). Originally set off from Truro in 1714 as Cape Cod Precinct, Provincetown was incorporated as a town in 1727 (**Commonwealth of Massachusetts 1909a**:869). A road extended to Provincetown in 1727; the shore, however, was the most likely route to this area.

Provincetown residents had taken whales in Cape Cod Bay. However, starting about this time, whales no longer came into the bay and it became necessary for Provincetown whalers to venture into deep water to catch them. In 1737, so many men reportedly went deep-sea whaling that only a dozen or so might be left in town (**Kittredge 1987**:172; **A. Starbuck 1964**:I:31, 169).

Possibly because of a decline in its fisheries, the town's population began to fall. By 1748 there were only two or three families, and in 1755 there were three houses (**Deyo 1890**:979). Provincetown was not listed in the Provincial Census of 1765 (**Benton 1905**:92-93).

While the fishing and whaling industries fluctuated in success during the period, animal husbandry and agriculture were not significant.

Federal Period (1775-1830). At the beginning of the Revolution, the number of houses had increased to 20, and the population was 205 residents (**Commonwealth of Massachusetts 1909a**:869). Because of continued British raids, Provincetown was abandoned during the conflict (**Freeman 1965**:II:617-618 [1862]; **S. Rich 1988**:108 [1883]; **N. Smith 1922**:29). However, after the Revolution the population more than doubled from 205 in 1776 to 454 in 1790. Rapid population growth continued during the rest of the period. In 1800 it was 812; in 1810, 936; in 1820, 1,252; and in 1830, 1,710. Provincetown's population concentrated along the harbor, and its maritime focus had the greatest influence on settlement patterns. A small fishing village developed at Long Point (Figure 26); its inhabitants took advantage of in-shore fishing, but there was no source of fresh water. Long Point is discussed in greater detail in **Holmes et al.** (1994).

Between the American Revolution and the War of 1812, Provincetown fisheries flourished as is indicated by the influx in inhabitants. In 1800 there were 144 dwellings, 90 stores, five shops, 10 saltworks, and five herring smokehouses. After the interruption of the War of 1812, Provincetown once again prospered. The fleet increased

from 20 vessels in 1790 to 98 in 1837 (**Commonwealth of Massachusetts 1838**; **Kittredge 1987**:187). These ships ventured to Newfoundland and Labrador, bringing back fish to dry on flakes in Provincetown Harbor.

Cod was exported to Europe. After the British lifted a prohibition on American fish being shipped to its island colonies in the 1790s, exports increased to the West Indies.

Early Industrial Period (1830-1870). Although this period saw some fluctuation in maritime pursuits and related industries, it was overall one of continued growth. In 1837, Provincetown had 98 vessels for cod and mackerel fishing, with cod being the larger industry (**Commonwealth of Massachusetts 1838**). By 1845, Provincetown's fleet shrank by half, but by 1855 the town's fleet regained its former size (**Commonwealth of Massachusetts 1846, 1856**). Demand for fish during the Civil War may have brought more money into town; there certainly was investment in new, larger vessels that had steel hulls and could take on larger crews (**H. Jennings 1975**:99). At the end of this period, the town had a few more ships and more men employed in fishing than at the beginning of the period. In 1865, 1,260 men were working in the fishery—36 percent of the entire population of Provincetown (**Commonwealth of Massachusetts 1868**). Others were employed in associated industries. By 1865 Provincetown was foremost of the Lower Cape towns in cod oil production (**Commonwealth of Massachusetts 1868**).

Whaling was renewed in Provincetown in this period. Some men shipped on vessels from other ports. In the 1840s whalers again left Provincetown, sometimes for longer voyages; few Provincetown ships, however, ventured beyond the Atlantic. By 1845, Provincetown was exceeded by only Nantucket in the Cape and Islands for the number of whaling ships (**Stott 1987**:262). Civil War raiding by Confederate privateers took a toll on Provincetown whalers, but this did not end the industry.

Whale oil production increased as result of the renewed whaling ventures. In 1837 Provincetown processed 21,420 gallons of whale oil, but by 1865 it produced 91,571 gallons (**Commonwealth of Massachusetts 1868**). This industry diminished after Pennsylvania's petroleum fields successfully competed with whale fisheries for the oil market.

Other marine-related industries peaked during this period. Salt production peaked in 1837, and had declined by 1855 because of the removal of the bounty and protective tariff. Local shipbuilding reached its peak in 1845. Also manufactured were blocks, pumps, anchors, and chains; Provincetown was the premier sailmaker on the Lower Cape.

In contrast to fishing, farming was virtually nonexistent in Provincetown by the end of this period (**Loparto and Steinitz 1987**:118).

Provincetown Center was the hub of business and civic affairs. Linear development continued along the harbor, where there were clusters of houses, warehouses, and stores at the 30 wharves that crowded the shore. Residences pushed eastward from the shore (Figure 26). The fishing village that had sprung up at Long Point was dismantled and moved to Provincetown proper during the 1850s. Houses that were moved across the harbor have been identified by local historians. In the 1860s, two gun batteries were built on Long Point.

Population rose from 1,710 in 1830 to 3,865 in 1870: a 126 percent increase during the period. In 1840 the population was 2,122; in 1850, 3,157; in 1855, 3,096; in 1860, 3,206; and in 1865, 3,472.

Late Industrial Period (1870-1915). Although economic and population growth slowed and leveled off during this period, Provincetown did not experience the dramatic declines of other Lower Cape towns. The population in 1870 was 3,865; in 1875, 4,357; in 1880, 4,346; in 1885, 4,480; in 1890, 4,642; in 1895, 4,555; in 1900, 4,247; in 1905, 4,362; and in 1910, it was 4,369 (**Commonwealth of Massachusetts 1909a**:869; **U.S. Census Office 1922**).

During this period, Provincetown became home to many Portuguese immigrants. Most of the town's population growth can be attributed to their arrival. In 1875 they made up about 13 percent of the population; by 1905 they were 23 percent of the total, and were the largest single ethnic group on the Cape. There was a concentration of Azorean and Cape Verdean fishing families in the west end of Provincetown.

During the first two decades of the period, growth was spurred by the extension of the Cape Cod Railroad to Provincetown in 1873 (Figure 45). After 1890, tourism became important economically, and by the turn of the century a small summer artist colony developed in the east end of town. The artists were joined in Provincetown by writers.

After 1890, tourism became important economically, and by the turn of the century a small summer artist colony developed in the east end of town. The artists were joined in Provincetown by writers.

Provincetown's fishing fleet profited as those of other Lower Cape towns declined after the Civil War. However, the depression of 1893-1894 and the low price of whale oil bankrupted many Provincetown fishermen and whalers. Another setback occurred when the *Portland* Gale of 1898 destroyed about half of the wharves in town. Most of the 44 wharves in Provincetown in 1880 had fallen into disuse by the turn of the century (**N. Smith 1922**:55; **Hatch 1951**:46).

In spite of problems in the fishing industry, Provincetown was third in the state, after Gloucester and Boston, in the value of fish taken, and first in quantity of cod, mackerel, flounder, haddock, and herring in 1915 (**MHC 1984d**:18). Three developments in this period helped the fishery. First, as was the case in Truro, weir-fishing increased

(**Kittredge 1987**:198-199). Second, fishermen were beginning to use power dories and beam trawls; by 1910 beam trawls were replaced by otter trawls. Third, residents who built new fish cold-storage plants took advantage of a new freezing technique; the first freezing plant on the Lower Cape was built in Provincetown in 1893 (**Marshall 1974**:196; **Ruckstuhl 1987**:41).

Early Modern Period (1915-1940) and After. As the Portuguese population grew, it became the largest segment of the town. During the 1920s, it was targeted by the Ku Klux Klan. Members of the Portuguese community responded by becoming politically active and gaining control of town offices.

Also in the 1920s, the tourist trade expanded and transportation links were improved. U.S. 6 was created (Figure 50). An air strip was built at Race Point and a loop road was paved through the Provincelands Reservation in the 1930s. New rental structures accommodated visiting artists. The artists also reused some vacant buildings, such as fish houses, sail lofts, and barns as their studios, galleries, and theaters.

Permanent residents still engaged in the fishing industry. Fish freezing, fish canning, and fish-oil processing continued to be the mainstays of the economy.

Between 1920 and 1980 there was a slight decline in the number of year-round inhabitants. The population in 1920 was 4,246; in 1930, 3,808; in 1940, 3,668; in 1950, 3,795; in 1960, 3,389; and in 1980, 3,536 (**U.S. Census Office 1922, 1952**; **Wilkie and Tager 1991**).

Using the Background Information for Further Study

Having examined the background of the Lower Cape, the next step is to look closely at some of the principal topics in the history of the region: Native American Settlements; Agriculture and Rural Life; Maritime Life; Industries: Extractive, Processing, Manufacturing; Military Affairs; Tourism and Seasonal Residency; and Transportation and Communication.

In the following chapters, the reader is invited to find common themes that span the history of the Lower Cape. Among these are the role that geographic isolation has played in the development of the region; the influence of urban centers such as Boston and London on the economy and life of the Lower Cape; the need for adaptability in making a livelihood and using resources to survive; the effects that changes in technology, transportation, and taste have had; and the conflicts that have arisen between competing ways of life.

Just as one can see common themes, one can also discern differences between towns, ethnic groups, economic classes, and generations. For example, some communities prospered with changes in fishing technology, while others faded. Each case offers further questions for research.

Chapter II

NATIVE AMERICAN SETTLEMENTS

Problems of Interpretation

Chronology

Archeological Implications

The archeological record and the social history of post-Contact Native Americans on Cape Cod is not well understood. Archeologists and historians have tended to focus on either the nature of pre-Contact aboriginal culture (e.g., **Marten 1970**; **Salwen 1978**), or the dynamics of seventeenth-century Indian-European relations, ending with King Philip's War in 1675-1676 (e.g., **F. Jennings 1975**; **Salisbury 1982**; **A. Vaughan 1965**). With the exception of some recent studies (**Axtell 1985, 1988**; **Bragdon 1981**; **Mandell 1992**; **Simmons 1979, 1986**), little effort has been devoted to studying Native American life in southern New England after the seventeenth century.

Problems of Interpretation

This historical gap may be the result of neglect by scholars and/or their reliance upon a fragmentary documentary record. Historical archeology was slow to contribute to an understanding of post-Contact culture change because of the application of methods and ideas derived from prehistorical archeology. As Deagan puts it, "we have not...developed principles of interpretation that allow us to recognize 'acculturation' in the archeological record, other than a vague idea that the presence of European items on a non-European site (and vice-versa) reflects acculturation'" (**Deagan 1988**:9).

Native Americans practically disappear from historical narratives after King Philip's War, yet numerous groups of Native Americans continue to exist throughout Massachusetts to the present day.

Archeologists studying post-Contact Native American sites in New England generally view culture contact as a process of unilinear assimilation. They often perceive pre-Contact history of Native Americans to be directly followed by either annihilation or complete assimilation into Anglo-American culture. Such a perspective neglects both variability in post-Contact Native American society and the persistence of Native American communities and culture.

This view is apparent in many articles published in the *Bulletin of the Massachusetts Archaeological Society* over the past several decades; in these, sites in southern New England have been dated to the Late Woodland Period despite their having artifact assemblages dating from the seventeenth through nineteenth centuries. For example, the Mattaquason Purchase site (19-BN-12; M48 N6) in North Chatham is identified as a single-component Early/Late Woodland site (**Eteson et al. 1978**). This site, however, contained seventeenth-century material including items of European manufacture.

Another example is found in Bullen and Brooks' (1949) report on prehistoric and historic "components" at the Herrecater Swamp site on Nantucket Island. The historic "component" produced domestic animal bones, clay pipes, nails, glass, and a 1719 French coin. Five projectile points and some worked quartz were found in association with this historic material. The site report implies that the site had to have been disturbed; there would be no other explanation for the presence of apparent Native American and Anglo- or Franco-American material culture in contemporary contexts.

This interpretation is at odds with recent studies of the material culture and language of Native Americans in New England, which suggest that Native Americans employed a variety of settlement and subsistence strategies, and maintained native cultural identities even as they made use of Anglo-American material culture. For example, a sizable Native American population on Nantucket participated in maritime and agricultural pursuits well into the eighteenth century (**Little 1981a-d**).

Along with Bragdon, Little reported on a wide range of both traditional and Anglo-American material culture and dwellings recorded in eighteenth-century Native American probate records and account books from Natick, Nantucket, and Martha's Vineyard (**Little 1980**; **Bragdon 1979**). Goddard and Bragdon (1988) have conducted an extensive study of the Massachusett language, and recorded its use by native populations well into the eighteenth century.

Native Americans practically disappear from historical narratives after King Philip's War, yet numerous groups of Native Americans continue to exist throughout Massachusetts to the present day (**Bingham 1970**; **Brodeur 1985**; **Clifford 1988**; **F. Hutchins 1979**; **Kendall 1809**; **Linton 1940**; **Speck 1928**). One of the best accounts of these groups is by John Milton Earle (**Earle 1861**). Earle's descriptions showed Native Americans struggling with white paternalism and employing different strategies for survival.

Further study of historic Native Americans should include examination of primary documents from communities where natives are known to have lived. Such documentary research should include church records, as well as deed and probate records. The Paine papers at the Harwich Historical Museum also contain primary documents related to this topic. In addition, William J. Burke's annotated bibliography, located at the Nickerson Room at Cape Cod Community College, should be consulted.

Chronology

Prehistoric Periods (12,000-450 B.P.)

Occupation of the Cape has been documented as early as the Paleoindian Period, 12,000-9000 B.P. (**Mahlstedt 1987**:23-25). A brief summary of the cultural history of the region in the Prehistoric Period is found in Chapter 1 of this volume.

European Contact Period (Before 1620)

European explorers of the North Atlantic coast who came into contact with Native Americans have left some accounts. These provide both historical and ethnographic information that can supplement the archeological record.

In 1605 Samuel de Champlain visited the Cape. He described the local inhabitants at Nauset Harbor (Figure 14) as follows:

> The next day...Sieur de Monts [leader of the expedition] determined to go and see their habitation. Nine or ten of us accompanied him with our arms; the rest remained to guard the barque. We went about a league along the coast. Before reaching their cabins, we entered a field planted with Indian corn in the manner above described. The corn was in flower, and five and a half feet high. There was some less advanced, which they plant later. We saw many Brazilian beans, and many squashes of various sizes, very good for eating; some tobacco, and roots which they cultivate, the latter having the taste of an artichoke. The woods are filled with oaks, nut trees, and beautiful cypresses [cedars], which are of a reddish color and have a very pleasant odor. There were also several fields entirely uncultivated, the land being allowed to remain fallow. When they wish to plant it they set fire to the weeds, and then work it over with their wooded spades. Their cabins are round, and covered with heavy thatch made of reeds. In the roof there is an opening of about a foot and a half, whence the smoke from the fire passes out. We asked them if they had their permanent abode in this place, and whether there was much snow. But we were unable to ascertain this fully from them, not understanding their language, although they made an attempt to inform us by signs, by taking some sand in their hands, spreading it out over the ground, and indicating that it was the color of our collars, and that it reached the depth of a foot. Others made signs that there was less, and gave us to understand also that the harbor never froze; but we were unable to ascertain whether the snow lasted long. I conclude, however, that this region is of moderate temperature, and the winter not severe. While we were there, there was a northeast storm, which lasted four days; the sky being so overcast that the sun hardly shone at all. It was very cold [this was in July], and we were obliged to put on our great coats, which we had entirely left off. Yet I think the cold was accidental, as it is often experienced elsewhere out of season.
>
> ...[two days later] four or five seamen having gone ashore with some kettles to get fresh water, which was to be found in one of the sandbanks a short distance from our barque, some of the savages, coveting them, watched the time when our men went to the spring, and then seized one out of the hands of a sailor, who was the first to dip and who had no weapons. One of his companions, starting to run after him, soon returned, as he could not catch him, since he ran much faster than himself. The other savages, of whom there were a large number, seeing our sailors running to our barque and at the same time shouting to us to fire at them, took to flight. At the time there were some of them in our barque, who threw themselves into the sea, only one of whom we were able to seize. Those on the land who had taken to flight, seeing them swimming, returned straight to the sailor from whom they had taken away the kettle, hurled several arrows at him from behind, and brought him down. Seeing this, they ran at once to him, and despatched him with their knives. Meanwhile, haste was made to go on shore, and muskets were fired from our barque: mine, bursting in my hands, came near to killing me. The savages, hearing this discharge of firearms, took to flight, and with redoubled speed when they saw that we had landed, for they were afraid when they saw us running after them. There was no likelihood of our catching them, for they are as swift as horses. We brought in the murdered man, and he was buried some hours later. Meanwhile, we kept the prisoner bound by the feet and hands on board of our barque, fearing that he might escape. But Sieur de Monts resolved to let him go, being persuaded that he was not to blame, and that he had no previous knowledge of what had transpired, as also those who, at the time were in and about our barque. Some hours later there came some savages to us, to excuse themselves, indicating by signs and demonstrations that it was not they who had committed this malicious act, but others farther off in the interior. We did not wish to harm them although it was in our power to avenge ourselves.
>
> All of these savages from the Island Cape wear neither robes nor furs, except very rarely; moreover, their robes are made of grasses and hemp, scarcely covering the body, and coming down only to their thighs. They have only the sexual parts concealed with a small piece of leather; so likewise the women, with whom it comes down a little lower behind then with the men, all the rest of the body being naked. Whenever the women came to see us, they wore robes which were open in front. The men cut off the

> hair on the top of the head like those at the river Chouacoet [Saco River in Maine]. I saw, among other things, a girl with her hair very neatly dressed, with skin colored red, and bordered on the upper part with little shell beads. A part of her hair hung down behind, the rest being braided in various ways. These people paint the face red, black, and yellow (**Champlain 1912**:I:123-127 [1605]).

The settlement described by Champlain is discussed in an archeological reconnaissance report on Fort Hill that is a companion to this volume (**Holmes et al. 1994a**).

European Settlement Period (1620-1675)

Three Wampanoag subgroups lived on the Lower Cape:

the Pamets in the Truro-Provincetown area;
the Nausets in the Eastham-Orleans area
(who may have extended as far as Truro); and
the Monomoyetts in the Chatham-Harwich-Orleans area (**Nickerson 1958**:53).

When considering the political organization on the Cape, one should remember that the situation probably shifted as groups coalesced or split.

In 1620 an exploration party from the *Mayflower*, which was anchored at Provincetown Harbor, sailed to Eastham where they first encountered the Nausets. They discovered a large native burial ground inside a palisade, and corn fields in the area east of Great Pond at the present-day Wiley Park area. At Corn Hill in Truro, they discovered a smaller settlement that included fields, burials, and evidence of abandoned dwellings. Along the adjacent Great Hollow were additional planting fields (**Freeman 1965**:I:72, 78, 81 [1858]).

The next year, when the English visited Aspinet, sachem of the Nausets, witnesses reported that he had no fewer than 100 men in his company (**Speck 1928**:132). This suggests that a population of several hundred may have lived in the Truro-Eastham area at this time.

Additional Contact-Period and early historic sites in Truro have been located at Stout's Creek, East Harbor, Head of the Meadow, and along the Pamet River. In Wellfleet, Late Woodland/Contact Period sites have been reported around Wellfleet Harbor. Eastham was not as extensively occupied as Wellfleet to the north and Orleans to the south; however, Late Woodland and Contact Period sites have been recorded at Town Cove and the Nauset Marsh (**MHC 1984b**:3, 1984e:5, 1984f:4).

During the early Plantation period, the Native Americans on the Lower Cape engaged in hunting and gathering, horticulture, fishing, clamming, and drift whaling. They also were trading corn, beans, and squash to the English by the 1620s (**Freeman 1965**:I:115 [1858]).

In 1623 an apparent conspiracy by Native Americans to wipe out English settlements in Plymouth Colony was alleged. A party led by Miles Standish was sent to Wessagusset (now the town of Weymouth) to kill those implicated. Historians of the Cape assume that Aspinet, sachem of the Nausets, either went into hiding or was killed, because he disappears from the historical record at this date. Numerous other Nausets died of disease after Standish's attack (**Freeman 1965**:I:109 [1858]; **Nickerson 1958**:53, 59; **Thacher 1835**:50-57).

The removal of Aspinet and other Cape sachems changed the political dynamics between native groups. The Monomoyetts, led by the sachem Mattaquason, gained ascendancy. At their historic peak, they controlled a territory that extended from Allen's Harbor in Harwich Port to Rock Harbor Creek in Orleans. Their northern territorial boundary ran eastward across Town Cove to Pochet Island in Orleans (**Nickerson 1958**:56). Nickerson notes that "pochet" was a Native word meaning "dividing place." This suggested that the northern part of Orleans may have also been a boundary between the Nausets and the Monomoyetts earlier in the Contact Period.

Native American trade with the English dropped off by the late 1620s, and trade with the Dutch increased. This shift in trading partners was orchestrated by Native Americans because the Dutch offered cloth and better-quality trade goods. In a review of primary texts, Bragdon found that by the 1640s natives were trading baskets and brooms they had made (**Bragdon 1988**:129; **F. Freeman 1965**:I:111 [1858]).

In the early 1640s Plymouth Colony settlers were considering a relocation to Eastham. During the same period, laws were enacted forbidding any Native American from selling or leasing land without the permission of the Plymouth government. These laws enabled Plymouth to obtain almost exclusive control over land transactions. The Native Americans were also forbidden from purchasing arms, ammunition, canoes, or horses (**Freeman 1965**:I:171 [1858]).

In 1644 Edward Winslow was elected governor of Plymouth Colony, and land was purchased from Mattaquason of the Monomoyetts and the sachem of the Nausets (**Freeman 1965**:I:172 [1858]; **Nickerson 1958**:56). The Nauset Purchase included the lands east of Town Cove to the Atlantic Ocean and ran south to the junction of present-day Monument Road and Route 28; Nauset Heights was reserved for native fields. Nauset people retained the privilege of digging shellfish in Town Cove, and they received a share of whale blubber from drift whales. Also set aside was a parcel of land on the Neck in South Orleans stretching down to Little Bay between Arey's Pond

and Pleasant Bay (**MHC 1984b**:7; **Nickerson 1958**:60). This parcel, called Portanimicut, has been interpreted by many Cape historians as a native "reservation" designed by the English. Mattaquason, however, may have created this enclave to facilitate political access to the Nauset sachemship.

Some Nausets did use Portanimicut because 14 years later, in 1658, Joseph Rogers purchased a tract of meadows there from Pomo, the proprietor, and Francis, the sachem of the Portanomicut and the Nausets (**Freeman 1965**:I:227 [1858]).

Epidemics hit the Lower Cape in 1647-1648 (**Freeman 1965**:I:212 [1858]). Their impact on the native population is unknown. If Native Americans suffered a high rate of mortality, subsistence strategies and settlement patterns may have been altered in the mid-seventeenth century.

An Act for Promoting and Propagating the Gospel among the Indians of New England passed in 1649, and missionary efforts were initiated throughout the Cape by the Reverend Richard Bourne. In 1657 laws were passed "regulating the lives and conduct of the Indians" which required the Court of Assistants to appoint an overseer for them. Overseers and tithing men in the towns with Native American populations were required to appoint native constables annually, who were to attend the courts held for regulating "Indian affairs." Concern over shifting settlement patterns and ensuing land disputes led the General Court in 1660 to issue a law forbidding "foreign Indians...to come to another tribe's plantation" (**Freeman 1965**:I:200-201, 238, 305 [1858]).

In 1664 the Reverend Richard Bourne reported the following locations of native settlements and the number of residents: Meeshawn in Truro and Punonakanit in Wellfleet had 72 persons; Potanumaquut or Nauset in Eastham-Orleans had 44 persons; and Manamoyik in Chatham had 71 persons (**D. Gookin 1966**:196-197 [1792]).

Mattaquason retained control of the Orleans area, and the deed of sale of the Nauset Purchase was confirmed in 1666. Pochet Island, which Mattaquason had previously reserved for native use, was now added to the land purchase (**Nickerson 1958**:60). In 1670 Mattaquason conveyed several parcels of land to his children. He deeded Cochpinecate Neck, at present-day Old Harbor in North Chatham, to his daughter, Sarah Quason. Another daughter, "Cussen's Squaw," was deeded the uplands at Tom's Neck where Chatham Light now stands. She lived at least to the year 1682 on this property. Old Skinnecut's Wife, a third daughter, received the "neck" in South Harwich. This probably included the area between what is now known as Round Cove and Muddy Creek.

Native American sites during this period were occupied seasonally. They were less than one acre in size, and contained wigwams and food processing and storage facilities. No evidence of palisaded sites has been found. Mattaquason's wigwam site was reputed to have been located on the south bank of Ryder's Cove between Ryder's Cove and Crow's Pond in Orleans (**Loparto and Steinitz 1987**:72; **Nickerson 1958**:60).

Tensions leading up to King Philip's War of 1675-1676 were increasing, and in 1671 the Pamet, Nauset, and Monomoyett populations were required to "engage themselves to fidelity." Two years later the General Court ruled that natives could be worked for debt; those found drunk could be fined and whipped; idle natives could be bound out for labor; and any theft by a native should be "restored fourfold." In 1674 the natives renewed a good-faith covenant with the colony (**Freeman 1965**:I:266, 276, 278 [1858]).

Colonial Period (1675-1775)

When King Philip's War broke out in 1675, the Native American people on the Cape found themselves in a difficult position. Most remained neutral, and some even fought on the side of the English. Native Americans who served alongside the English were compensated differently. White soldiers were compensated through the sale of prisoners and land, while Native auxiliaries were paid with the plunder they could take (**Freeman 1965**:I:282, 287, 289, 294 [1858]).

Native Americans who served alongside the English were compensated differently. White soldiers were compensated through the sale of prisoners and land, while Native auxiliaries were paid with the plunder they could take.

Within the English community there were conflicts over how to treat the native population on the Cape. Native Americans were an important source of labor for the English. Day labor, "in house service," and seasonal farm labor were recorded by the late seventeenth century. They also gathered and cultivated produce to sell to local merchants. It was, however, as slaves that they were more highly valued during King Philip's War; more than 1,600 persons of unknown origin were sold at Plymouth (**Bragdon 1988**:129; **Freeman 1965**:I:293 [1858]).

After King Philip's War, tensions between colonists and Native Americans centered on access to resources. For example, in 1680 Eastham officials heard about how the "Indians were doing damage to the town commons by cutting pine-knots to make tar, and thus injuring the timber trees, measures were taken to prevent the like trespass in the future" (**Freeman 1965**:II:369 [1862]).

These two populations coexisted after the war, with the English attempting to acculturate the Native Americans further. The Reverend Samuel Treat, who in 1672 had been appointed as minister to the parish at Eastham, preached to both English and Native American congregations. His life and work were the subjects of studies by, among others, **Sibley** (1881:304-314) and **Sprague** (1866:183-186). The location of Treat's home is the subject of ongoing research by the NPS (**Morrill 1994:** personal communication; **Holmes et al.** (1994a).

By 1693 Treat reported that there were 500 Christianized Indians in his district, which included Eastham, Harwich, Chatham, Wellfleet, and Truro. Four native preachers operated under his supervision, and four native schoolmasters taught reading and writing (**Kittredge 1987**:44-45; the original text is in a letter to the Rev. Increase Mather, August 23, 1693, reprinted in **Sprague 1866**:184). These Native American congregations lived in communities in peripheral areas. Their loosely formed "reservations" included a meetinghouse and often a school (**Loparto and Steinitz 1987**:86). For example, a native meetinghouse was built in what is now Orleans before 1698. There likely was a cemetery associated with this meetinghouse, because sometime after 1698 Orleans built a new meetinghouse and a new adjoining cemetery on Route 28 towards Chatham (**Barnard 1975**:33).

In 1698 a visitor to the Lower Cape gave the following account of native settlements and their leaders:

> At Ponanummakut, Thomas Coshaumag, preacher and school master. Their rulers William Stockman and Lawrence Jeffries. Families twenty-two. Moses teaches school here. At Eastharbor and Billingsgate, Daniel Munshee, preacher; Daniel Samuel, ruler. About twenty houses, in some of which two families. At Monomoy, in which fourteen houses, John Cosens, preacher and school master. Rulers John Quossen and Menekish. At Sahquatucket, alias Harwich, fourteen families, to whom Manesseh preaches. Joshua Shantam, ruler. Many among these, almost every head of family, are persons capable of reading scripture (**Hawley 1809**:133).

An additional "praying town" may have been established as late as 1700 in Wellfleet, when the community of Eastham voted to support a teacher and to establish a school district in the northern part of town. There was likely a substantial population of Native Americans living in the area at the time. In 1715 the proprietors of Eastham set aside two parcels for the use and benefit "of such Indians as were proper natives of the town." One was located at James' Neck, somewhere in Wellfleet. Another tract, referred to as the "Indian woodlot," was located at the Wellfleet-Truro line near Ryder's Pond and along Pamet Point Road (**Freeman 1965**:II:377, 653 [1862]).

During the eighteenth century, Native Americans living on the Lower Cape practiced an economy that varied by season and was based on many different resources. Small-scale agriculture continued to center on the maintenance of single-family groups. Animal husbandry was limited, and the gathering of wild foods, hunting, fishing and trapping remained important (**Bragdon 1981**:116-117). In addition, when the population as a whole on Cape Cod became increasingly dependent upon maritime resources in the 1700s, native men worked on whaling vessels, following whales north to Arctic waters and the Davis Straits (**Yentsch 1988**:151). They also served as soldiers in King George's War (1744-1748), the French and Indian War (1754-1763), and the Revolutionary War. In their absence, their families probably spun, wove, and manufactured tailored clothing, brooms, and baskets for sale (**Simmons 1986**:19).

In 1711, the children of John Quason, the son of Mattaquason, deeded almost all of the remaining native lands in the area of Chatham to whites. This "Quason Purchase" was also known as the "Sixteen Share Property Deed." Mattaquason's descendants did reserve two tracts of land for themselves: one known as Ashaonkton and another to the west of it, both located in the vicinity of what is now Round Cove and Muddy Creek at the Harwich-Chatham border. Their meetinghouse was closed in 1720, reflecting a sharp decline in the native population there. Several men from this area, however, are reported to have served during the French and Indian Wars (**Nickerson 1958**:64-66).

In 1717 Reverend Samuel Treat of Eastham died. Not until 1762 did another English preacher serve the native American population of that community. Mr. John Ralph became their Native preacher, and a list of his congregation included 52 men, women, and children (**Barnard 1975**:33-34). Ralph's congregation may have encompassed more than one native community, since few inhabitants were reported in the next few years. By 1763 there were five Native Americans reported living in Eastham (**Rich 1988**:31 [1883]). In 1765 four Native Americans were reported to be living in Eastham, 11 in Wellfleet, one in Truro, and none in Chatham. Harwich, however, did have 91 Native Americans who could have been members of John Ralph's congregation (**Benton 1905**:92-93; **Freeman 1965**:II:396 [1862]).

Federal Period (1775-1830)

In the early nineteenth century, Native American populations and their collective landholdings declined. Parcels of land occupied by Native Americans during this period were usually limited to a few acres. Nuclear and extended families, who had intermarried with African-Americans and Cape Verdeans, occupied these tracts (**Woodson 1920**). Settlement and subsistence patterns changed with the introduction of private property.

The secondary historical sources addressing the Lower Cape during the Federal Period contain only anecdotal information about Native Americans. For example, they report that the great-grandson of Mattaquason of Chatham lived at Round Cove in Harwich until about 1789. His cousin, Hosey Ralph, lived nearby at Ashaonkton at the

Harwich-Chatham line until 1800. Her husband, Michah Ralph, died there in 1816 (**Nickerson 1958**:63, 66). Prior to his death, five Native Americans were recorded living there in 1801 (**Barnard 1975**:34). Despite this apparent decline in numbers, a new Native American meetinghouse was built in Orleans in 1790 (**MHC 1984c**:12), which suggests that an active native community existed in that area. In 1792 Nathaniel Freeman of Sandwich wrote to the Massachusetts Historical Society that the Indian population on the Cape had been greatly reduced. Truro had one Native American living there, and Potanumaquut (Harwich-Orleans) had only six or seven people (**Freeman 1965** II:230-232 [1862]; **Rich 1988**:31 [1883]). In 1799 the Town of Wellfleet voted to let out Indian land for their support, and in 1802 voted to repair their house. In 1820 their lands were sold in Orleans (**MHC 1984c**:10).

Early Industrial Period (1830-1870)

The last recorded Native Americans to live in Orleans were Dorcas Hammond, who died at age 92 in 1863, and Ruth Ned, aged 95 years, who had become a member of the Orleans Congregational Church in 1803. She lived on the north side of Pond Street about 500 feet from Route 28 (**Barnard 1975**:34).

Undoubtedly, other Native Americans survived on the Lower Cape during this period, but secondary sources contain virtually no substantial discussions of these populations.

Archeological Implications

Native American Settlement. This section addresses the Native American presence from post-Contact times through the nineteenth century. Immediately following the Contact Period, house forms, tool types, and lifeways would have been similar to their prehistoric forebears. However, European goods would soon have been entering into Native American material culture. From the seventeenth century onward, European lifeways and technology were increasingly important to most native inhabitants, making it difficult for archeologists to distinguish Euro-American from native sites. Recent excavations at the Simons House site, the home of an eighteenth-century Native American mariner, were virtually indistinguishable from those at sites of early Euro-Americans (**Savulis 1988**).

Archeological Evidence. Early shelters and sites would be similar to Late Woodland Period sites, with the possibility of an admixture of European and native artifacts.

Settlement patterns would be predominantly dispersed in the early years following European contact, and in many cases distant from European settlements.

Recorded sites dating to the time the colonists arrived include burial grounds (palisaded, in at least one case), individual farmsteads, village sites, underground storage facilities, corn fields (**Mrozowski 1994**).

Several general site locations are known from the historical record. In Truro, they include Stouts Creek, East Harbor, Head of the Meadow, and locations along the Pamet River. In Wellfleet is Wellfleet Harbor. In Eastham, there is Town Cove, Nauset Marsh, and MHC site WL-FHA-7, a possible native reservation. In South Orleans is Portanimicut, a native reservation.

Native Americans were increasingly engaged in European horticulture, fishing, clamming, crafts, and drift whaling. It may be difficult to distinguish native sites from contemporary Euro-American sites. Natives also worked on whaling vessels and served as soldiers in the eighteenth and nineteenth centuries. Other contexts in this volume such as Maritime and Agriculture should be reviewed.

Early settlements and house sites were seasonal occupations. These would have included small temporary houses or wigwams. Palisaded sites were rare except for the observance of at least one surrounding a burial ground.

There was considerable intermarriage with other ethnic groups, so that Native Americans in some cases blended with Cape Verdeans and African Americans. Material culture may reflect a mixture of the various cultures.

There was a recorded Native American meetinghouse and possible cemetery in Orleans (pre-1698) and meetinghouse in 1790. Such sites are best detected archeologically through large horizontal excavations. This may be the only effective strategy to identify them. However, sensitivity to burial issues would discourage such an approach unless a potential burial ground is threatened by development.

Features would include post molds related to structures and cooking supports, storage pits, fire pits, cooking hearths, etc., similar to features from the Late Woodland Period.

Artifacts would be a mix of native and Euro-American items. Native lithics and possibly ceramics could be mixed with European goods, especially brass kettles, spoons, axes, etc.

Eighteenth- and nineteenth-century sites could include settlement clusters with a meetinghouse, school, and cemetery.

Cemeteries from the various epidemics are likely in many locations.

Research Questions. How did Native Americans mix native tools with European tools?

How early did house forms change from wigwams to European-like structures?

To what extent did disease epidemics affect native people on the Cape in the early seventeenth century? Are these effects visible archeologically in settlement patterns, burials?

Can archeology contribute to our understanding of the timing and geographic patterning of disease epidemics?

Did settlement patterns and seasonality of occupation remain the same as in pre-Contact times? If so, for how long?

Was settlement of "reservations" clustered or dispersed?

What were economic conditions in the reservations?

From the seventeenth century onward, European lifeways and technology were increasingly important to most native inhabitants, making it difficult for archeologists to distinguish Euro-American from native sites.

Was there evidence of strife between Euro-Americans and Native Americans beyond what is recorded in English histories? English documents suggest that there was a peaceful co-existence between Euro-Americans and native people on the Cape. Does the archeological record support or contradict this?

To what extent did Christianized natives maintain traditional practices and how were these practices integrated into native Christianity? To what extent were traditional Native practices replaced by Euro-American lifeways?

What were the changes within native communities once contact occurred? How did these changes vary within and among different native communities?

Native Americans intermarried with several incoming ethnic groups. How might this be evident in the archeological record?

Can archeology and material-culture studies provide information on Native American craft production for markets in the eighteenth and nineteenth centuries (e.g., **McMullen 1994**)?

Infrastructure. Native trails linked the various native communities and tied the communities to places where food and raw materials could be gathered. However, the trails are poorly documented and many trails became modern roads and highways. Some communities in the later periods had meetinghouses, cemeteries, and schools.

Special Research Requirements. Deeds are useful in tracking the last Native Americans to hold property on the Cape. Many deeds are available through the Plymouth County Commissioners Office (most are transcribed), the Plymouth County Registry of Deeds, and the Massachusetts Archives. Other information on local Native Americans is available in the Paine papers at the Harwich Museum, and Burke's Bibliography at the Nickerson Room, Cape Cod Community College.

Chapter III

AGRICULTURAL AND RURAL LIFE

A Note on Sources

Multiple Economic Activities and Rural Communities

Chronology

Archeological Implications

Although agriculture is not the first thing that comes to mind for most people when they think of Cape Cod, it has been an important part of the region's history. When people from Plymouth settled the Nauset Grant, farming was their main activity.

Both Native Americans and English settlers grew corn as the principal crop. The English successfully grew wheat in the mid-seventeenth century, until caterpillars and blight destroyed it. Excessive cultivation depleted the soil, and with the decline in productivity, farmers increasingly turned to maritime resources.

Many town histories, as well as oral traditions, oversimplify this shift to the sea, picturing farmers abandoning fields for fishing boats. Yentsch's study of eighteenth-century practices, as revealed by probate records, suggests a more complex situation. Among her conclusions, Yentsch states that "It might be more accurate to think of the Cape's subsistence base as primarily agricultural yet supplemented by communal fishing and shared resources, replaced by a maritime resource base complemented, in turn, by particular farming activities and a limited use of other wildlife resources" (**Yentsch 1988**:160).

When political events such as the American Revolution and the War of 1812 closed access to the sea, farming again increased. Agriculture absorbed the labor that was put out of work, but intensified farming sometimes had negative consequences for the environment and economy.

Improvements in transportation routes to the American West brought new farm products into competition with those from the Cape. Generally, the Cape could not compete with these other agricultural areas. For example, there was a boom in sheep raising on the Cape in the early nineteenth century, but this diminished in response to factors beyond local control.

Local railroads did have a beneficial effect on some types of agriculture on the Cape. They opened urban markets for perishable products like vegetables, milk, poultry, and eggs. Specialty crops such as strawberries, turnips, and cranberries also became more prominent in the late nineteenth century.

The twentieth century has seen major changes in land use on the Cape, primarily due to the demands of tourism. These have generally not been compatible with agriculture. However, the changes could occur only after agriculture declined enough to free up large tracts of land for real estate development.

Agricultural development on the Cape is depicted in Figure 54.

A Note on Sources

There are many good works on the environment of the Cape and on other factors important to agriculture. Altpeter (1939) is a source for forest development. The most recent U.S. Soil Conservation Service (SCS) soil survey of Barnstable County (**Fletcher 1993**) has a wealth of environmental data. **Mahlstedt and Loparto** (1987) is a topographic overview of the Cape and Islands. **Oldale** (1992) is a very readable account of the geological background of the region. **Godfrey et al.** (1978) and various field guides are also useful for plant and animal life. For the pre-Contact Period, **H. Russell** (1980) should be consulted for his text and bibliography. **Conkey et al.** (1978) is another starting place for an overview, as are other articles and the bibliography in Volume 15 of the *Handbook of North American Indians* (**Trigger 1978**).

Historical accounts of Plymouth, such as **Bradford** (1981 [1856]) or *Mourt's Relation* (**Heath 1963** [1622]), are essential for descriptions of life among the Pilgrims; they also contain observations of native agricultural practices. Secondary works (e.g., **Deyo 1890**; **Freeman 1965** [1858, 1862]; **Kittredge 1987**) provide some information on the early years of English settlement.

Old, descriptive sources for environment and agriculture include gazetteers (e.g., **Barber 1839**; **Hayward 1846**; **Nason 1874, 1890**) and the *Collections of the Massachusetts Historical Society*, Series 1, Vols. 3 and 8.

Among the best recent works is **Cronon** (1983). This is an important book; it details the ecological consequences of English settlement in New England and contains a good bibliographic essay. **Rutman's** study of Plymouth Colony agriculture (1967) is a brief but informative account. Two studies focus on the Cape: **Rubertone** (1985) on the Lower Cape, and **Yentsch** (1988) on the eighteenth century. Data for the Cape and models for interpretation are found in **Stott** (1987:226-238), **Loparto and Steinitz** (1987), and **Steinitz and Loparto** (1987) in the MHC regional study (**Bradley 1987**); the latter contains a bibliography of works that can be obtained readily. **McManamon and Childs** (1985) discusses the historical archeological field survey conducted at the Cape Cod National Seashore. Comments on Cape agriculture are found in **Finch** (1985) and **Kingsolver** (1985). One source that is not easily accessible is **Dickey** (1978), a doctoral dissertation written at the University of Chicago (which does not participate in microfilming programs).

For the basic history of agriculture in the northern United States, one should turn to **Bidwell** (1972 [1916]), **Bidwell and Falconer** (1925), and **H. Russell** (1976). Most general histories of agriculture, however, rarely supply the level of detail needed for the Lower Cape.

Town histories are quite likely to be repetitive of other sources or anecdotal on the subject of farming. As a rule, the older town histories (e.g., **Rich 1988** [1883]) are more likely to provide substantive material than more recent and popular works.

At the town level, state census data provide the best information. Unfortunately, federal census records usually record data by county; examination of the original census returns would be necessary to fully use this resource. State reports on agriculture, research pamphlets published by the state agricultural research stations and the Massachusetts Agricultural College, and periodicals from the nineteenth and twentieth centuries are other sources on agricultural history. A repository that contains many such documents is the University Library of the University of Massachusetts at Amherst.

There are also works that address specific crops and animals. For example, cranberries are discussed in **Franklin** (1948), and in a survey prepared for park interpreters by **Hicks** (1979) and available in the library at Cape Cod National Seashore; these are a starting place for more detailed studies. There is a lecture on the history of sheep raising in Massachusetts (**Grinnell 1892**), and a history of sheep in America (**Wentworth 1948**).

Multiple Economic Activities and Rural Communities

Until the recent large-scale shift to tourism, other economic activities on the Cape did not generally conflict with agriculture. It was possible for farming, fishing, industrial activity, and even some tourist services to coexist. Farmers could be fishermen, and mariners were a potential pool of agricultural laborers. Within households, some members (women, young boys, and old men) could work the land, while young men went to sea (**Yentsch 1988**:159).

With specialization in equipment and skill there arose a division between maritime and land-based activities. For example, deep-sea whaling could not be done by everyone, and animal husbandry increasingly required special skills.

Nonetheless, even today many Cape inhabitants practice more than one occupation in different economic spheres. Having many vocations is one characteristic of a rural society; it permits people to use different resources as they become available. This strategy is particularly well adapted when the resources are seasonal and unpredictable.

What is less evident on Lower Cape Cod today is another aspect of rural communities of the past. Previously, there was a cohesiveness that clearly demarcated who was a member of the group. People knew each other, depended on one another, and kept in contact through a variety of contexts. The arrival of new, part-time, or temporary inhabitants disturbed the insularity of rural communities. Developments in transportation and communication also contributed to ending the distinctiveness of rural life on the Lower Cape.

Chronology

Contact Period (Before 1620) and Settlement Period (1620-1675)

The Environment. Native Americans used many different resources and modified the Cape's environment. They burned underbrush to promote the growth of tender shoots that attracted deer. "A great deal of country cleared up and planted," according to Champlain (**H. Russell 1976**:4, 1980:51). Marshes and swamp areas, on the other hand, were not modified by Native Americans, and early English explorers found impassable tangles of brush (**Finch 1985**:109-110).

According to both *Mourt's Relation* and William Bradford, when the Pilgrims arrived in 1620 they saw forests covering much of the Cape; Bradford wrote of "a hideous and desolate wilderness" greeting the Pilgrims (**Bradford 1981**:70 [1856]; **Kittredge 1987**:10-11; **Heath 1963**:39 [1622]). A few years earlier, in 1614, Captain John Smith did not find the Cape's forests very impressive, but a scrubby waste (**H. Russell 1980**:12). One student of the Cape's forest history noted that the trees included white pine, pitch pine, hemlock, beech, yellow birch, ash, hickory, red maple, red oak, white oak, sour gum, and holly. In drier locales with a southern aspect were white oak, black oak, scarlet oak, white pine, pitch pine, and possibly beech trees (**Altpeter 1939**). Sassafras, a tree valued by European explorers of the New England coast, also grew here.

Among the wild plants that had economic value were cranberries (*Vaccinium macrocarpon*), beach plums (*Prunus maritima*), many other berries and nuts, and native hemp (*Apocynum cannabinum*) (**H. Russell 1980**:61-62, 72). Native Americans cultivated plants as well, successfully growing corn (*Zea mays*), beans (*Phaseolus vulgaris*), squashes (*Cucurbita* spp.), and tobacco (*Nicotiana tabacum*).

Farmland on the Lower Cape. The prospect of establishing farms on the Lower Cape motivated the colonists to return to the Cape, a place that they had rejected in favor of Plymouth more than two decades before. Good soil attracted them to the Nauset Grant.

Rubertone (1985) analyzed the agricultural potential of the Lower Cape by determining the amount of arable soil for four towns (Eastham, Wellfleet, Truro, and Provincetown). She found that of these four, Truro had the greatest amount of arable land (6,541 acres, or 47 percent of its area); Wellfleet was second (5,445 acres, or 40 percent); Eastham was third (3,713 acres, or 37 percent); and Provincetown was last (with only 98 acres, or 1 percent of its land, suitable for agriculture).

Rubertone went into further detail by examining arable land according to the classification system of soil scientists. Among the best soils of the Lower Cape for

The arrival of new, part-time, or temporary inhabitants disturbed the insularity of rural communities. Developments in transportation and communication also contributed to ending the distinctiveness of rural life on the Lower Cape.

agriculture are the Merrimac, Paxton, and Woodbridge soil series. The Deerfield and Windsor series have fair agricultural potential. Carver soils are poor agriculturally, and some Merrimac and Windsor soils are located on steep slopes unsuitable for agriculture. Using these soil types, Rubertone determined that of the four towns she studied, Eastham had the greatest amount (266 acres) of good to fair soil for agriculture, making it the most desirable place for settlement for farming, from a soil scientist's point of view. As for the other three towns Rubertone studied, Wellfleet had none of the best soil, Truro had only 39 acres of it, but Provincetown had 98 acres of good to fair soil. This last finding contradicts the commonly held assumption that no good farmland exists at the tip of the Cape (**Rubertone 1985**:40-43).

The Plymouth colonists who went to the Lower Cape had their own system for classifying soils that differed from that of modern soil scientists. On this topic Stilgoe comments, "Colonists carried to North America the soil lore of their fathers' fields and wrote always with old-country standards in mind" (**Stilgoe 1982**:142). Thus, people from Plymouth Colony were attracted to the Eastham area because of the rich "blackish and deep mold," which they considered excellent to a "spit's depth"—a spit being equal to nine inches (**Heath 1963**:39 [1622]). Grasslands with light and sandy soil, on the other hand, were thought to be poor, unproductive, and to be avoided.

It should be noted, however, that the soil the Pilgrims found so good was at the northern tip of the Cape. In Nauset, they later found the soil "sandy, not so good for corn as where we are [i.e., Plymouth]" (**Heath 1963**:72 [1622]).

Settlers had one more idea in mind when locating where they would lay out their farms. Unlike the Native Americans, who used hoes for tilling small plots, they used plows; this technology works best in contiguous fields and is less efficient for scattered plots. Consequently, they preferred expanses of level land for farms.

Early English Settlement. In the Nauset Grant, settlers planted corn and beans, hunted, and fished from shore (**Hatch 1951**:21; **Kittredge 1987**:59). They were, however, dependent on supplies from Plymouth during their first years on the Lower Cape.

Every farm in Nauset had an orchard, vegetable garden, turnip yard, and tobacco yard. Each one probably had some cattle or sheep that were allowed to roam at will; swine also were turned loose, as long as their noses were ringed to prevent them from doing damage (**Kittredge 1987**:71-72). Field improvements probably did not include many stone fences, as most of the Cape has few stones; an exception to this is around Fort Hill in Eastham, where glacial boulders were available. Without many stones for fences, ditches were used to control livestock (**H. Russell 1976**:309). Houses probably resembled the structures found at Plymouth. Among the material possessions the settlers had were tools for farming, woodworking, cobbling, and other crafts.

Farms were generally small and dispersed over the countryside. Before 1659, the average farm size was 31 acres, which was typical for English farms of the time. An exceptionally large landowner was Thomas Prence, who had two hundred acres of the richest land. Landowners selected diverse types of land in order to use as many resources as possible, but they also tried to consolidate holdings into compact farms. These farms were held within families for long periods of ownership (**Dickey 1978**:14; **Pratt 1844**:13; **Rockmore 1979**:4-7).

Two pieces of common land were located in the northern area of Nauset, now Wellfleet. Use of this land for wood, salt hay, and shellfish was regulated. These common lands were divided up between the late seventeenth century and 1715 (**Rockmore 1979**:5).

In the Plymouth Colony, English farmers tried to replicate the farms they knew in England, planting wheat, oats, and rye (**Stott 1987**:226). However, corn soon became the principal crop. Historians must nevertheless be cautious about drawing conclusions on the importance of native species in relation to European crops. If they rely on seventeenth-century reports by travelers, they will "envision New England as a land of Indian corn and pumpkins" (**Rutman 1967**:29). The travelers who saw the farms of the period tended to emphasize the unfamiliar, neglecting the well-known European grains. As for the Lower Cape, whether wheat or corn was more significant to the settlers of the Nauset Grant in 1644 is a question for further study.

Colonists did plant wheat successfully until 1646, when caterpillars attacked the wheat harvest (**H. Russell 1976**:41). Blights hit southern New England wheat fields as early as 1663, returned the next year, and grew worse as the century wore on. The black-stem rust destroyed New England's capacity to grow wheat, and the imported barberry bush (*Berberis vulgaris*) served as a secondary host to the fungal parasite responsible for the devastation (**Kupperman 1984**:22; **Stilgoe 1982**:204; **Wyman 1969**:129).

Corn was not subject to this blight. Long grown by Native Americans, it was well-adapted to the area. After contact, Native Americans continued to grow sufficient quantities to sell to the settlers. English farmers abandoned the Native American technique of planting corn with beans and squash in hills; level farming increased the yield (**H. Russell 1976**:277). Valued for human consumption and animal feed, corn also sometimes served as a medium of exchange in economic transactions.

No matter what grain was grown, some means to grind it was needed. The Lower Cape lacks swift-running rivers, but the colonists built some water-powered mills, as well

as windmills and tidal mills. Windmills were set on pivots and could be turned in any direction to take advantage of the wind. Easily taken down and relocated, the windmills that survive today are not situated where they were originally built (**S. Rich 1988**:469 [1883]).

In addition to grains, other plants were cultivated. At Nauset Heights winds damaged flax, but elsewhere on the Cape flax was more successful. This can be attested to by the names of several ponds that reveal where the flax was processed (**Green and Sachse 1983**:47). Orchards in the seventeenth century consisted of apple, pear, and cherry trees; a famous pear tree planted by Governor Prence still bore fruit after two centuries (**Kittredge 1987**:72; **H. Russell 1976**:90).

Extensive salt marshes provided grasses (*Spartina* spp.), which were mown for cattle fodder and bedding in stalls and mangers. English hay was sown and cut in uplands and was used for fodder and bedding for horses (**Rich 1988**:190-191 [1883]).

Agriculture on the Lower Cape began in a period of depression. The Plymouth Colony had found a market for grain and cattle in the Massachusetts Bay Colony. New arrivals in Massachusetts Bay towns needed food to survive their first year. During the Great Migration to Massachusetts Bay, from 1630 to 1640, Plymouth farmers sold their grain and cattle to merchants in the colony to the north, and prospered with rising land and cattle prices. When immigration declined, the prices of corn, wheat, and cattle fell in 1642. No alternative market could be found in England, since that country experienced a long-lasting drop in agricultural prices starting at the same time (**Rutman 1967**:15; **Thirsk 1984**:39-40). A further difficulty in New England was particularly cold winters (**Kupperman 1984**:11, 22).

The situation in New England, however, soon improved as merchants opened new markets in the Azores, Madeira, Spain, and the Caribbean. Prices for grains almost reached the pre-1642 level, but cattle prices remained low. Consequently, grain production in the Plymouth Colony increased as open lands were used for planting; cattle were restricted to fenced pastures, were used for plowing meadows into fields for grain, and became a convenient source of fertilizer (**Rutman 1967**:16). Not only did the economy get better, the weather did too: until the 1680s, winter temperatures were milder (**Kupperman 1984**:21).

Changes in agriculture in Plymouth itself and many of the other towns of the Plymouth Colony are known, but the effects of price fluctuations and the opening of new markets are not clear for the Lower Cape. Research questions to be investigated are whether Nauset settlers participated in the shift from cattle to grain production, whether unfenced cattle were a significant part of early agriculture, and to what extent farmers were dependent on shipping cattle and grain to Plymouth or directly to Boston for sale.

Intensified farming had consequences for the environment. Soils that were formerly protected by tree-cover dried in the sun and blew away. An increasing dependence on soil-exhausting corn also created problems. Since the English used plows to cultivate more land than the Native Americans had done with hoes, soil fertility was depleted quickly. Until livestock were confined, there was no ready supply of manure to replenish the fields. To improve the quality of overworked soil, the settlers used fish as fertilizer (**H. Russell 1976**:127). Burying fish in mounds with corn, however, attracted wild animals searching for food; fish oil also had a negative long-term effect on the soil. On top of this, the smell of rotten fish filled the air around the corn fields (**Cronon 1983**:150-152).

By 1663, Nauset's soils were depleted and the residents began expanding into neighboring lands, including the bay side of Wellfleet (**Crosby 1946**:246-247). Historical documents show the settlers owning land in Pamet (Truro) as early as 1689, and that they made further purchases of land there from Native Americans in 1697 (**Rich 1988**:80-81 [1883]). Provincetown and Truro were probably brought under control of people from Plymouth between 1675 and 1680 (**Hatch 1951**:22; **Vorse 1990**:66).

Colonial Period (1675-1775)

Soil erosion was severe in this period. In 1725, a large part of the Province Lands at the tip of the Cape was described as a desert. By the 1730s, winds had swept the exposed soils into sand dunes that drifted toward Provincetown and Truro's town meadows. Yet in 1740, the Provincelands still supported large numbers of "neat cattle" (i.e., unspecified bovines) and horses, whose hooves churned the denuded soils.

Attempts at Conservation. In 1739 the Massachusetts General Court passed an act forbidding grazing in affected areas. It required residents to plant beach grass (*Ammophila breviligulata*) each April as a conservation measure (**Cronon 1983**:149; **N. Smith 1922**:154). They also planted Scotch broom (*Cytisus scoparius*), native pines (*Pinus* spp.), bayberries (*Myrica pensylvanica*), and buckwheat (*Fagopyrum esculentum*) in an attempt to control drifting sand dunes (**N. Smith 1922**:108-109; **Wyman 1969**).

Provincetown inhabitants in 1745 were restricted to keeping only one bull and three yokes of oxen for the entire population. In addition, each family could maintain one horse and one cow, but innkeepers could have two cows. Furthermore, it was forbidden to cut any tree within 160 poles or 2,640 ft (a pole is the same measurement as a rod, or 16.5 ft) from the high-water mark (**Nordhoff 1970**:55). Despite these efforts, serious damage to the environment could not be repaired easily. A traveler wrote in 1794, that

what had once been an extensive "fertile spot, has become prey to the winds and lies buried under a barren heap of sand" (quoted by **Cronon 1983**:149).

Turning to the Sea. The first English settlers of the Lower Cape were farmers, not seafarers, even though they did use boats as their preferred means of transportation. Only when faced with declining returns from the land did farmers increasingly turn to the sea.

With increased use of marine resources, farmers provided the infrastructure and services required for maritime life. Beginning in the late 1600s and continuing for the next 150 years, they cut the remaining forests for timber for boat construction. Cutting the woods added to the environmental damage that included erosion, drifting sand, depletion of soils, and loss of indigenous flora and fauna. Islands near the Cape, used for timber and grazing, changed shape or disappeared completely (**Cronon 1983**:149; **Wentworth 1948**:42).

As Cape Cod's people depended more on maritime activities, they expanded their settlements on the Lower Cape. Small, unimportant fishing villages such as Provincetown emerged as centers for commercial fishing and related industries during this period. Land that settlers had not used intensively, such as most of Truro, was now occupied.

Intensive seasonal fishing surpassed agriculture in economic importance. Farmers did not abandon agricultural pursuits, such as animal husbandry and cultivation of grains, but they expanded their strategies to include subsistence and commercial maritime activities. Surplus agricultural labor turned to summer fishing, and during the winter months some men traveled by sea to Charleston, South Carolina, and other southern ports to work at a trade for the winter (**Morison 1921**:301).

An 1807 description of Truro still could speak of "lofty forests," but by 1820, the people of Truro had cut so much wood that they needed 30 ships to transport timber from Sandwich and Boston.

Federal Period (1775-1830)

The American Revolution and Agriculture. The British blockade and raids on coastal towns influenced agriculture in three ways. First, the blockade suppressed most maritime activities, and the labor that had been occupied at sea had to be employed on land. Consequently, agriculture intensified during the Revolution. Unfortunately soils were already depleted, and soil-improvement techniques, such as using fish as fertilizer, were unavailable. Thus, agricultural yields declined further. Second, since the Cape soils alone could not support the population that had been sustained by maritime pursuits, harvests represented a only fraction of subsistence minimums. The result was further intensification of agriculture and abandonment of conservation measures. Finally, animal husbandry was virtually abandoned during this period because people quickly turned to farm animals for meat. Dairy, sheep, and swine herds were slaughtered, as were chickens, ducks, and geese. A traveler to Brewster in 1809 described the negative effects the Revolution had on Cape Cod agriculture:

> Interrupted in their maritime pursuits, and deprived of employment in the fisheries, many of the inhabitants were compelled to resort to the land for subsistence. They were driven by necessity...to diminish the value of their lands by severe tillage...giving it little or no manure, until...[it] became reduced to the extreme of poverty (**Simpkins 1809**:74, quoted in **Stott 1987**:230).

Agriculture in the Early Years of the Republic. After economic improvement in the late eighteenth century, the people on the Cape experienced renewed problems during the Embargo of 1807 and the War of 1812. Not all of the effects of the War of 1812 were negative, however, since Cape farmers were able to sell their beef and vegetables to the British.

Conclusion of the war saw the passage of tariffs to protect American products; legislation in 1816 helped spur the domestic textile industries that needed wool. As discussed further below, there was an increase in sheep raising (**H. Russell 1976**:273-274). A result of this was that less-productive agricultural land was used for sheep pasture. Grazing sheep also increased soil erosion.

Another cause of soil erosion was harvesting timber. During the first half of the nineteenth century on the Lower Cape, the last forests were clear-cut to provide lumber for fishing and whaling vessels. An 1807 description of Truro still could speak of "lofty forests," but by 1820, the people of Truro had cut so much wood that they needed 30 ships to transport timber from Sandwich and Boston (**Finch 1985**:110). In order to continue farming, some Truro and Provincetown families imported garden soil in the holds of ships (**Edwards 1918**:144; **N. Smith 1922**:105).

Early Industrial Period (1830-1870)

Agricultural Workforce. Despite damage to the environment, agriculture remained important on Cape Cod. In the previous period, around 1820, 24 percent of the workers on Cape Cod and the Islands who reported an occupation said that they were engaged in agriculture; this is less than half the number in commerce (including maritime pursuits), but more than were employed in manufacturing. The proportion of the workforce in agriculture dropped in the first part of the nineteenth century, but it did remain as high as 30 percent for the town of Eastham in 1840. By 1865, there were between 50 and 100 farmers in Orleans and Eastham each, fewer than 25 in Chatham and Wellfleet each, and none in Truro or Provincetown (**Loparto and Steinitz 1987**:99, 116, 118).

When considering the numbers of workers in each sector of the economy, it should be kept in mind that farmers and other rural people had many different occupations. A "farmer" might have occasionally gone to sea, worked at a hand-craft trade, or earned cash through employment outside the Cape or in commercial transactions. This makes generalizations about each sector problematic.

Developments in Agriculture. During this period, agriculture in the United States became more mechanized, but Cape Cod farmers apparently did not follow this trend. Two questions for further research are whether they maintained older farming practices, and if they invested what capital they had in maritime enterprises and manufacturing rather than their own farms.

Another development was that transportation across the nation had become more reliable and extensive. Rural Cape Cod residents became connected to this transportation network. They had available to them coastal merchant vessels, commercial packets, and ocean-going vessels. In 1848, a railway linked Sandwich to the rest of the country; it was extended to Orleans in 1866, and then all the way to Provincetown in 1873 (**Edwards 1918**:112).

Many farmers became receptive to scientific advances in agriculture, and they founded organizations that promoted better agricultural methods as well as the interests of farmers. In 1843 and 1844 the Barnstable Agricultural Society was incorporated; all 13 Cape Cod towns were represented in its membership.

Sheep and Wool Production. After the War of 1812, sheep raising expanded throughout New England. Despite tariff protection, however, the number of sheep on the Cape fell between 1831 and 1845 (**Stott 1987**:234). With the loss of the tariff in 1846, the numbers of sheep dropped further (**H. Russell 1976**:353). Wool production on the Lower Cape fell from 2,788 to 375 pounds between 1837 and 1855 (Tables 1, 2, and 3). Only at the end of this period did wool production increase, although by 1865 it had not returned to 1845 levels (Table 4).

When considering sheep raising on the Lower Cape, it should be kept in mind that it did not have the same importance on the Cape as it did on the Islands. Furthermore, the Lower Cape was surpassed by Falmouth, Sandwich, and Barnstable as a sheep-raising area (**Stott 1987**:231).

Note also that when data on varieties of sheep were recorded (in 1855 and following), in this period there were only "common" sheep rather than breeds such as Merino or Saxony sheep. It is interesting to observe the insignificance of sheep-raising in Eastham and Provincetown, as they represent such different environments; sheep were not popular in Eastham because land could be put to other uses, and sheep probably could not be supported for long by the fragile grasses on the sand dunes of Provincetown.

Other Livestock and Animal Products. In addition to sheep, Cape Cod farmers kept horses, swine, neat cattle, and milk cows. The statistical summary of agricultural production for 1837 does not indicate the value of meat, milk, or butter (**Commonwealth of Massachusetts 1838**). Subsequent censuses show that butter production rose between 1845 and 1855 (Tables 5 and 6) but dropped significantly between 1855 and 1865 (Tables 6 and 7). This drop was accompanied by the marketing of milk. Changes in transportation encouraged dairy farmers to sell their milk directly rather than process it into the more easily preserved butter or cheese.

Like milk, eggs could be shipped fresh to markets because of rail transportation, even though the further reaches of the Lower Cape were not serviced by rail until after the Civil War. Water transportation may have played a part in the improved shipment of farm produce at this time.

Poultry became important throughout New England in the years before the Civil War. Chicken and eggs were no longer a sideline of farming, and new breeds of fowl were brought to America by sea captains looking for new varieties (**H. Russell 1976**:363). Orleans and Eastham were centers of egg production in this period; between 1845 and 1865 these towns actually led the state in egg production (**Stott 1987**:235).

Raising livestock for meat was another agricultural activity at the end of this period. Beef and pork, very little mutton, but some veal and poultry, were sent to market from the Lower Cape (Table 8). Demands for beef and pork during the Civil War may have contributed to the change in meat production.

It is worthwhile to put the Lower Cape's livestock enterprises into perspective by comparing the output of other places. According to the 1860 federal census, Barnstable County ranked 11th out of the 14 counties of Massachusetts in the number of milk cows; all of Barnstable County (not just the Lower Cape towns) accounted for less than 1.5 percent of the milk cows in Massachusetts. Other cattle in the entire county were less than 2 percent of the total number in the state; similar statistics can be cited for sheep and swine, as well as butter and cheese production (**U.S. Census Office 1864a**:74-75).

Hay. Livestock were fed in part with both salt hay cut from the marshes and English hay. Towards the middle of the nineteenth century, the Nauset marshes could yield 300 tons of hay. Diking of marshes increased the amount of fresh hay in relation to salt hay on the Lower Cape during this period, and ecological succession in marshes may have

resulted in shorter and finer sedges being harvested (**S. Rich 1988**:191 [1883]).

Cranberries. There are two major species of cranberry: the large American cranberry (*Vaccinium macrocarpon*) and the small cranberry (*V. oxycoccos*). As noted above, the former was harvested by Native Americans and early settlers alike; it is also the type now grown commercially in this country.

Around 1816 Henry Hall of Dennis noticed how well the wild cranberries grew when their vines had been covered with drifting sand (**Peterson et al. 1968**). This discovery led to the sanding of bogs, where sand is put on the peat surface of a bog being prepared for cultivation or is added to existing bogs.

New varieties of cranberries selected from the wild were cultivated beginning in the mid-nineteenth century. Among those that have been commercially important are Howes, selected from the wild in 1843; Early Black, selected in 1852; and McFarlin, selected in 1874 (**Hicks 1979**:15). In the 1850s, growers discovered that cuttings were the best way to propagate vines. By the 1880s, flooding bogs was used to prevent desiccation during the winter and early spring, as well as a way to control weeds and clear away debris (**Hicks 1979**:20-23).

By the middle of the nineteenth century, the cranberry was seen as a potentially important crop for the Cape: "It appears that these hitherto barren wastes will yet, on Cape Cod, be made a source of wealth to those who know how to take advantage of their adaptation to produce the cranberry," (Benjamin Eastwood, quoted in **Peterson et al. 1968**:2).

The size of, and changes in, cranberry production are not easy to determine from census data, since different measuring units were used. In 1855, Orleans had eight acres in cultivation, producing a crop worth $375; Eastham had five acres, and a crop worth $250; Wellfleet had only two acres and a crop of $100; and Truro was the leader on the Lower Cape, with 25 acres and a yield worth $1,200. Chatham and Provincetown had no reported cranberry production (**Commonwealth of Massachusetts 1856**).

In 1865, the cranberry harvest was reported in bushels. Provincetown was now the foremost producer on the Lower Cape, with 400 bushels. Chatham had 250; Orleans, 345; Eastham, 189; Wellfleet, 55; and Truro, only 140 (**Commonwealth of Massachusetts 1868**).

Although cranberries would be a major crop on the Cape, they were growing in other places as well. In 1854, for instance, every county in Massachusetts except Berkshire and Suffolk reported growing cranberries; the county with the greatest number of acres devoted to this crop was Middlesex, with 2,554, followed by Norfolk (807) and Plymouth (361). All of Barnstable County had only 197 acres of cranberries that year (1854 Massachusetts Board of Agriculture Abstract, quoted in **Peterson et al. 1968**:2).

Late Industrial Period (1870-1915)

After the Civil War, the national economy focused on resources from the Western frontier. Infrastructure (including railroads, grain elevators, stockyards, slaughterhouses, and freezing plants) and the increasing scale of business often made resources from a thousand miles away more profitable than those available locally. The Cape in general experienced a decline in all economic sectors during this period.

At the same time, the government stepped up measures to reinvigorate Massachusetts farming. Federal and state programs supported new efforts to develop "scientific farming," which emphasized maximizing profits, minimizing costs, mechanizing farm production, developing new strains of crops and animals, and employing conservation and fertilization techniques. In 1863 the state legislature created the Massachusetts Agricultural College (MAC), now the University of Massachusetts at Amherst. In 1882 MAC established the Massachusetts Agricultural Experiment Station in Barnstable, with the mission of helping Cape Cod farming.

Private and community associations were also formed. In 1890 the first cranberry growers' association was founded. Later, in the twentieth century, Portuguese immigrants who were strawberry farmers banded together to market their products (**Edwards 1918**:121).

Grain Production. Production of grain crops declined. Oats, wheat, rye, barley, and corn were grown in the early part of this period, but they were soon unable to compete with products from the West. Grains produced on the Lower Cape probably were used for livestock. The decline is made evident by comparing data on grain production for 1865 and 1885 (Tables 9 and 10).

Livestock and Animal Products. Farmers of the Lower Cape concentrated their efforts on providing meat (including poultry), milk, butter, and eggs for markets. Data from 1885, however, reflect the declines in the agriculture of the Lower Cape (**Commonwealth of Massachusetts 1887**). Meat production dropped dramatically between 1865 and 1885, from over 500,000 pounds to about 140,000 pounds (Tables 8 and 12). Poultry raising in Barnstable County shifted from Orleans, Eastham, and Wellfleet to Harwich and Barnstable in this period (**Stott 1987**:235). One new commodity that was produced was wild game from Orleans; there was also an increase in the supply of dressed poultry: chickens, turkeys, geese, and "other fowl," such as ducks.

Milk production in 1885 was less than half of the 1865 level, although the value of dairy products had increased sharply (Table 11). More milk was being turned into butter, with total butter production rising over the period.

Vegetables. Census data for 1865 did not report vegetable production for the six towns of the Lower Cape. It appears that they were not a major crop at this time (**Commonwealth of Massachusetts 1868**).

In 1875, vegetable production was listed in the census data (Table 13). Chatham's principal vegetable crops were pumpkins, beets, cabbage, carrots, cucumbers, currants, turnips, and potatoes, with a total value of $13,107. Orleans produced similar agricultural products but in a greater quantity than Chatham, with a value of $35,239. Eastham was second to Orleans in total worth of agricultural production, at $34,186. Wellfleet and Truro also grew these crops, but at lower levels, with a total agricultural production worth $20,557 and $19,799 respectively. Only Provincetown was a minor producer of vegetables in 1875, with a harvest worth a mere $3,000 (**Commonwealth of Massachusetts 1876c**). Table 13 gives vegetable production data for that year.

Comparisons over time using census data are complicated by variations in reporting methods. Also, in considering the dollar amount of harvests, the changing value of money must be taken into account. Nonetheless, census data can give a general picture of the relative importance of agriculture in the towns of the Lower Cape. In 1895 the values of vegetable crops on the Lower Cape were: Chatham—$5,969; Orleans—$3,181; Eastham—$21,950; Wellfleet—$7,405; Truro—$10,984; and Provincetown—$4,387 (**Commonwealth of Massachusetts 1899b**).

Specialty Crops. Extension agents and market opportunities convinced Cape farmers to switch to specialty crops, such as strawberries, asparagus, turnips, and cranberries. These fruits and vegetables became important commercial crops because they grew well on the Cape and required little space. Except for turnips, these products commanded high market values but spoiled easily, thus precluding competition from distant agricultural regions. Reliable and quick transportation by water or rail provided Cape Cod farmers with easy access to markets in New England.

Specialty crops had social consequences for Cape Cod farmers. Previously, upward social mobility in agriculture had been very difficult. Arable land had always been scarce, and it was almost impossible to acquire enough money to buy sufficient farm land. Unless one had agricultural kin-networks and could inherit farmland, a farmer could not hope to expand production. With the introduction of specialty crops, however, persons without large land holdings or great wealth could improve their economic and social standing. A case in point is the cultivation of strawberries and asparagus; profitable crops of strawberries and asparagus could be grown on only five to 15 acres of land. Another example is cranberries, that grow only on low, swampy land, which had been considered worthless; landless workers were sometimes able to buy this land, even though prices began to increase as demand rose.

Strawberries. Like cranberries, strawberries could be grown on small plots, using kin and local labor. Strawberries take one year to mature, and then bear fruit for about two years. In their fourth year, strawberries tend to get blighted and diseased, and farmers usually plow their beds under at the end of three years. Rotation of fields in four or five-year cycles ensured that crops could be harvested every year. They were shipped by rail to markets in Boston. Strawberries were grown on the Cape from about 1850. The Lower Cape did not, however, produce vast amounts during the 1870s or 1880s, as shown by production data (Table 14).

Asparagus. Asparagus is planted permanently, but takes three years before it can be harvested. Farmers plant roots in trenches 4 or 5 feet deep with compost or fertilizer added. Stalks jut above ground the first year. Fields require no maintenance after the initial planting. For easier access, some farmers burn off weeds just before the first asparagus spears appear. Harvesters cut stalks with a knife. The growing season is short but is not labor-intensive. A single worker can harvest several acres. Production costs are low, and profits can be generated in a few years.

Eastham was the center of asparagus growing on the Lower Cape. In 1875 it was the only town growing a commercial crop. It produced 2,100 bunches of asparagus worth $174; in 1885, the harvest had increased nearly six times over to 12,100 bunches worth $884. Orleans in 1885 grew 1,300 bunches worth $65; Wellfleet had a very small crop, and the other towns did not report any commercial harvest (**Commonwealth of Massachusetts 1876c, 1887b**). Asparagus growing, like turnip production, increased until the 1920s, when improved refrigeration techniques allowed growers in warmer parts of the country to gain access to urban markets of the Northeast.

Turnips. The turnip is a cool-season crop that farmers can plant in early spring or late summer in the space previously occupied by early peas, potatoes, carrots, lettuce, or spinach. Depending on the variety planted, turnips can take as little as 40 days to mature, which provides farmers with a quick cash crop. Moreover, turnips, like beets and potatoes, thrive in well-drained sandy soil like the Cape's. While production of beets and potatoes declined in the late nineteenth century, turnip yields increased (Tables 15 and 16). Later, transportation improvements increased the competition from southern farmers.

Asparagus growing, like turnip production, increased until the 1920s, when improved refrigeration techniques allowed growers in warmer parts of the country to gain access to urban markets of the Northeast.

Cranberries. Although cranberries grew wild on the Cape, cranberry bogs that had been modified produced better harvests. Drainage levees, pump houses, flood gates, and ditches were constructed. Small windmills were used to pump water into cranberry bogs (**Demanche 1990**:50). Extensive sand-mining by hand was required for construction of and improvements to bogs.

Because bogs could not support draft animals and wagons, early sand-mining was a labor-intensive practice. Only those farmers with access to large pools of labor could raise cranberries. Hence, early cranberry production tended to be a family enterprise, with all members helping with construction and harvesting. Most successful cranberry growers could rely on family members to work for little or no wages. As cranberry production intensified, growers recruited additional help from extended kin networks, then hired neighbors, community members, and finally migrant laborers (**Lowrance 1990**:61).

Others, such as sea captains, could also mobilize workers. With capital to invest and access to a labor force, they bought land for cranberry bogs. One such captain, George E. Thacher, combined maritime trade with cranberry production; in the fall, Thacher's crew stopped sailing and went to work in the bogs (**Lowrance 1990**:16).

Cranberry production was organized along gender lines. Men cleared land and sanded it. Women planted, weeded, and harvested the cranberries. Nordhoff illustrated a picture of cranberry harvests in 1875; it showed women picking cranberries by hand, placing them in pots, which in turn were emptied into gunny sacks. Full sacks of berries were emptied on a long trough-like board suspended on two barrels. The board was then tilted, and cranberries rolled along the board into another barrel under a woman's inspection. Full barrels were then loaded by men onto a horse-drawn cart driven by men. All of this activity took place in the field (**Nordhoff 1970**:59).

Wooden rakes to gather the berries were tried with mixed results and by the early 1880s wooden scoops were being introduced (**Hicks 1979**:27). In the twentieth century, machines resembling a cross between a vacuum cleaner and a power lawnmower were used to pick the berries. Large bogs can be harvested "wet" by flooding the bogs and then using machinery to loosen and collect the berries.

Family operations developed into commercial enterprises that employed seasonal, non-kin laborers. Native Americans provided some of the necessary labor, but shortages soon developed; laborers were imported from New England cities, and the population of the Cape became more ethnically diverse. From Boston, Worcester, and Brockton came Irish, Italian, Slavic, and Syrian workers. From New Bedford, Fall River, and Providence came Portuguese and French-Canadian workers, among others. Two other groups that became prominent in cranberry cultivation by the 1890s were Cape Verdeans and Finns.

The cranberry industry soon became dependent on immigrants, since they were a source of cheap and easily exploitable and expendable labor. Because of local hostility towards immigrants, many older inhabitants objected to the idea of local women and children working next to them, and most local family involvement in the harvest ended (**Thomas 1990**:85). Whole families of immigrants were employed in cranberry production. Massachusetts child labor laws were ignored, and children working as cranberry pickers remained important in harvests until the Great Depression, when huge numbers of adult workers became available.

Nordhoff mentioned that Provincetown had no poor people, "except for a few aged and helpless people who are boarded out by the town" (1970:58). References, however, to hermits and others living temporarily in town or on the margins of local society suggest that there was a segment of the population that was not integrated into the community but could be drawn on for seasonal agricultural employment. The state provided some workers in 1907, when it sent state wards, young boys and girls, to Provincetown and Truro as subsidized domestic and agricultural workers (**Marshall 1974**:71).

Structures called "bog houses" were located adjacent to cranberry bogs. These tended to be two-story structures, with processing and storage facilities on the first story and living quarters on the second story. In some cases, only the manager of the bog and his family lived in the house (**Yocum 1997**), with workers coming in daily from the surrounding area. In other cases, the workers and their families lived in the house (**Thomas 1990**:88). The size and number of bog houses depended on the size of the bog. A 10- to 12-acre bog required one two-story bog house of 18 by 30 feet. Some 32 people would live inside, which was enough to tend the bog during the harvest season. On the lower floor was a kitchen and room to dry berries, and the upper floor was used as a sleeping platform. By 1900 the berry-storage function of bog houses was taken over by central facilities. Bog houses became primarily workers' shelters and were called "shanties." In 1914 cranberry shanties held 10 to 40 persons, and were thought of as good accommodations for migrant workers—better than those for construction workers of the time. Reports, however, characterize shanty living conditions as poor (**Thomas 1990**:86-88).

Cranberry production for the Lower Cape as a whole rose, although the yield in some towns fell during this period (Table 17). The unit of measurement changed in census data from the bushel to the larger barrel, indicating an increase in the scale of the harvest.

Although these statistics suggest that cranberry cultivation was important for the Lower Cape, it should be kept in mind that other places, such as Plymouth County, were bigger producers. Even within Barnstable County,

the Lower Cape was not the principal cranberry-growing area. In 1905, for instance, when Massachusetts produced 60 percent of the nation's crop and Barnstable County's cranberry acreage reached its peak, the aggregate production of the Lower Cape towns was just 7,706 barrels; on the other hand, three other Cape towns (Barnstable, Brewster, and Harwich) each produced more cranberries than this (**Commonwealth of Massachusetts 1909b**; **Franklin 1948**:3; **Stott 1987**:236).

Agriculture at the End of the Period. The pattern of dairy, poultry, vegetable, and fruit production (including specialized crops) that characterized the Lower Cape in the twentieth century was established by the end of the nineteenth century. A quick sketch can be drawn from 1895 census data (**Commonwealth of Massachusetts 1899b**).

In Chatham, there were a variety of agricultural pursuits. Fruits and berries (including cranberries) were the most profitable crops ($13,504). This was closely followed by dairy products ($12,569); poultry products ($9,507); hay, straw, and fodder ($9,402); vegetables lagged far behind ($5,969).

Orleans had a major poultry industry, with a yield of $12,297. It also had dairy products ($9,960); hay, straw, and fodder ($6,012); and vegetables ($3,181).

Eastham's principal agricultural product was vegetables, worth $21,950. Poultry ($13,041) and dairy ($11,873) were important, while hay, straw, and fodder accounted for $6,890.

Wellfleet's main sources of agricultural income were dairy ($12,422) and poultry ($11,806) products. Others were vegetables ($7,405); fruits and berries ($6,041); and hay, straw, and fodder ($5,417).

Dairying was also important in Truro ($19,898). This was followed by poultry ($11,303); vegetables ($10,984); fruits and berries, including cranberries ($8,346); and hay, straw, and fodder ($6,013).

Finally, Provincetown differed from the other towns on the Lower Cape in that the main crop was hay, straw, and fodder ($12,435). Other agricultural products were poultry ($6,021), dairy goods ($4,824), vegetables ($4,387), and fruits and berries ($2,840).

Portuguese Immigrants and Agriculture. Although Portuguese immigrants tended to be employed in maritime enterprises or low-paying occupations in Provincetown, there were some who farmed. They grew specialty crops, particularly strawberries and cranberries. The close-knit agrarian communities began, however uneasily, to incorporate the Portuguese. Cape Verdeans made permanent residences in Provincetown, Truro, and Wellfleet, and they eventually owned some of the bogs there. Oftentimes Portuguese, Azorean, and Cape Verdean workers chose to send their savings across the Atlantic, preferring to buy land in the old country rather than on Cape Cod (**Halter 1984**:III:70-83).

A unique feature of Portuguese farming on the Cape is the use of terraces. Terracing was the dominant form of agriculture in the Azores at that time, and no doubt this community was replicating their traditional cultural patterns in their new environment (**Edwards 1918**:119-121, 140, 147).

Changes in Farming. Resort tourism first became a viable economic strategy on the Lower Cape in the latter part of the nineteenth century. In 1890, nearly 10 percent of the Cape's farmland was not in production. This led to the land being put to other uses. Persons from Boston and elsewhere off the Cape purchased land for recreation and development; for instance, by 1896, 15 to 20 percent of Eastham's land was owned by non-residents.

Summer visitors began to play an increasingly important part in Cape economy and society. They were in a position to demand entertainment and services. Seasonal visitors and non-native, year-round residents set up their own social groups (e.g., yacht clubs and social clubs) that excluded many people who had been born on the Cape (**T. Beyle 1963**:32-36; **Blake 1964**:51). These newcomers did, however, help to keep local agriculture going because they demanded fresh agricultural produce. This demand, plus the ability to ship specialty crops by rail to urban markets, allowed some farming to continue. In Eastham, for example, farmers grew $40,000 worth of asparagus on plots ranging from five to 15 acres; in Orleans, Walter Mayo started a large duck farm, which at one point had 5,444 fowl (**Barnard 1975**:149; **Edwards 1918**:105, 121). A dairy farm operated at Fort Hill into the mid-twentieth century.

Early Modern Period (1915-1940) and After

Cape Cod agriculture in the twentieth century has been characterized by dairy-vegetable-poultry-fruit production. It has diminished in importance as other economic activities compete with agriculture, although there have been periods, such as during World War II, when there was an increase in the number of farms and the production of vegetables, strawberries, and poultry (**Black 1950**:230-239).

Cranberry farming declined on the Lower Cape. Cranberry bogs continued to be owned by individual farmers, but the industry became increasingly centralized (**Franklin 1948**; **Peterson et al. 1968**). When cranberry prices fell at the start of World War I, growers decided not to sand their bogs, which resulted in their deterioration (**Black 1950**:506). The town that had the most land in cranberries on the Lower Cape was Chatham, followed by Orleans. Compared to these towns, or to more productive areas of cranberry cultivation (such as the Upper Cape or Plymouth County), very little land was devoted to cran-

berries in Eastham, Wellfleet, Truro, or Provincetown by the middle of the 1930s (**Black 1950**:508). Cranberry growing on the Lower Cape continued to dwindle after World War II (**Hicks 1979**:13).

The population of the Lower Cape that depended on farming as a way of life declined in this century. By 1940, the rural farm population of Barnstable County was 4,306 out of 37,295 residents (11.5 percent). For the Lower Cape towns, the percentage of the population on farms was lower, except for Eastham: Chatham—55 rural farm residents out of a population of 2,136 (2.5 percent); Orleans—108 out of 1,451 (7.4 percent); Eastham—181 out of 582 (31 percent); Wellfleet—36 out of 890 (4 percent); Truro—23 out of 585 (5.4 percent); and Provincetown—no rural farm population at all (**U.S. Census Office 1942-1943a**).

Changes in agriculture, however, involved more than just declining harvests or shifts in crop production. Rural communities and their unique and insular ways of life dissolved as the twentieth century proceeded.

Archeological Implications

Land Modification for Agriculture

The Lower Cape is a particularly fragile environment. Human actions in the past have had profound consequences, including denudation of the landscape, loss of vegetation, erosion of soils, and sedimentation of brooks, rivers, and harbors. Native American people reportedly used controlled burning of forests to provide greater browse for game animals (**Cronon 1983**). Europeans also used controlled burning to clear land for tilling or pasturage.

Archeological Record and Considerations. In the archeological record, macro-botanical evidence of burned materials should consist of charred remains of wood (pitch pine) or grass.

Areas found to have been burned should display characteristics that permit differentiation between Native American and European burning.

Native American burning (for increased browse) was probably done repetitively and in wooded areas; no plow zone would be evident. Supporting cultural material would be needed to distinguish between natural fires and deliberate burning by Native Americans.

Environmental degradation from farming practices may be evident archeologically as plow zones, plow scars, or settlement complexes buried beneath drifting sand dunes.

European burning (for land clearing) was probably done infrequently on a given parcel, and in areas favorable for agriculture; a plow zone would be evident.

Environmental degradation from farming practices may be evident archeologically as plow zones, plow scars, or settlement complexes buried beneath drifting sand dunes. Other potential features associated with environmental degradation are silt-filled cisterns, herring ditches, and ponds used for watering livestock.

Evidence of abandoned agricultural land includes "ha-has" (trench-and-mound fences), fence post molds, and traces of structures related to sheltering or feeding livestock.

The decline in the availability of locally grown timber as a source of lumber for structures may have resulted in intensive reuse of architectural fragments or the substitution of other architectural forms (e.g., increased use of bank barns).

Research Questions. Is there evidence in the archeological record of environmental degradation during the historic period (i.e. after Contact)?

Does architecture change in size, form, or style in response to environmental degradation? Do architectural materials change when local timber is no longer available as a construction material?

Is there evidence of increased use of areas sheltered from the wind (such as the hollows) after deforestation in the early nineteenth century?

Is there evidence that English settlers in the seventeenth century continued the practice of burning for cultivation? Was this practice continued later in the historic period?

Was there a difference in the types of areas selected by Native Americans and Europeans for burning?

Subsistence Change

The Lower Cape experienced considerable economic change over the last 350 years. In the eighteenth century, agriculture was no longer viable as a sole source of subsistence for small farmers because of environmental degradation and changing market conditions. Many farmers supplemented their livelihood by becoming part-time fishermen. Throughout the historic period, markets became increasingly important to agriculture on the Cape. This trend was intensified with the development of crop specialization.

The size of farms (as revealed by architectural remains, archeological evidence of land improvements, and historical records) also changed through time, and may be related to class differences. If significant differences between farmers can be detected archeologically, then discussion of "farmers" and agricultural life may be more complex than is presently believed.

Archeological Record and Considerations. Evidence of abandonment of farmland or the improvement of land will reflect national trends in economics as well as local trends.

With a shift to farmers also engaging in maritime pursuits, it is expected that artifacts related to maritime activities will appear increasingly in assemblages at farm sites.

A greater focus on market also should be reflected in an increase in the amount of manufactured goods present in an agricultural site; this also should appear as an increase in the ratio of imported ceramics to locally produced redwares.

We may hypothesize that smaller, poorer domestic units would be more apt to use locally produced ceramics (e.g., redwares) in combination with older and reused imported wares. Wealthier families should have more imported ceramics, matching sets, and specialized ceramics (e.g., tea wares).

Deed research in concert with archeological data may shed light on changes in the sizes of farms. Historical information would be of critical importance to this issue.

Research Questions. Is there evidence of wider economic trends in archeological sites on the Lower Cape?

Is there evidence in the archeological record of a shift by farmers to include maritime pursuits in their subsistence strategy? Is there evidence of a greater market focus in rural sites on the Cape?

Can class differentiation be discerned by the size of a farm on the Cape?

Specific Research Requirements. Research of historic records, particularly deeds, will be important in determining the size of farms and the manner in which they are parceled for sale or transfer.

Population and Settlement

Since the seventeenth century, the Lower Cape has seen periods of population growth and decline. Specifically, some areas may have become more favored than others as places of residence during different periods. The hollows, areas near roads and the railroad, and areas with unfavorable soil conditions have been occupied and abandoned periodically for different reasons.

Households also have changed through time. Archeologists often assume that a single farm represents a single family or household. Duplex residences, however, were evident in the eighteenth century on the Cape. This challenges common assumptions concerning typical Cape architecture.

There were several transient populations that were not under landowner control. They included squatters and indigent itinerants. In the case of transient people under the control of farmers (i.e., hired help), these people lived under very different circumstances than did the indigent itinerant farmers.

Outbuildings may contain residential information. Historical records indicate that cranberry growers housed workers in "bog houses," and in other parts of New England farm workers were housed in barns and other outbuildings.

Archeological Record and Considerations. Although estimation of population size at a site cannot be accomplished precisely, the presence and size of the remains of structures identified as residences is one population indicator. Another type of data positively correlated to population size is the amount of tableware and refuse evident in a residential site.

Diverse artifact assemblages at house sites usually have been interpreted as having been produced by a single family over its life cycle; it is just as likely that such diversity was the result of multiple-family occupancy, and careful analysis of the material culture associated with a house foundation or cellar hole may reflect a duplex with multiple-family occupancy.

Separate paths, doorsteps, and privies may be evidence of multiple family occupancy.

We can hypothesize that itinerant people left ephemeral, low-visibility remains that may be located at the edges of settled areas or fields that were tilled and were separated from dwellings or populated areas.

Activity-related structures such as sheds, barns, and "bog-houses" may have been used to house itinerant workers, and should have associated domestic refuse.

Because of their ephemeral nature, the archeological record of occupations by transient people might easily be misinterpreted as field scatters of artifacts deposited with "muck" (manure and food wastes—a common agricultural practice in the historic period). Such deposits may be distinguished from field scatters by being in areas not normally used for agricultural purposes (e.g., no plow zone, in physically isolated areas).

Artifact assemblages of occupation by transients may differ from field scatters in the diversity of artifacts found. Trash from transient camps and shacks should contain less architectural debris (such as nails, hardware scraps) and more limited domestic refuse than would more sedentary farming households.

Transient camps may contain more of a diversity of faunal remains including infrequently used species (e.g., certain types of shellfish) than sedentary households.

If farm workers and their families were housed in non-residential structures, it is expected that remains of barns and other outbuildings would contain artifacts typical of domestic assemblages (e.g., tableware, food remains).

Research Questions. How are population shifts revealed in the archeological record?

It is hypothesized that multiple-family dwellings were more likely among people with limited income than those who had larger farms and properties. Is it possible to distinguish multiple family dwellings on the basis of landscape features and artifacts?

Is there evidence of habitation by itinerant people?

Is there evidence of occupation of non-residential structures on farm sites by farm laborers and their families?

Farming Practices

Fencing and enclosures are important in animal husbandry. Unlike other parts of New England, timber for fence posts was limited on the Cape, as was stone for fencing in many

areas. Trench-and-mound fences, or "ha-has," were common in agricultural complexes on the Cape, and in many areas are still visible today.

Root crops such as turnips and potatoes are important in the seventeenth century in England as a source of fodder. By providing livestock with a source of food for the winter, fresh meat was available for a much longer period than had been possible previously. Given the limited supply of other forms of fodder, root crops would be a practical alternative on the Cape. Different types of crops should leave different imprints archeologically. For example, asparagus production requires deep planting. An emphasis on asparagus production, particularly in Wellfleet and Truro, should be discernable in the archeological record by deeper plow zones.

Archeological Record and Considerations. The practice of growing root crops not related to household use may be reflected in root cellars separate from the house, especially near barns and outbuildings, and may reflect greater reliance on livestock.

Bank barns also may have been used for root storage.

Asparagus production requires dramatic turning-over of crops resulting in very deep plow zones. Such plow zones should be detectable archeologically. Trench-and-mound fences should be detectable either visually or archeologically in agricultural complexes. Their locations will contribute to an understanding of the layout of farms, especially related to field size.

Post molds related to livestock fencing are evident in the archeological record.

In some areas stone fences may exist, and in soils containing few large stones may be associated with limited post fencing.

Research Questions. Is there evidence that Europeans practiced the growing of root crops for fodder in the seventeenth century on the Lower Cape?

Is asparagus farming still evident in areas such as Wellfleet and Truro after many years of erosion?

What were the methods of fencing in different areas of the Cape?

Do bank barns exist in agricultural complexes containing standing outbuildings?

Can historical records be used to contribute information concerning the types of vegetables and livestock grown in farm complexes?

Regional Affiliation

Among the English settlers in the seventeenth century, there was a strong relationship between Plymouth, Massachusetts, and the Cape, especially architecturally. Non-European farmers may have had patterns in their farm landscape distinct from those of English farmers (e.g., Cape Verdeans are known to have practiced terrace farming). Economically marginal farmers also tended not to fence their fields, but rather tethered grazing animals in fields.

Archeological Record and Considerations. Deetz and Ekholm have shown at the Wellfleet Tavern site that it is possible to determine information about architectural styles from archeological data. Small fragments of architectural debris may provide significant information about continuity of style.

Farming practices such as terrace horticulture in marginal areas can easily be misinterpreted as natural topography rather than cultural features. Close attention to the surface, as well as subsurface testing, is required to accurately identify features related to these activities.

Similarities to Plymouth house styles and footprints should exist over much of the Cape.

Research Questions. How similar was architecture of the seventeenth century on the Cape to that in Plymouth?

Did people on the Cape maintain material culture similar in style to that of Plymouth?

Was there greater diversity in eighteenth-century styles of architecture on the Cape?

Does this diversity indicate growing uniformity of community style and planning?

Is there a distinctive pattern associated with ethnicity or economic marginality evidenced in farm fields?

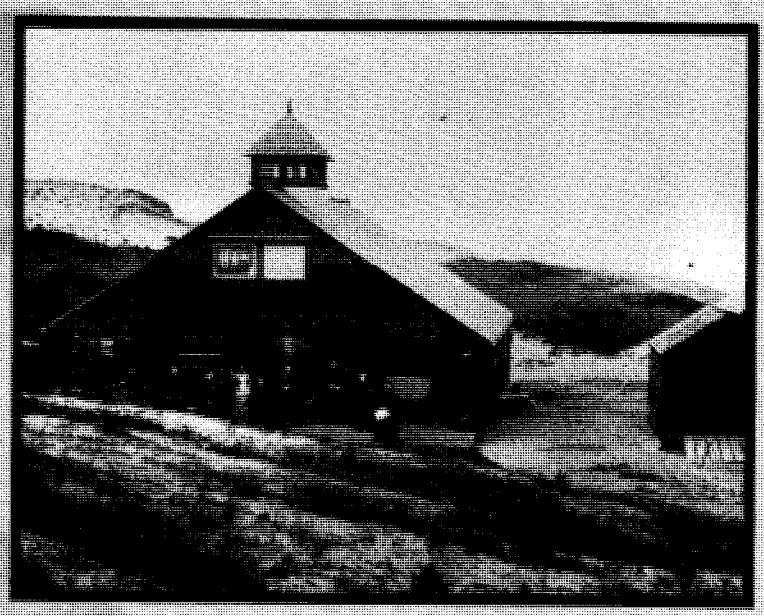
Chapter IV

MARITIME LIFE

A Note on Sources

Chronology

Archaeological Implications



Popular images of Cape Cod focus on maritime life. Several points should be kept in mind when considering this important aspect of the Lower Cape. First, not all settlements in the region were oriented towards the sea (Figure 55). Nauset Grant was colonized by people from Plymouth who were principally farmers. Second, as people turned more to the sea, they used different environments on the Cape. Ponds connected to the ocean were spawning grounds for anadromous fish and homes for catadromous eels. Mud flats yielded clams, and salt marshes were a source of salt hay. In shallow water there were fish that could be caught with hand-lines or in fish weirs, oyster beds that could be dredged, and blackfish (whales) that could be driven ashore. Farther out at sea, on the Georges Banks and Grand Banks, were places where fish were abundant. The land, too, was a maritime resource: it was on shore that salt was made, fish preserved, and ships built.

Finally, although these environments provided an abundance of resources, many factors beyond the control of Cape residents affected their success. Ecological changes (the disappearance of species, disastrous storms and the silting of harbors), political events (wars, embargoes, and blockades), economic conditions (depressions and drops in prices), and technological innovations (fish freezing, railroads, and expensive navigation equipment) have all influenced maritime pursuits on the Lower Cape.

A Note on Sources

There is a vast literature on the many aspects of maritime life. In addition to scholarly studies, there is an abundance of technical material. Popular works have been published on almost every subject, but the quality of these for research purposes cannot be taken for granted.

The study of Native American use of maritime resources has centered on archeological sites that contain shellheaps or other remains of shellfish and fish. A starting place for this topic on the Cape is **Moffett** (1957) and **Salwen** (1978).

For the exploration of the coast of North America by European sailors, one can turn to original accounts such as the narratives collected by **Levermore** (1912) and **Winship** (1905). However, most readers would do well to begin with secondary sources that describe the historical setting and raise some pertinent issues. Among works to consider are **Beazley** (1964) on the Cabots, **Murphy** (1970) on Verrazano, and **W. Gookin and Barbour** (1963) on Gosnold. **Morison** (1971) is a source on the northern voyages of discovery in general.

For an overview of maritime history of the United States, one can look at **Bauer** (1988); the bibliographic essay gives leads for the merchant marine, shipbuilding, fishing, and whaling industries. Hutchins (**Hutchins 1941**) is a study on public policy and the maritime industries.

New England maritime history has been addressed by **Morison** (1921) and **Albion et al.** (1972); there is no bibliography in **Albion et al.** (1972). In the MHC regional survey volume (**Bradley 1987**) is a summary of maritime commerce, the whale fishery, and the fin fishery, as well as maritime industries (**Stott 1987**:239-286).

The New England fisheries have been surveyed by **Goode** (1887), **Innis** (1940), and **Ackerman** (1941). National and international events and the fisheries is the subject of **McFarland** (1911). Specific topics have been addressed by, among others, **Goode** (1880) on menhaden, **Morandiere** (1962) on cod (in French), and **Kochiss** (1974) on oysters; these works can provide information on the history of fisheries, techniques employed, and production. For the natural history of marine animals, there are field guides and government pamphlets (e.g., **Belding's** works on shellfish [n.d.a, n.d.b, n.d.c]). **Blair and Ansel** (1968) is a small book that is helpful concerning fishing boats and gear, although it focuses on modern equipment. **Bourne** (1989) and **Ruckstuhl** (1987) contain pictures of Provincetown that are valuable sources of information on structures and tools.

Whaling is discussed in **A. Starbuck** (1964); this is a convenient source of information on particular vessels that sailed from American ports. **Hegerty** (1959) is a continuation of Starbuck. One ship, *The Charles W. Morgan*, is the subject of **Leavitt** (1973); this book for the general reader covers shipboard life, tools, and techniques used on a whaler in the nineteenth century. Another book by **Leavitt** (1970) provides similar material for coasting vessels.

Trade from the Lower Cape with foreign ports was relatively insignificant, particularly when compared with Salem or Boston. If one wants a larger picture of Massachusetts maritime commerce, the important works include **Bailyn** (1964) on seventeenth-century merchants, **P. Smith** (1980) on colonial Massachusetts, **Homans** (1970 [1857]) for early nineteenth-century statistics, and **Kilmarx** (1979) for a general history of the merchant marine and shipbuilding.

Cape histories (**Deyo 1890**; **Freeman 1965** [1858, 1862]; and **Kittredge 1987**) are filled with discussions of maritime topics. Town histories often give locations of fishing settlements and wharves; historic maps are another good source for this information. Biographical and genealogical material also abounds in the town histories.

For quantitative data, however, it is necessary to turn to census reports. Unfortunately, census takers changed the units of measurement, particularly for fish, from one census to another. Researchers who need to know the "burthen" of ships should be aware that different formulas have been used at different times to determine this.

Aids to navigation, particularly lighthouses, have attracted much attention from authors of popular books.

vessels. English nationality was determined by birth, not by place of residence; hence, New Englanders were as "English" as the inhabitants of England. This law boosted New England's shipping by giving it a virtual monopoly on trade between the British colonies of mainland North America and those in the Caribbean (**Andrews 1962**:645-646).

Trade between New England and the other English continental colonies, as well as the West Indies, grew during the English Civil War era (1640-1660) (**Albion et al. 1972**:22-23). Fishing was encouraged by the opening of West Indian markets to New England merchants. Sugar production in the British colonies of the Caribbean after 1660 led to a demand for food and supplies for sugar plantations. New England's fish were needed to supplement the diet of slaves on the plantations of the island colonies, which were not self-sufficient in the production of protein-rich foods (**Innis 1940**:114-115).

Competition in coastal trade was eased when the Dutch were eliminated from New York in 1664. By the conclusion of the Anglo-Dutch Wars in 1678, the Netherlands no longer posed a serious threat to New England or its shipping interests.

Fishing. Although the Georges Banks were only 100 miles away, early fishermen usually avoided the area. Those who went there did not anchor their boats because of the dangerous currents. Colonists concentrated on waters close to shore, or within a few miles of the coast (**Albion et al. 1972**:26-27).

English settlers of the Lower Cape employed a simple maritime technology that did not change much in the seventeenth century. Hand-lines, weirs near the shore, and four-man shallops were used. When fishing further out to sea, the fishing boats stationed a man on a nearby shore to salt and dry the catch (**Albion et al. 1972**:27). Fish were dried on "flakes," made of brush, which were similar to those used for centuries in Europe.

Cod, Mackerel, and Striped Bass. The species most sought by fishermen from the Lower Cape were cod and mackerel. Codfish (*Gadus morhua*) populate sand and rock bottoms at depths of 30.5 to 457 m (100 to 1,500 feet). They have an average weight of 10 to 35 pounds, with an average length of under a meter (appx. 3 feet) (**Bigelow and Schroeder 1953**:173; **Ross 1991**:145-149). Prolific breeders, cod became the mainstay of the New England fishery. Atlantic mackerel (*Scomber scombrus*) travel in compact schools that can reach a large size. With weights of about seven pounds, they have lengths up to 0.6 m (2 feet) (**Ross 1991**:208-212). Both cod and mackerel were valued because they are easily preserved; cod is salted and mackerel is put in brine. Cod has in its favor the fact that mackerel requires barrels for storage, whereas, when dried, salted cod can be stacked like cordwood. Species that did not keep well—such as flounder (*Pseudopleuronectes americanus*) or fluke (*Paralichtys dentatus*)—were not highly valued at this time (**Stott 1987**:266-267).

Another fish that was important throughout New England for almost 200 years was the striped bass (*Morone saxatilis*, formerly *Roccus lineatus*) (**Ackerman 1941**:30-31; **Ross 1991**:171-176). Bass can be caught from shore with a hand-held line. Before 1650, Plymouth Colony allowed John Stone of Hull to do "basfishing" on Cape Cod, but local residents became interested in this resource by that year: "[the Cape] haveing now sundry of our owne that purpose to sett upon the said basfishing." Stone was ordered to desist, and the privilege fell to Miles Standish, Thomas Prence, and William Paddy (**Shurtleff 1855**:II:161 [1650]).

Alewives, Herring, and Menhaden. Among the anadromous fish on the coast of New England are alewives, herring, and menhaden. Confusion over these species in the historical literature and everyday speech have been caused by the variety of local names applied in different areas.

Alewives (*Alosa pseudoharengus*) have gray-green backs, silvery sides, and a dark spot behind the gills. They reach an average weight of 0.5 pounds and an average length of 27.9 cm (11 in) (**Ross 1991**:120-124). These fish "move all the way up to the fresh water ponds at the beginnings of the streams" (**Godfrey et al. 1978**:14).

Atlantic herring (*Clupea harengus harengus*) have steel-blue backs and silvery sides. They have an average weight of 1.5 pounds and an average length of 45.7 cm (18 in) (**Ross 1991**:35). These fish spawn in small streams (**Godfrey et al. 1978**:14).

Menhaden (*Brevoortia* spp.) are related to herring. One species, *Brevoortia tyranus*, has at least 30 popular names. "The name menhaden' is exclusively applied in southern Massachusetts, the Vineyard Sound, Buzzards Bay, and Narragansett Bay, where it appears to have originated" (**Goode 1880**:6-7). In other parts of Massachusetts and Maine, the name "pogy" is used, although at Cape Ann it is called "hard-head" and "hard-head shad." Other names are "bony-fish," "mossbunker," "greentail," as well as "white fish"; to complicate matters further, it is sometimes called an "alewife" or a "herring."

All three of these types of fish were caught by Native Americans and later by English settlers. Weirs were constructed to seal off coves, and fishing stations were established on streams used by migrating fish (**Albion et al. 1972**:26). "The interior and higher portions of Cape Cod...[are] dotted with numerous freshwater ponds, from which small streams run down to the sea. In the spring large schools of alewives run up these streams and pass into the ponds above to spawn" (**Goode 1887**:I:670-672). These streams were an important resource for fishing. The names "Herring River,"

Many have been published, including some with excellent photographs. Unfortunately, there are frequent errors (e.g., the date a lighthouse was first built, lit, or reconstructed). **A.G. Clark** (1992) includes interesting extracts from government documents of 1852 and 1854. Material can also be found in the county histories (**Deyo 1890**; **Freeman 1965** [1858, 1862]; **Kittredge 1987**). Annual reports of the U.S. Lighthouse Board are valuable primary documents. Files of the Massachusetts Historical Commission are also useful. The historic structure report on the Three Sisters lighthouses by **Clemensen et al.** (1986) should be consulted for these structures. As for the U.S. Life Saving Service (USLSS), town histories make frequent mention of lifesaving stations. **Dalton** (1991), with an introduction by G.F. Ackerman, is a good and entertaining source for information on lifesaving; **Merryman** (1989 [1882]) is an article, originally published in *Scribner's Monthly*, that discusses the USLSS with emphasis on the drama of lifesaving operations.

A significant bibliography on maritime history is **Albion** (1972).

Chronology

Contact Period (1500-1620)

Remains recovered from prehistoric archeological sites indicate that Native Americans living on the Lower Cape had long used marine resources (**Mahlstedt 1987**; **Moffett 1957**; **Salwen 1978**). The technology used in the Contact Period was depicted by Champlain in his 1609 map (Figure 14); this illustration shows a fish trap and an eel trap in Nauset Harbor.

Native American patterns of resource use may have been altered by contact with Europeans as early as the sixteenth century. The extent to which contact changed resource use in late prehistory is a still-unresolved question in the archeology of the Lower Cape (**Snow 1980**:45). When contact between Europeans and Native Americans first occurred has also been the subject of debate. Europeans may have visited North America prior to the first recorded exploration of Newfoundland and Nova Scotia by John Cabot in 1497. The earliest known European explorers reported vast supplies of wood on the coasts they visited, as well as great schools of fish in adjacent waters. Their accounts spurred European fishing of North American waters.

In the early sixteenth century, France, Portugal, and Spain were the major nations with fishing fleets in the northwestern Atlantic. French vessels fished in the Grand Banks after 1504 (**Morison 1971**:270). English ships were not commonly found in the northwest Atlantic during the first half of the 1500s, but they dominated the harbors of Newfoundland by the last quarter of that century (**Snow 1980**:44).

In the sixteenth century, the first Europeans to land on Cape Cod probably were Basque and Portuguese fishermen, who stayed only to get supplies and process their catch. Occasional fishermen became a regular feature of the Lower Cape until after the Pilgrim settlement (**Barnard 1975**:1; **Kittredge 1987**:182).

Cape Cod acquired a reputation among Europeans as an excellent place for fishing. William Wood, in *New England's Prospect*, wrote, "The sturgeons be all over the country, but the best catching of them is upon the shoals of Cape Cod and in the river of Merrimac" (**W. Wood 1981**:55 [1634]).

Despite the abundance of fish, at the end of the sixteenth century and during the first years of the seventeenth, no permanent European settlements had been successfully planted in New England. It was possible that not only the Cape but all of New England would become "another Newfoundland, frequented by the crews of fishing vessels but unsettled and undeveloped" (**Bailyn 1982**:5).

Settlement Period (1620-1675)

When settlers from Plymouth arrived at Nauset in 1640, they turned to farming as their chief economic activity. Cape Cod residents intensified fishing efforts as time passed. It is important to keep in mind that the seventeenth-century English residents of the Lower Cape practiced both farming and fishing for commercial and subsistence production (**Kittredge 1987**:185; **N. Smith 1922**:32). They based the timing and intensity of any activity on seasonal changes and the availability of resources. Farming allowed some freedom of scheduling, making it possible, for example, for farmers to take advantage of a pod of whales (**Yentsch 1988**:150).

Although fishing was not a major commercial activity of residents on the Lower Cape in the seventeenth century, the Plymouth Colony established restrictions on who could fish the waters around the Cape (**Shurtleff 1855**:II:244-245). The English settlers of this period considered maritime resources valuable and protected them from exploitation by others.

Politics and Economics. During the seventeenth century, political events affected the maritime activities of New England. The specific influences on the Lower Cape, however, cannot be determined without further examination of primary sources.

The earliest known European explorers reported vast supplies of wood on the coasts they visited, as well as great schools of fish in adjacent waters.

British law was an important factor in the maritime life of the American colonies. In 1649 and 1651, Parliament passed laws regulating trade. Modified in 1660 and revised in 1696, these laws were collectively known as the Navigation Acts. Sometimes confused with the post-1700 Trade Acts that encouraged and controlled trade, the Navigation Acts protected English and colonial shipping from foreign competition. No goods could be transported into or out of Britain or any of its colonies except in English-owned

"Herring Brook," and "Herring Pond" in Wellfleet suggest that this was a place where the fish could be harvested.

Seventeenth- and early eighteenth-century English settlers modified streams to connect inland ponds with the ocean in order to provide habitat for anadromous fish. In Plymouth, barrels of herrings were introduced into ponds that were given outlets to saltwater, with the hope that the young that were spawned would themselves eventually return to spawn (**Holmes et al. 1992**). Similar "herring ditches" were probably dug on the Cape.

Shellfish. Native Americans used a variety of mollusks for food before European contact. The English settlers of the Lower Cape extensively used soft-shelled clams (*Mya arenaria*) and quahogs (*Mercenaria mercenaria*) (**Belding n.d.a**:42). Oysters (*Crassostrea virginica*) were another early shellfish of importance to the Cape. There is no evidence, however, that the English were familiar with scallops (*Aequipeoten irradians*, or bay scallop, and *Placopecten magellanicus*, or deep-sea scallop) as a food in England, or that they learned about it from the Native Americans. Its principal use in the seventeenth century and long after was as a fertilizer (**Belding n.d.b**:44). Shellfish were locally consumed and had no commercial value at this time.

Whaling. Before contact, Native Americans did not systematically hunt whales, but they did use those that washed ashore (**Salwen 1978**:162). Whales that were important on the Lower Cape are called "blackfish" but really are pilot whales (*Globicephala melaena*, formerly classified as *Globicephala ventricosa*). These whales reach lengths of 8.5 m (28 feet) and travel in schools (**Burt and Grossenheider 1980**:241). For unknown reasons, they sometimes beach themselves. Other whales that died at sea occasionally drifted ashore. One species common around the Cape is the Northern right whale (*Eubalaena glacialis*, formerly known as *Eubalaena sieboldi*) (**Burt and Grossenheider 1980**:244-246).

English settlers also used these whales. Lower Cape towns, however, did not support deep-sea whaling in the seventeenth century, even though Basque and Dutch whalers killed whales off Greenland and Nova Scotia at this time (**A.H. Clark 1887**:27).

As beached whales were valuable sources of blubber, bone, teeth, and oil, there were disputes over ownership (**Stott 1987**:254-255). Towns reached different solutions. Eastham and Truro dedicated whale carcasses to paying for part of their minister's salary. Other towns negotiated treaties with Native Americans, who retained claims to drift whales. Leaving a mark of ownership on the whale secured some rights to it; this practice was followed into the nineteenth century (**Kittredge 1987**:165-167; **S. Rich 1988**:109-110 [1883]).

To increase the take of beached whales, Cape residents pursued pilot whales in Cape Cod Bay with small craft. Their tactic was to spread a line of boats in front of the pod. By beating the water with oars, whalers tried to panic the whales into shore (**Kittredge 1987**:167). They were "as easily driven to the shore as cattle or sheep are driven on land" (Levi Whitman, quoted by **Ekholm and Deetz 1971**). When people from the Cape began to kill whales from boats is a matter of dispute; it may have been around 1650, or not until the eighteenth century (**Hatch 1951**:68-69; **Kittredge 1987**:168-169).

Colonial Period (1675-1775)

Marine resources became more important to the people of the Lower Cape during this time. Unrestricted fishing and whaling resulted in a decrease in fish and whale populations after 1715 (**Clemensen 1979**:21; **Rubertone 1985**:88). This period also saw important political changes that affected the fisheries.

Politics and Economics. After King William's War (1689-1697) between England and France, the New England fisheries suffered through a depression that lasted from 1698 to 1713 (**McFarland 1911**:81).

At the beginning of the eighteenth century, France was a powerful force in North America, and its fishing fleet of approximately 500 vessels offered substantial competition to that of New England. The claim by Louis XIV to a section of Maine, and to all of the fishing grounds from the Kennebec River to Labrador, was an issue in Queen Anne's War, the North American phase of the War of the Spanish Succession (1702-1712) (**McFarland 1911**:78-79; **Peckham 1964**:57-76).

The French were expelled from Nova Scotia and Newfoundland under the Treaty of Utrecht in 1713 (**Innis 1940**:135; **Morison 1921**:15). France did keep Cape Breton Island (Ile Royale), Prince Edward Island (Ile Saint Jean), and New France (Quebec).

New England expanded its fishery after 1713. New settlements were built in Maine. Marblehead developed into a major fishing port. The schooner, invented in Gloucester in 1713, replaced the shallop as the principal fishing vessel, and ships from New England fished the waters off Nova Scotia, Cape Breton, and Newfoundland. The New Englanders, however, did not like the French fishing fleet off Newfoundland and were uneasy about France's intentions. In 1719 the French began constructing the Fortress of Louisbourg, not far from fishing grounds such as the Sable Island Bank, the Western Bank, the Baquereau Bank, St. Pierre's Bank, and the Grand Banks off Newfoundland (**Kittredge 1987**:104; **McFarland 1911**:86-88).

This uneasy "long peace" was broken by King George's War (1744-1748), part of the War of the Austrian Succession

in Europe. Foremost of the military achievements of the war was the capture of Louisbourg by New Englanders, a conquest that was returned to France at the end of the war. Despite years of peace that followed, the restoration of Louisbourg was resented.

In the years between King George's War and the French and Indian War, New England cod were considered to be of prime quality in European markets. Fishermen dried their catch on flakes, using salt from the Cape Verde Islands, Lisbon, the Bay of Biscay, or from the Turks Islands near the Bahamas. Fish caught from early June to the beginning of October were called summer fish; the rest, spring or fall fish (**McFarland 1911**:95-98). Mackerel and herring, which had previously been used mostly for bait, were now being shipped to the West Indies. In May of each year, mackerel appeared in New England's waters, but they disappeared within two or three weeks; in the summer and fall, larger schools of mackerel returned (**McFarland 1911**:97-98). In 1750, New England had approximately 400 vessels in the cod fishery, 200 in the mackerel fishery, and 100 in the whaling fleet that went to the Gulf of St. Lawrence (**McFarland 1911**:98).

Smaller vessels that could not weather ocean voyages fished closer to Newfoundland. Their crews took their catch home to salt and dry on Cape Cod beaches; the catch was then sold in Boston.

The final conflict between empires in North America was the French and Indian War (1754-1763), part of the Seven Years' War. At its conclusion, competition from French maritime industries diminished with France's removal as a major power on the western side of the Atlantic. France kept only the small islands of St. Pierre and Miquelon in the Gulf of St. Lawrence, and they had the privilege of drying fish on the northern and western coasts of Newfoundland (the "French Shore") (**Andrews 1962**:712; **Meinig 1986**:268).

McFarland summarized the situation in the following passage:

> At the close of the Seven Years' War the colonists of New England found themselves in a position to pursue their great industry unmolested by the attacks of the French and undisturbed with thoughts of another war. With renewed energy and vigor they resumed their fisheries...Apparently there was nothing to hinder the people of New England from becoming in a very short period of time the greatest fishermen in the world (**McFarland 1911**:102).

Tensions, however, soon arose between Britain and the American colonies. Under the Acts of Trade and Navigation, American shipping was protected. As long as the laws were limited to the regulation of trade and the promotion of commerce, they were favorably regarded in America. Attempts to use the laws for tax purposes, however, created resentment in the colonies (**Andrews 1962**:646).

Fishing. Ships from the Cape frequently sailed to the Grand Banks to catch cod after 1730. There was no standardization of vessels engaged in Grand Banks fishing in the eighteenth century. Among the ships that went to the Banks were round-bottomed, two-masted, 40- to 70-ton schooners (**Goode 1887**:I:124; **Kittredge 1987**:184-185). From the seventeenth century through the first half of the nineteenth century, hand-lines were used from the decks of ships. Fishermen did not use hand-lines from dories until the mid-nineteenth century (**Goode 1887**:I:123).

Crews from large ships salted and dried their catch on the nearest beach. Laden with fish, the ships sailed directly to the West Indies, where they exchanged their cargo for rum and molasses. Smaller vessels that could not weather ocean voyages fished closer to Newfoundland. Their crews took their catch home to salt and dry on Cape Cod beaches; the catch was then sold in Boston (**Kittredge 1987**:184).

During the period, Chatham was the main fishing port of the Lower Cape, but fishing was important to all the towns of the Lower Cape. In Orleans, at Rock Harbor on the bay and Nauset Harbor on the ocean, fishermen went to sea for cod and herring; many Orleans men, however, sailed on fishing vessels from other ports. Even in Eastham, the people so valued cod and mackerel that they tried to eliminate their natural predators, especially porpoises; a bounty was paid for every porpoise tail brought to the town clerk, and one Elisha Young of Eastham brought 500 tails between 1740 and 1742. Towns at the lower end of the Cape became very involved with the sea. The first wharves of the Lower Cape were constructed in Wellfleet. By 1762, about 100 Truro men were engaged in fishing from Pamet Harbor and East Harbor. Also at this time, Provincetown grew in importance as a fishing center (**Kittredge 1987**:184).

Whaling. Whaling in this period is associated with an archeological site—the Wellfleet Tavern site on Great Island. Men waiting for sightings of whales probably spent time here. Archeological research suggests that the site was abandoned around 1740, about 10 years after the disappearance of whales in the Wellfleet Harbor area. A discussion of it is found in **Ekholm and Deetz** (1971).

Whaling in pre-Revolutionary times was practiced as a community enterprise. Townspeople collectively owned the tools to exploit pods of blackfish (**Kittredge 1987**:168; **Yentsch 1988**:154-155).

In addition to processing beached whales, Cape farmers in the eighteenth century practiced shore-whaling. During the late summer, squid and mackerel, followed by whales, moved into Cape Cod Bay. Men stationed on shore watched the bay for pods of whales. Sometimes whale houses were constructed to shelter these whale spotters. When a whale was spotted, a five- to seven-man crew pursued it in a cedar

New England's fishing fleet, barely recovering from the effects of the Revolution, suffered another setback in 1783, when the British prohibited American vessels from trading fish to the British West Indies. Some help was necessary for fishermen to survive.

In 1789, the second law ever passed by the United States Congress was a measure to relieve the condition of the fishing industry; in support of this measure, Massachusetts Congressman Fisher Ames said:

> We exchange for molasses those fish that it is impossible to dispose of anywhere else; we have no market within our reach but the islands from whence we get molasses in return, which again we manufacture into rum. It is scarcely possible to maintain our fisheries with advantage, if the commerce for summer fish is injured, which I conceive it would be very materially, if a high duty is imposed upon this article; nay, would carry devastation throughout the New England states...I contend they [New England fishermen] are poor; they are in a sinking state...But gentlemen will ask us, "Why, then, do not they quit the profession?" I answer, in the words that are often used in the eastern country respecting the inhabitants of Cape Cod—they are too poor to live there, and are too poor to remove (quoted by **McFarland 1911**:133-134).

The federal government granted bounties in 1789 and 1792, which stimulated fishing as a commercial enterprise (**Handlin and Handlin 1969**:60; **Morison 1921**:134-135). Between 1786 and 1790, Chatham had 30 vessels, with a tonnage of 900, employing 240 men in the cod fishery; it was the only Lower Cape town with such a large cod fishing industry. Other Massachusetts towns had larger cod-fishing fleets; Chatham was exceeded by Gloucester (with 160 vessels), Marblehead (90), Ipswich (56), and Plymouth (36), and was equaled by Yarmouth. All the other towns of Massachusetts combined had only 53 ships in cod fishing (**McFarland 1911**:131).

Government measures evidently succeeded. For example, by 1790 Provincetown employed about 20 vessels in fishing for cod, haddock, pollock, and halibut (**MHC 1984d**). Catches were sold to Spain, Portugal, and islands under their control (**Kittredge 1987**:187). Associated with the increase in fishing activities, on-shore support industries arose in Provincetown.

Events in the 1790s shifted American commerce, including the sale of fish, away from Europe. At this time, Britain's West Indian colonies were partially reopened to American trade, and they consumed a large share of the fish caught by New Englanders (**Meinig 1986**:I:366). Although interrupted by the Embargo of 1807-1809 and the War of 1812, this trend continued, and by 1821 more than 80 percent of the Cape's fish was sent to the West Indies. Domestic demand for fish also replaced that of Europe in the early nineteenth century (**McFarland 1911**:168).

Even though the War of 1812 created difficulties for maritime affairs of America, New England did not fare as poorly as did other parts of the coast during the war. For example, while Philadelphia had no maritime trade because of the British blockade, southern New England kept trading; Connecticut actually expanded its exports during the war (**Albion et al. 1972**:85). Furthermore, the capture of British merchant ships brought needed goods to the Cape, and privateering became a profitable occupation.

The Treaty of Ghent (1814), which ended the War of 1812, did not address fisheries; this was due to a division within the American delegation (**Innis 1940**:224). Another treaty between Britain and the United States, the Convention of 1818, barred American vessels from fishing within three marine miles of the shore of many localities. It did retain for Americans the right to visit the western and southern portions of Newfoundland, the Magdalen Islands, and Labrador (**Goode 1887**:459; **Innis 1940**:224-225). In the harbors of Labrador, ships from New England were able to get a load of capelin (*Mallotus villosus*), a bait for cod (**Bourne 1989**:101). If, however, British authorities caught a ship in forbidden waters, it was confiscated.

These developments encouraged fishermen to fish the nearer Georges Banks. Fishermen had occasionally visited this fishing ground, but the swift currents swept boats off the bank. Fishing there was an arduous, inefficient, and dangerous enterprise. In 1821, a Gloucester skipper anchored there for the first time and survived. He was quickly followed by others (**Kittredge 1987**:188-189; **Morison 1921**:308). Since Cape Cod is the nearest land from the Georges Banks, its fishing ports prospered by sending vessels there.

The negative effects of the Convention of 1818 were offset by government support for the American fishing industry. A tariff that had been imposed in 1816 on imported smoked and dried fish, rebates on exports of pickled fish cured with imported salt, and an increase in the cod bounty in 1819 assisted the New England fishermen (**Innis 1940**:225).

After 1820, many southern New Englanders went to New York to work in maritime industries. Fewer Cape Cod residents moved, however, because they had ample opportunities at home (**Albion et al. 1972**:99-100).

whaleboat. They herded it into shallows to be stranded with the falling tide. Because these easily exploited pods of whales were concentrated in the bay, little or no shore-whaling was done on the Atlantic side of the Lower Cape.

On shore, whale blubber was peeled from the body and cut into chunks. Blubber was rendered in try-works, producing oil that was sold in domestic and foreign markets. Whalebones were scraped clean and sold, but the rest of the whale's body was left on the beach to rot (**Hatch 1951**:68-69; **Kittredge 1987**:168-169; **Yentsch 1988**:154-155).

Shore-whaling and beachfront processing lessened as the number of whales declined in the 1720s. By 1739, blackfish and right whale pods had disappeared from the Cape Cod area. Consequently, deep-sea whaling replaced shore-whaling (**Kittredge 1987**:168-169; **Starbuck 1964**:I:31; **Yentsch 1988**:151, 157-158).

Another factor at work in this transition to deep-sea whaling was frequent disagreement over ownership of whales caught in the bay. To avoid claims of ownership from others, some skippers had their crews cut blubber at sea and then carry it home. Later they built try-works on their vessels. Once these innovations had been adopted, deep-sea whaling expeditions became possible (**Kittredge 1987**:170-171).

The shift to deep-sea whaling "was a very real disaster to scores of Cape families, some of whom had neither the capital nor the courage to follow the whales to sea" (**Kittredge 1987**:171). Whaling became a specialized activity, since hunting whales in deep waters far offshore was not a sideline that could be practiced part-time all over the Lower Cape.

Deep-sea whaling was pioneered on the Lower Cape by Provincetown, Truro, and Wellfleet. In 1727 the *Boston News-Letter* reported:

> We hear from the Towns on the Cape that the Whale Fishery among them has failed much this Winter, as it has done for several Winters past, but having found out the way of going to Sea Upon that Business, and having had much Success in it, they are now fitting out several Vessels to sail with all Expedition upon that dangerous Design this Spring, more (its tho't) than have been sent out from among them (quoted in **Starbuck 1964**:I:31).

By 1737, a dozen whaling vessels were outfitted in Provincetown for voyages to the Davis Straits (**Kittredge 1987**:172; **Starbuck 1964**:I:169; **Yentsch 1988**:158). "So many people are going [from Provincetown] that not over a dozen or fourteen men will be left" (from *Boston News-Letter*, 1737, quoted in **Starbuck 1964**:I:169).

When deep-water whaling began after 1720, ships for whaling were built in Truro (**MHC 1984e**:7-8). In 1758, Henry Atkins of Truro sailed from Boston to the Davis Straits. He found that he could trade trinkets with Native Americans there for whalebone. Other Truro captains cruised the shores of Africa, the South Atlantic, and the South Pacific (**Kittredge 1987**:171-172).

Before the American Revolution, Wellfleet was a deep-sea whaling port. By the beginning of the war, Wellfleet had 420 men employed on 30 vessels with a tonnage of 2,600 tons; it brought in 2,250 barrels of sperm oil and 1,250 barrels of whale oil annually (**Kittredge 1987**:172; **Starbuck 1964**:I:57). Unfortunately, Wellfleet's whale industry never recovered from the British blockade that was imposed during the war, and soon Nantucket outpaced all of the Lower Cape towns in deep-sea whaling (**Clemensen 1979**:21; **Starbuck 1964**:I:57; **Stott 1987**:258-259).

Federal Period (1775-1830)

In some areas of New England, many people moved westward in search of better opportunities. On Cape Cod, however, the availability of marine resources provided local opportunities and lessened the tide of emigration (**McFarland 1911**:150; **Morison 1921**:300).

Politics and Economics. During the American Revolution, the British navy proved a powerful adversary; its presence in coastal waters virtually ended commercial fishing and whaling on Cape Cod, Nantucket, and Martha's Vineyard. Chatham's fishing fleet of 27 vessels and Wellfleet's whaling fleet of about 30 vessels declined to five each (**Kittredge 1987**:172, 185). The British, however, never completely closed the ports of New England (**Albion et al. 1972**:71).

Some fishermen turned to the land for their subsistence during the war, although many engaged in privateering and smuggling along the coast. When the HMS *Somerset* was "struck on the outer bar near Dead Man's Hollow, not far from the Highland at North Truro," in November 1778, townspeople took the survivors in charge and marched them to Boston. Before a sheriff's sale of ship's goods could be arranged, the vessel was "picked clean by local mooncussers" (**Kittredge 1987**:130).

The Treaty of Paris (1783), which involved intense negotiations over access to fishing territories, granted Americans the right to fish the Grand Banks and other banks off Newfoundland and in the Gulf of St. Lawrence, as well as on the British portion of the Newfoundland coast. They could not dry fish on the Newfoundland coast (**Andrews 1962**:712-713; **Innis 1940**:210), and they were granted only seasonal access to "any of the unsettled Bays, Harbours and Creeks of Nova Scotia, Magdalen Islands, and Labrador, so long as the same shall remain unsettled" (quoted by **Meinig 1986**:I:324).

Oystering. Closer to the Lower Cape, in the waters directly offshore, was another important marine resource—oysters (*Crassostrea virginica*, the American or Eastern oyster). Wellfleet in particular was widely known for the oysters it produced. During the eighteenth century, Wellfleet oystermen shipped their harvest to Boston by schooner (**Kochiss 1974**:39).

The people of Wellfleet realized the need to protect the beds. As early as 1674, a Wellfleet town meeting agreed to apprehend non-residents for taking oysters or their shells from the bay (**Echeverria 1991**:39).

In 1775, disaster struck the Wellfleet oyster beds, with a sudden and massive decline in the harvest. Disease may have been responsible, but it is very likely that over-harvesting of oysters and removal of shells for lime were the reasons. Without replacing shells on the sea floor to create a "culch" on which oyster larvae can "set" and grow, oyster beds are depleted (**Kochiss 1974**:41-42).

A response to the 1775 decline was to put oysters taken from Buzzards Bay and Narragansett Bay into the water at Wellfleet (**Kochiss 1974**:39). This was done in the spring to allow the oysters to mature in what appeared to be excellent conditions. Later seed oysters were obtained from Wareham Harbor, the Taunton River, and the Chesapeake region. By 1800, oystermen transplanted 60,000 oysters to Wellfleet each year.

Cape oystermen used their own vessels to ship fresh oysters to markets in Boston, Salem, and Portland. Supplying oysters to the fashionable "oyster houses" of East Coast cities was a major economic activity in the years after the American Revolution. Pickled oysters were also shipped to the West Indies (**Echeverria 1991**:95).

Deep-Sea Fishing. Massachusetts' deep-sea fishing fleets were pre-eminent in the new nation (**McFarland 1911**:146). By 1802, the cod fleet of Provincetown consisted of 32 vessels with an aggregate tonnage of 1,722 tons, which employed about 300 men and boys. These vessels sailed to Labrador, the Banks of Newfoundland, and the Bay of Chaleur. Their annual catch consisted of 33,000 quintals of fish, worth $100,000 at that time. Half the fish were processed in Provincetown, and the entire catch was sold in Boston (**Kittredge 1987**:187; **McFarland 1911**:149).

Typical trips to the Grand Banks lasted about seven weeks, and a skipper could expect to make three voyages a year. A fishing vessel carried 60 to 150 hogsheads of dry salt which were used to process the catch (**N. Smith 1922**:57-58).

Cape fishermen, however, were less likely in the nineteenth century to visit the Grand Banks. They preferred the Bay de Chaleur (between the Gaspe Peninsula and northern New Brunswick) and the Labrador coast, where small craft were adequate, and miles of desolate beaches were close at hand where fish could be processed. As noted previously, waters near these shores were closed to American fishing vessels by treaty in 1818, encouraging fishermen to turn to the Georges Bank (**Kittredge 1987**:186-188).

Voyages to the Georges Bank were "only a little more than a day's sail from home" (**Kittredge 1987**:188). The shift from long voyages to short voyages placed Cape Cod in the center of fish processing.

Drying fish became a feature of Cape beaches and harbor communities. "Fishmakers" used long platforms called fish flakes. A typical flake consisted of a low platform, 30 to 36 inches high, with slats spaced about an inch apart. Partially salted fish were split, washed, re-salted, and laid in the sun to dry for two or three days (**Hatch 1951**:74). Flakes were stacked and covered with tarpaulins in rainy weather (**Kittredge 1987**:186). Salting fish is addressed further in Chapter 5, "Industries: Extractive, Processing, Manufacturing." In many places, equipment requiring large expenditures of capital was owned communally, while smaller items such as hooks, cod lines, and leads were owned individually (**Yentsch 1988**:156). Provincetown owned at this time about 50 seine nets (worth $100 each) that were used to take mackerel, herring, and bass (**McFarland 1911**:149).

Whaling. During the American Revolution, whaling was disrupted. Attempts to revive the industry were made in the decades that followed, but the War of 1812 caused further difficulties. Nantucket was the only port that had a whaling fleet at sea during this war. In the years after the War of 1812, voyages were made from New England to the Pacific Ocean, South America, and Asia. New England whaling was to reach its peak in the following period.

Although men from the Lower Cape engaged in whaling, it was on ships from other ports. Provincetown took up whaling in the 1840s, followed by Orleans, Truro, and much later, Wellfleet (**Stott 1987**:259-262).

Aids to Navigation: Lighthouses. An important activity associated with going to sea was the building of lighthouses. The Cape has long presented a hazard to vessels, and therefore witnessed the early construction of lighthouses. These became the responsibility of the federal government by an act of the First Congress in 1789 (**A.G. Clark 1992**:11). Construction of lighthouses on the Lower Cape dates after this time.

The Cape has long presented a hazard to vessels, and therefore witnessed the early construction of lighthouses.

Captain Winslow Lewis of Wellfleet was instrumental in the development of lighthouses in the United States. Lewis invented a lantern that both reflected and magnified light. This light was not appreciated by all mariners, however, and in 1838 there was agitation to have this country adopt the Fresnel lens used in Europe. This new, revolving

lens was brighter and less expensive to operate; nonetheless, it did not replace the older, fixed lantern until 1851 (**A.G. Clark 1992**:13).

The first lighthouse erected on the Lower Cape was Highland Light, or Cape Cod Light, in Truro. Built in 1796, it was lit in 1797. It was constructed after the Boston Marine Society had petitioned the Congress that the frequent shipwrecks on the Cape made "every attempt to prevent such melancholy accidents interesting & important" (quoted by **A.G. Clark 1992**:23). Located on a "mountain of clay...in the midst of sand hills," this particular light had great importance, as it marked the first landfall on the transatlantic route to Boston. In 1857, the tower was replaced; a brick lighthouse, keeper's house, and generator shed were built. Another keeper's house was added in 1961 (**A.G. Clark 1992**:22; **Welch 1989**:35). This lighthouse was visited by Henry David Thoreau on his sojourns to the Cape.

Chatham Light was built in 1808 (**A.G. Clark 1992**:33; **Davidson 1993**:40; **Welch 1989**:28). The original lights were on twin wooden towers with a double keeper's dwelling. In 1841, the wooden structures were replaced by brick towers. The southern tower was rebuilt in 1863. A new set of cast-iron towers were built in 1881. These were changed to a single light in 1923, and the northern light was moved to Nauset Beach (**A.G. Clark 1992**:31).

A lighthouse was built at Race Point in Provincetown in 1816 and rebuilt in 1876 (**Stott 1987**:248; **Welch 1989**:37). Even with the light to guide them, more than 100 ships wrecked at Race Point between 1816 and 1946. Near this light, at Herring Cove, a fishing settlement called "Helltown" developed (**A.G. Clark 1992**:46).

In Wellfleet, the small fishing village on Billingsgate Island erected the first lighthouse in the town in 1822; it was the third oldest on the Cape (**Stetson 1963**:24). The first light had eight oil lamps with reflectors. Attached to the lighthouse was a brick dwelling for the keeper. As the sea eroded Billingsgate Island, the light was moved to higher ground on the northern side of the island in 1858. A gale destroyed the light in 1915, but earlier that year, a skeleton light was erected to the east of the older light (**Nye 1920**:35). Billingsgate Light was discontinued in 1922 (**Snow 1973**:243). Ruins of the foundation can occasionally be seen at low tide.

The Monomoy Point Light was built in Chatham in 1823 and rebuilt in 1849 (**A.G. Clark 1992**:56; **Stott 1987**:248). It was discontinued about 100 years later, but the light, the keeper's house, and a generator house are still extant.

Long Point Light was built in 1826 (**Stott 1987**:248). A photograph of the first light is illustrated in A.G. Clark (1992:67). Wooden bulkheads protected the structure from the sand and waves at high tide. In 1875 the light was reconstructed in brick, with a wood-frame house. This area is discussed further in the archeological reconnaissance section on Long Point.

Aids to Navigation: Lifesaving. Another activity aimed at saving lives and property was lifesaving. As with lighthouses, the Cape saw the early establishment of lifesaving institutions. Lifesaving as an institution on Cape Cod has been organized under three auspices. It began as an effort of the Boston-based Humane Society of Massachusetts, was later absorbed by the federal government as part of the United States Life Saving Service (USLSS), and eventually came under the direction of the United States Coast Guard (USCG).

The Human Society of Massachusetts was founded in Boston in 1786. Its founders' original focus was on gathering and distributing information on methods to resuscitate those near death from drowning. Many of its activities were social. "Their meetings, from the first, were evidently conducted with a due regard to social amenities and enjoyment" (**Howe 1918**:118). It drew the interest of important and wealthy people in post-Revolutionary Boston. As Howe described it:

> In the lists of officers and members the characteristic local flavor of the new society is most clearly recognizable. The names are conspicuously those of the dominating persons of the town as it immediately survived the Revolution. Many Tory families, whose representatives would have been found on any corresponding list fifteen or twenty years earlier, are unrepresented (**Howe 1918**).

One of the early activities of the society was the construction of shelter huts around Boston Harbor and on the Lower Cape beginning in 1787 (**Howe 1918**). In 1802 the society published and distributed a pamphlet written by the Reverend James Freeman that described the location of the huts and other places of refuge on the Lower Cape (**J. Freeman 1802**). These huts were meant for shipwrecked sailors in need of shelter on the desolate beaches of the Lower Cape. The pamphlet described in detail the six shelters erected by the society from the beach below Race Point to the "Cape Malebarre" (Monomoy Island). Thoreau used this pamphlet as a guide half a century later, and noted the existence of these structures at that time (**Thoreau 1988**:59 [1865]).

Each shelter stood on piles and was 7 feet high and 8 feet square; it was equipped with a small fireplace, a sliding door facing south, and a large flagpole behind. Huts were supposed to be supplied with hay or straw for comfort and enough firewood for a small fire to warm shipwrecked sailors. The construction and maintenance of these huts

was undertaken by non-residents, which may explain why they often were looted of any valuable items stored within for the use of shipwrecked mariners (**Howe 1918**:59-61; **Thoreau 1988**:60 [1865]). In order to better secure the huts and maintain them with supplies, an individual or two from each of the main Lower Cape towns was appointed to look after the structures. Local people apparently did very little about the huts' upkeep; the huts were built and left to decay, having no real local constituency interested in maintaining them. J. Freeman (1802) noted that the hut built at the head of Stouts Creek in Truro was built on sand that had no beach grass. Wind quickly blew away the underlying sand and undermined the structure, causing the chimney to collapse through the floor.

In 1801, the society began to consider purchasing lifesaving boats to be stationed along the coast. By 1810 the first one was in place at Cohasset (**Howe 1918**:92-107). Establishment of new lifesaving boat stations became the main focus of the society's maritime efforts in the first half of the nineteenth century.

Early Industrial Period (1830-1870)

Deep-Sea Fishing. In the 1840s, ships had wells in their holds to keep the catch fresh with ice. At this time there was an increase in the use of ice for transporting fresh fish. Haddock (*Melanogrammus aeglefinus*) and halibut (*Hippoglossus hippoglossus*), which could be kept on ice, joined cod and mackerel as commercially important fish; other species of importance were bluefish (*Pomatomus saltatrix*) and bass (**Albion et al. 1972**:138).

In the 1830s Cape Cod fishermen started learning the migration routes of seasonal fish like mackerel. Many fish that had been considered unprofitable because of their sudden appearance and disappearance now were harvested for commercial markets (Table 18). In the case of mackerel, Cape vessels cruised the coast of Virginia, picked up the schools of mackerel as they headed north, and followed them to the coast of Nova Scotia (**Kittredge 1987**:190; **Ackerman 1941**:33-34).

Mackerel were caught from vessels by baitless, hand-held lines. In 1853, Isaiah Baker went mackerel fishing off Chatham with a new purse seine and improved mackerel-catching techniques for Cape fishermen. Hand-lines, however, were not abandoned, since they required little capital and could be worked by boys (**Kittredge 1987**:192-194; **N. Smith 1922**:66-67). Much of the mackerel catch was salted and packed in barrels under the watch of the state inspector, who graded mackerel on a scale of one to three. Grade one consisted of the best fish, while grade three fish were the poorest quality and were shipped to the West Indies for consumption by plantation workers there.

Wellfleet specialized in mackerel fishing and processing. Its mackerel fleet was berthed at Herring River, Duck Creek Harbor, and Blackfish Creek (**Kittredge 1987**:194-195). At Orleans, fishermen also concentrated on mackerel. In Rock Harbor in 1840, there were three companies that bought the catch: the Rock Harbor Fishing Company, the Fish Weir Company of Orleans, and the Orleans Fishing Company. By 1885, however, mackerel fishing had declined on the Lower Cape, and had ceased altogether in Orleans (**Ackerman 1941**:31-33; **Barnard 1975**:60).

Table 18 shows that by 1838 Provincetown was far ahead of its Lower Cape neighbors in the number of ships that it sent out for deep-sea fishing. Provincetown also had the largest mackerel catch, followed closely by Wellfleet and Truro. Wellfleet apparently was not participating in the cod industry on a large scale, as it was greatly surpassed in that category by both Orleans and Chatham. Eastham had few people employed in deep-sea fishing. A dramatic change took place between the census of 1837 and that of 1845 (Tables 18 and 19). Wellfleet was the only town that retained the number of vessels that it had in the 1837 census. Provincetown employed only half of its previously reported fleet in the mackerel and cod fisheries. Wellfleet outnumbered Provincetown in vessels but not in tonnage. The value of mackerel was down by $276,075, and cod was down by $223,888.

By 1855, Provincetown had restored its tonnage to 1837 levels and continued to use it in the cod industry (Table 20). It did not, however, employ as many people as reported in the 1837 census. Wellfleet continued to expand its fleet, with most of it employed in the mackerel fishery. Truro added a few vessels to its total, but the amount and value of its catch of mackerel and cod were not given for this date.

Over the next decade, Provincetown continued to increase its fleet size and tonnage, while Wellfleet's contracted (Tables 20 and 21). Wellfleet still maintained its dominance in the mackerel fishery, although the value of Provincetown's mackerel catch increased nearly five-fold over the preceding reporting period. Although the amount of Provincetown's cod catch declined slightly, its value more than doubled.

Deep-Sea Whaling. During this period, deep-sea whaling fleets hunted whales all over the globe. The chief products from such voyages were oil, bone, and ambergris. American whaling was mostly done by New England ships. At the peak of the whaling fleet in 1846, there were 736 whalers operating. Of these, only two were from outside New England or Long Island; 18 came out of three ports in New York, and the rest were from New England (**Albion et al. 1972**:116; **Starbuck 1964**:II:442). Within New England, whaling was concentrated in southeastern Massachusetts and adjacent areas.

Provincetown's whaling industry had a different character from that of Nantucket, Martha's Vineyard, or Woods Hole. For one thing, Provincetown did not again become active until the 1840s. Also, 200-ton schooners and brigs were used instead of larger vessels. Unlike other whalers, those from Provincetown rarely went beyond the Atlantic (**Stott 1987**:262).

In 1845, there were 26 vessels with 520 men from Provincetown on whaling voyages. This was the second-highest number of ships and men from ports in Cape Cod and the Islands; it was surpassed only by Nantucket, which had 77 ships and 1,900 men engaged in this industry (**Stott 1987**:262; see also **Starbuck 1964**). Table 22 gives data on Provincetown whaling; further information on whale oil production can be found in Chapter 8.

During this period, Orleans also had a small whaling industry. Census records only list Orleans' production of whale oil for 1855. The town had four vessels with a burthen of 620 tons; 125 men were employed in whaling. Production was 4,000 gallons of sperm whale oil worth $7,000, and 15,000 gallons of other whale oil valued at $11,250 (**Commonwealth of Massachusetts 1856**).

As for Truro, Shebnah Rich wrote that "The whaling business that has been carried on so extensively and profitably in New England originated in Truro..." (**Rich 1988**:109 [1883]). Census records, however, do not document a major deep-sea whaling industry in nineteenth-century Truro (**Commonwealth of Massachusetts 1856**; **A. Starbuck 1964**; **Stott 1987**:262).

During the Civil War, several Provincetown whalers were burned by Confederate privateers (**Kittredge 1987**:173). Since the United States had not agreed to an international convention banning privateering, the Confederate states allowed privateering against northern ships. Thus, the brig *Panama* and the schooner *Mermaid*, in the Caribbean for whales, were taken by privateers in 1861 (**Robinson 1990**:38-39). Although the war hurt whaling, it did not destroy it.

Fish that could be sold in markets were packed in ice and shipped out in barrels. Later, fish freezers were available, and fish were shipped frozen.

In considering the deep-sea whaling of the Lower Cape, it should be remembered that other ports were more significant by any quantitative standard. Another point to keep in mind is that many residents of the Lower Cape involved in deep-sea whaling worked on ships that sailed from other places. For example, Edward Penniman of Eastham commanded "half a dozen different barks out of New Bedford" (**Kittredge 1987**:173).

Primary research on this topic is essential to gain a full picture. Most of the general works on the subject of whaling focus on Nantucket or New Bedford. Secondary sources about deep-sea whaling based on the Lower Cape are not sufficient to tell the entire story. Contradictions and gaps in information abound.

Table 22 summarizes the quantitative data on whaling in Provincetown. After the peak in the 1840s, Provincetown's whaling industry declined, except for a big boost at the conclusion of the Civil War and in the years just after it.

In-Shore and Weir Fishing. In-shore fishing was done by men with hand-lines in small boats, or by pulling sweep seines into the beach. Bass and mackerel were caught this way. At Provincetown, a community was established at Long Point to do in-shore fishing.

Devastation of the in-shore fishery came with the bluefish. This fish was not common around the Cape until the 1840s, but it increased in the mid-nineteenth century. Bluefish ate enormous quantities of smaller fish. Thoreau described oil slicks on the surface of waters filled with bluefish; the oil came from menhaden chewed to pieces by bluefish (**Thoreau 1988**:98 [1865]). The appearance of the bluefish marked a decline in other species available to in-shore fishermen (**Bourne 1989**:99-100). Harvesting the bluefish themselves did not provide enough revenue to offset the losses to Provincetown fishermen caused by these voracious predators.

Fish weirs were used in Chatham as early as the mid-nineteenth century, but they were not used extensively until after 1872 (**Kittredge 1987**:198). This expansion coincided with the extension of the railway into Truro and Provincetown in 1873. The railroad made it possible to ship large quantities of fish on ice.

Weir fishing focused on cod, herring, mackerel, whiting, squid, and flounder. Other fish usually caught in smaller amounts were pollock, silver hake, bonito, Spanish mackerel, and tuna. So-called "trash fish" caught in weirs were menhaden, goosefish, sand shark, sculpin, and skate. Fish that could be sold in markets were packed in ice and shipped out in barrels. Later, fish freezers were available, and fish were shipped frozen (**Kittredge 1987**:198-199; **Marshall 1974**:184-186, 189-190). Additional information on fish freezing is presented in Chapter V.

Oysters. Oysters were a major seafood product during this time. As noted above, the Wellfleet oyster beds suffered in the late eighteenth century. Periodic attempts to revive them were made. Oyster beds were easier to manage and improve than were other marine resources, because commercial oystering differed from other types of fishing in one important respect—most of the beds were leased properties, "staked off and worked by concessionaires" (**Ackerman 1941**:243-245). Individual control allowed for more effective management of the resource than if the beds were public property. Nineteenth-century attempts to improve the oyster beds began as early as 1824. That year, Wellfleet schooners brought Virginia oysters to Billingsgate Island to strengthen the stock (**Morison 1921**:302; **Nye 1920**:25).

The peak of importing cheap Chesapeake oysters for bedding in Wellfleet was about 1850, when 150,000 bushels of oysters were bedded in Wellfleet harbor (**Kochiss 1974**:42). In the 1850s, many Wellfleet oysters were canned for market; the processing of oysters is discussed further in Chapter V.

The practice of transplanting native oysters from their natural beds to in-shore waters could not be sustained in the face of competition from the Chesapeake region itself. After the Civil War, oystermen outside the Cape region found bedding oysters in their own waters more profitable than putting them in Wellfleet beds.

Other Shallow-Water Resources. In addition to oyster beds, other resources near or on the shore were used in the nineteenth century. Estuaries were a source for blue crabs (*Callinectes sapidus*), and in Provincetown, Long Point's Lobster Plain was a source of lobsters (*Homarus americanus*) (**Kittredge 1987**:187). Salt marshes and tidal flats were sources of mussels (*Mytilus edulis*) and periwinkles (*Littorina littorea* and *L. obtusata*), as well as other shellfish (**Godfrey et al. 1978**:15, 34).

On tidal flats, clammers harvested softshell clams (*Mya arenia*), sea clams (*Mactra,* spp.), quahogs (*Mercenaria mercenaria*), and other mollusks. Even though Native Americans had eaten clams since long before European settlement, in historic times their main commercial value was as bait until about 1875. Harvesting clams was a winter occupation for active seamen and was also an occupation for retired fishermen who could no longer work on vessels going out to sea (**Belding n.d.a, n.d.b, n.d.c; Rich 1988**:189-190 [1883]). About 100 men engaged in clamming on the tidal flats in Orleans, and 1,000 barrels of clams were harvested annually to be sold as bait to fishing vessels (**Kittredge 1987**:201).

Shipwrecks and Salvage. Waters near shore provided another resource Cape residents could use—disasters at sea. Shifting sand bars, shallows, and submerged rocks posed a constant navigation hazard. Gales also drove many ships aground. In 1825, three successive gales sent many fishing vessels and their crews to the bottom; in 1841, a gale sank seven fishing vessels and killed 57 men from Truro (**Kittredge 1987**:209; **Rich 1988**:502 [1883]). Even after the installation of lighthouses and lifesaving stations, wrecks were a regular occurrence.

Despite the losses of lives and property involved in shipwrecks, salvaging them and their cast-up cargoes has been an important economic activity on the Atlantic side of the Lower Cape. It was a substantial, if eclectic, source of manufactured goods, raw materials, and agricultural resources for Cape Cod residents. For example, Thoreau described an oysterman's half-acre garden as consisting of cabbage, broccoli, and parsley all raised from seed taken from a wrecked ship (1988:78 [1865]). Another activity Thoreau observed in Chatham was a ship dragging the ocean bottom in the hope of recovering anchors, chains or other items of possible value (**Thoreau 1988**:127-128 [1865]). Driftwood was another material the sea provided.

Wharves. A more constructive activity than scavenging was building the infrastructure for seafaring. The introduction of the wooden piling wharf in 1826 was an advance over crib wharves. Thomas Lothrop built the first one of this kind in Provincetown (**Stott 1987**:245). At first such structures were controversial, but they were quickly adopted as their usefulness became apparent. These wharves were the scene of much activity. In Provincetown, Central Wharf extended into the harbor in line with Central Street; here was located a marine railway on which boats were hauled out of the water for repairs. Central Wharf supported two storehouses, a fish-packing shed, a sail loft, a paint shop, a blacksmith shop, and a grocery store. Most wharves were covered with fish flakes (**Nordhoff 1970**:52).

In Wellfleet, John Harding built a wharf in Duck Creek, and Amaziah Atwood built another. Samuel Higgins built one near where the railroad later constructed a bridge across the creek. Enterprise Wharf was built on the other side of the creek prior to 1837; it was abandoned in 1862. Commercial Wharf was built in 1835, Central Wharf was built in 1863, and Mercantile Wharf was constructed in 1870. These three wharfs were used in the oyster and mackerel industry. Also in Wellfleet, River Wharf was erected in 1840 at Great Island, and another was built on the southern side of Blackfish Creek (**Nye 1920**:24-25).

Stott finds a positive correlation between the number of wharves authorized for six Cape towns, on the one hand, and the value of the cod catch, on the other. He cites data on wharves from 1846 to 1853, when wharf-building was at its height. On the Lower Cape, Chatham had eight, Truro had five, and Provincetown had 34 wharves authorized. It appears that wharf construction was related to large cod fisheries. No similar correlation, however, existed in the case of mackerel fisheries (**Stott 1987**:246).

Aids to Navigation: Lighthouses. In addition to the building of wharves, the construction of lighthouses as navigational aids continued in this period. In Eastham, three brick lighthouses were built in 1838. These were set in a row about 150 feet apart on the bluff at Nauset Beach; each had a fixed light. They became popularly known as "The Three Sisters." Because of the erosion of the bluff, the brick towers were replaced in 1892 with three movable wooden towers. In 1911 a flashing light was installed in one, which became known as the Beacon. The other two were sold, and in 1918 were moved away and incorporated into a house known as Twin Lights Cottage. The Beacon was

deactivated in 1923, when the present Nauset Beach Lighthouse was created. (The latter was moved from Chatham to the same bluff where the earlier lighthouses had stood.) The Beacon became a cottage, and it received an addition. Much later, it was purchased by the National Park Service; the addition was removed, and the original portion was moved to the location of the other two towers in 1986. Remnants of the wooden towers' original foundations are occasionally exposed by the tides (**Stott 1987**:248).

In 1839, a lighthouse was erected on Mayo's Beach at the head of Wellfleet Harbor. Around 1875, a new lighthouse was built at a greater distance from the eroding beach; this second light was converted to an automatic facility about 1920, and was decommissioned soon thereafter (**Nye 1920**:35).

In Truro, the Pamet Light was built at Snow's Beach in 1849 and was discontinued about 1855 (**Stott 1987**:248). Clark describes it as "the mystery light of Cape Cod" (**A.G. Clark 1992**:111), since almost nothing is known about this light. Even the National Archives has little information relating to it, since most correspondence concerning it was lost in a fire.

Stage Harbor Light, also known as Harding's Beach Light (**A.G. Clark 1992**:131) was built in Chatham in 1855 and repaired in 1880. A new, skeleton tower was built in 1933; the lantern was removed from the earlier tower, which became a private residence.

Another light was built at Wood End on Long Point in Provincetown. Wood End was first established as a white pyramidal navigational aid in 1864. In 1872, a wooden signal tower was built, and a brick tower was constructed in 1873 (**Stott 1987**:248). Although the community at Long Point had left before the construction of the lighthouse, a fish-oil factory remained in operation nearby, and "the keeper of this station is much annoyed by the stench and flies coming from the fish-oil works located between this and Long Point Station" (quoted in **A.G. Clark 1992**:126). In 1896 and 1902 additional construction was done here. A stone breakwater was built by the town near here in 1911. When the light was automated in 1961, the dwelling and other buildings were razed.

The construction of lighthouses conflicted with the needs of salvagers. Ralph Waldo Emerson visited Nauset Beach about 25 years after the lighthouses were built, and was informed by the keeper of the light that there was "resistance to the project of building a lighthouse on this coast, as it would injure the wrecking business" (**Putnam 1933**:78).

Aids to Navigation: Lifesaving. In 1840, the state legislature appropriated $500 for the Massachusetts Humane Society to purchase 11 lifeboats, with a 12th purchased by the society with its own funds. The next year, the state granted another $1,350 for the use of the Society (**Howe 1918**:216-220). The state saw the benefits to the maritime economy provided by the Society, and saved money through supporting a volunteer organization instead of creating its own institution.

Each lifeboat had a 20- by 18.5-foot boathouse. A boat was manned by local 10-member volunteer crews who were chosen by the selectmen of the towns. Crew members involved in a rescue received a reward from the Humane Society. By 1841, there were rescue boats stationed at Race Point, Chatham, Nantucket, and the Boston Harbor area (**Howe 1918**:218-221).

In 1847, the federal government began its own program of building lifesaving boats and stationing them along the sea coasts and the Great Lakes. Crews were volunteers, and much mismanagement seems to have taken place with government-purchased equipment. These problems, coupled with a terrible sea disaster off of New Jersey, led to the reorganization of the lifesaving stations in 1854, including salaries for keepers of each station (**Dalton 1991**:24-28).

Late Industrial Period (1870-1915)

Politics and Economics. Barnstable County's fisheries reached their peak in 1851, when they accounted for 45 percent of the state's total weight of fish caught. Five towns made up 80 percent of the county's total catch: Wellfleet, Provincetown, and Truro, followed by Harwich and Dennis, in that order (**Stott 1987**:271-272). Mackerel was still the most important part of the catch in Wellfleet at this time.

Other places in New England also developed major fishing capabilities. Cape Cod yielded its prominence in fishing to ports along the Maine coast during the first half of the nineteenth century. Within Massachusetts, Gloucester far surpassed the Cape in fishing (**Albion et al. 1972**:136). Technological innovations of the time were more efficient, but too expensive for many Cape fishermen. Unlike fishermen on other parts of the Cape, those on the Lower Cape did not form stock companies to own ships, thereby depriving themselves of capital for improvement. Furthermore, although boys had worked at fishing with hand-lines, they were not able to work with the new seining and trawling techniques. Another factor working against local fishermen was the silting of many of the Cape's harbors (**Stott 1987**:272).

During the Civil War, no conflicts came near the Cape. However, since the war stood "squarely between the good times and the bad," it was blamed for the difficulties of fishermen and mariners (**Kittredge 1987**:263). Generally, the late nineteenth century was marked by declines in the fishing fleets of many towns. Provincetown, however, was revived by the arrival of Portuguese immigrants who succeeded in the fresh-fish industry (**Stott 1987**:273).

In the early 1890s, there was a depression that caused the cod fishery to suffer due to falling prices. "The fisheries have decayed very rapidly, owing to small fares and inadequate cash returns. This has brought the vessels in debt, pushing the fishing firms into bankruptcy, and resulting in the sale of the fishing craft and their removal from the town" (**Commonwealth of Massachusetts 1899b**:58).

Further difficulties came with a devastating storm in November 1898. The "Portland Gale," named for a passenger ship that sank off the Lower Cape, destroyed many wharves in Provincetown. **Ruckstuhl** (1987) contains photographs of Provincetown Harbor before and after the damage was done. Local fishermen lacked the capital to repair the wharves and ships.

Deep-Sea Fishing. In Provincetown in the 1890s a new type of fishing schooner was developed. It featured a clippered bow, tapered stern, and long spars, and was faster and more seaworthy than previous cod vessels. It was used mainly for fishing on the Georges Bank and was considered to be a safer boat in such dangerous waters. These ships had the additional advantage of being able to bring perishable fish cargos back to port in a minimum amount of time (**Kittredge 1987**:197).

Cod and Mackerel Fishing. In the decade after the Civil War, Provincetown's fishing fleet prospered, while other Lower Cape towns' mackerel and cod fisheries greatly declined (Table 23). Orleans had only one vessel employed, while Eastham and Truro had none. Provincetown increased its shipping by 128 percent between 1865 and 1875, using most of it in the cod fishery. Chatham increased its fleet from 39 to 69 vessels, but had less than one-seventh of the burthen of Provincetown. Even though its mackerel catch had increased, profits decreased. Wellfleet almost held its own, but did experience a decline in mackerel; no cod was reported for Wellfleet. The value of the mackerel catch decreased by $40,487, and that of cod fell by $98,316.

Provincetown continued its dominance of the cod fishery at this date, while Wellfleet continued to earn more in the mackerel industry (Table 24). Truro and Chatham were distant competition in the mackerel fishery; Eastham and Wellfleet recorded no cod. The number of vessels and their tonnage is not indicated in this census.

All Lower Cape towns suffered in the depression associated with the Panic of 1893. Although Provincetown brought in enormous catches, its overall profits were drastically cut from the previous reporting period (Tables 24 and 25). Wellfleet's mackerel fishery brought only $2,922, a decline of $382,000. Truro's combined profits were down more than $100,000. Orleans no longer participated in either cod or mackerel fishing on a large scale.

Deep-Sea Whaling. After the Civil War, an attempt to revive whaling was undertaken in Wellfleet; one of the vessels sent out was never heard from again, and the venture was abandoned (**Rich 1988**:112 [1883]).

Provincetown did experience a boom in deep-sea whaling in the 1890s, but this activity declined and eventually ended over the next 25 years. The 1915 Massachusetts census stated that "Many of the vessels reported in 1905 as engaged in the whaling industry are now out of commission, and the value and product of the industry have not been included in the presentation for 1915" (**Commonwealth of Massachusetts 1918**:638). Table 26 compares the value of whale products in 1905 and 1915. Further discussion of whale oil production can be found in Chapter V.

A word of caution on using census data regarding whaling: by 1885, whale products were listed in one category titled "Oil, whalebone, etc." Therefore, the reader cannot tell how much of each item was produced.

The New England whaling fleet, based mainly in New Bedford, was not able to compete with the growing Pennsylvania petroleum industry; only the demand for whalebone kept the industry alive (**Albion et al. 1972**:197).

Further difficulties came with a devastating storm in November 1898. The "Portland Gale," named for a passenger ship that sank off the Lower Cape, destroyed many wharves in Provincetown.

In-Shore and Weir Fishing. Weir fishing supported many crews from Race Point to Billingsgate on the bay shore of the Cape (**Marshall 1974**:184-185). Each crew had to apply to the towns for a fishing grant; Truro limited each crew to only two weirs. Crews usually consisted of a captain and four other men. At first they were mostly natives of Cape Cod, but soon Portuguese fishermen began to participate. Young men and teenagers did weir fishing, since the risks were not nearly as great as for deep-sea fishing. Crews worked either for shares in the catch or for straight salaries. Many weir fishermen had some land they could farm during off-hours, aided by sons and daughters and orphaned boys sent to Truro by the state. In the winter months, weir fishermen collected firewood, cut ice, and mended nets and gear for the next season (**Marshall 1974**:185-186).

During the season from March to November, crews typically placed an offshore weir in water 45 feet deep (7 fathoms), and an inshore weir in water about 38 feet deep (slightly over 6 fathoms), with all depth measurements taken at low tide. The inshore weir could be as far as a mile from shore.

A typical weir consisted of three parts: the leader, the heart, and the bowl. The leader was about 900 feet long and consisted of a straight line of poles, each 65 to 70 feet in length and spaced slightly more than 10 feet apart. In the bay waters off Truro, the leader was always oriented west to east. The heart consisted of a heart-shaped arrangement of poles with its narrow end touching the back of the bowl. Each side of the heart was 240 feet in length and

required 14 poles 65 feet long. The bowl consisted of 19 poles each 70 feet long arranged in nearly circular fashion, but with a depression on one side; its perimeter was 300 feet. Fish encountered the leader, swam along its length and entered the heart; they then swam into the bowl where they were trapped. Poles were made from hickory, and were at one end treated with copper paint to resist barnacles. It took four days to rig a weir. Because of the possibility of ice damage during winter months, weirs were dismantled each year at the end of the season (**Marshall 1974**:185, 192-195).

Associated with fish weirs were "fish houses" which served as temporary accommodations for fishermen; catches were processed and briefly stored at these facilities. Fish houses were usually located near the launching site of weir boats or trap boats; a photograph of a fish house in Wellfleet appears in Kochiss (1974:41). Near the fish house would be a large brick fireplace which supported a large iron kettle. Tar was melted in the kettle and applied to the nets to prevent them from rotting in saltwater. Ideally, fish houses were located near a large grassy area where nets could be spread after tarring (**Marshall 1974**:190-191).

In the first years of the twentieth century, weir fishing continued to remain an important economic activity. There were, however, some changes: ownership of weirs, fish houses, and equipment increasingly shifted from individuals and families to stock companies, absent owners, and other corporate groups (**Marshall 1974**:186-189).

Oysters. By 1885, oystering had greatly declined in Wellfleet (**Kochiss 1974**:42; **MHC 1984f**:8, 10, 16; **McFarland 1911**:241; **Morison 1921**:148, 301-302; **Nason 1874**:531; **Stott 1987**:276). Introduction of gasoline-powered oyster boats and oyster dredges in 1902 temporarily increased the yield, but in the long run these innovations reduced the size of the oyster beds. Although oystering did continue after 1880, Massachusetts as a whole was a minor producer of oysters, surpassing only Maine and New Hampshire in New England (**Kochiss 1974**:39).

To get a sense of the nature of oystering in this period, one should consult **Kochiss** (1974). In addition to a discussion of the technical aspects of oystering, there is a photograph taken after 1870 that shows structures used by the Wellfleet Oyster Company, the R.R. Higgins Company, the D. Atwood Company, and the Williams and Kemp Company, all near the railroad bridge in Wellfleet (**Kochiss 1974**:41). All of these buildings are located directly over the water, next to the railroad.

Other Shallow-Water Resources. Clams had little commercial value except as bait until about 1875, when the groundwork for a food industry of large proportions was laid (**Belding n.d.a**:43). Those clams that were harvested for food were shipped by rail, and those collected for bait were salted.

Since there was virtually no demand for them, scallops were not commercially important in Massachusetts before 1872 (**Belding n.d.b**:44). Dredging for scallops began in 1874. Although the waters between Cape Cod and Boston yielded scallops, this region was less productive than the waters to the south of the Cape. On the bay side of the Cape, Orleans was the most productive area for scallops; in Wellfleet, scallops were taken at Billingsgate Island and east of Jeremy's Point. The southern side of Chatham was another place where scallops were commercially harvested; here Monomoy Island shelters scallop grounds from the open ocean (**Belding n.d.b**:41-42).

Another marine animal exploited on the Lower Cape was the American eel (*Anguilla rostrata*). Eels are catadromous, spending most of their lives in fresh water but returning to deep saltwater to spawn (**Godfrey et al. 1978**:15; **Ross 1991**:110-114). They were generally caught in traps during the late summer and early autumn. Captured eels were stored in "eel cars," which were box-like holding pens of about 4 feet square and 2 or 3 feet in height. These were submerged in the river (sometimes in freshwater ponds) where eels could be kept alive indefinitely. Truro fishermen kept eels in eel cars until Christmas, and then sold them live in Boston to supply the Italian community with traditional festival food (**Marshall 1974**:182-183).

Wharves and Marine Railways. As fishing declined after the Civil War, wharf construction also declined in all of the Lower Cape towns with the exception of Provincetown. By 1880 Provincetown had 44 wharves of various sizes. In 1885, $964,573 was invested in wharves, vessels, and outfitter firms, and in related industries such as sail lofts, block-makers' shops, riggers' lofts, ironworkers' places, and three marine railways (**N. Smith 1922**:55; **Stott 1987**:273). In other Lower Cape towns, most wharves fell into disuse after the turn of the twentieth century, and many have since rotted away (**Hatch 1951**:46).

Aids to Navigation: Lifesaving. Even while it was creating its own stations, the government continued to fund the Humane Society until 1870; stations of the Humane Society were distinguished from the government ones by their red paint (**Howe 1918**:245-246, 316). Wages were initiated for the crews of government-run stations in 1869, and presumably this brought to an end the volunteer crews of the Humane Society stations. Federal legislation made lifesaving stations a branch of the Marine Revenue Service (within the Treasury Department) and created the United States Life Saving Service (USLSS) in 1872 (**Dalton 1991**:24-29). The Humane Society continued to exist after the establishment of the USLSS in 1872, with some refuge

huts maintained into the early twentieth century (**Howe 1918**:245-246). For the most part, after 1884 the Humane Society became increasingly involved in non-maritime activities (**Howe 1918**:244).

Secondary sources are weak in differentiating which lifesaving stations on the Lower Cape were controlled by which institution during this time period. Records of the Humane Society of Massachusetts, according to **Howe** (1918), may provide much more detail regarding stations on the Cape. A list of the stations found in **Dalton** (1991) and **Clemensen** (1979:81) is reproduced in Table 27. **Dalton** (1991) contains photographs of the stations, lifesaving equipment, and personnel, as well as drawings of lifesaving drills. **Ruckstuhl** (1987) contains photographs of the Highland, Pamet, Peaked Hill Bars, Race Point, and Wood End stations. Figure 56 shows the locations of USLSS stations and late nineteenth-century shipwrecks.

The USLSS started to offer almost full-time employment for wages on the Lower Cape beginning in 1872, when nine new stations were built on the Cape (**Dalton 1991**:30). Some of the keepers who oversaw the year-round management of each station were Civil War veterans, as were some of the surfmen. All of these men had long backgrounds in maritime work. Most surfmen were born in local towns, though some were of Azorean origin.

The job of a surfman went from August 1 to June 1, and during that time the man was expected to be at the station seven days a week, except for one day a week when he could spend the daylight hours visiting his family. Many, if not most, of the surfmen were married and made careers out of the service. Life at the stations was very regimented, and required a great deal of discipline and drill. Requirements for being a surfman included "good character and habits, not less than twenty-one years and not over forty-five years of age, with sufficient education to be able to transact the business concerned with the station, be able bodied, physically sound, and a master of boatcraft and surfing" (**Dalton 1991**:50). Certainly the wages offered by the service would have made this job attractive, particularly given that most maritime jobs on the Lower Cape at this time required even longer stints away from home.

USLSS keepers had the authority of a customs inspector. They and their surfmen were obligated to "take charge of and protect [lost or wrecked] property until claimed by those legally entitled to receive it, or until otherwise directed by the department as to its disposition" (**Dalton 1991**:54). The interest of the government was being served by recovering dutiable wrecked property, and by promoting commerce through intercepting lost cargo before beachcombers could claim it through the tradition of admiralty law.

Lifesaving men were often familiar with wrecks on the coast. For example, Captain Benjamin Sparrow, keeper of the Highland station in 1902, had grown up in Orleans working with his father as a beachcomber or "wrecker." After serving in the Civil War, he returned home and joined the USLSS in 1872 (**Dalton 1991**:57-58). In his new role as Station Keeper, it was his job to prevent wreckers from stripping ships or carrying away cargo that might be reclaimed by their rightful owners.

The USLSS established regular foot patrols along the coast to locate new shipwrecks and persons in distress. This allowed a careful monitoring of the shore and deterred smuggling activities (**Dalton 1991**:55). A "halfway house" in Truro, used by foot patrols, has been described by Lenik (1972); this article in *Historical Archaeology*, includes information on the structure and artifacts found nearby. Coastal monitoring by foot patrols became more important as the war in Europe threatened America. In 1915, the USLSS was integrated into the Coast Guard, and subsequently served in a military capacity.

The Canal. As early as the seventeenth century, the need for a way for ships to avoid the dangerous waters around the Cape was recognized. The need was not fulfilled until the completion of the Cape Cod Canal in 1914 (**Reid 1958, 1961**). Although this was an important transportation project, it actually proved to be a setback for the Cape because the region became more isolated than before. A private enterprise, the canal was not as successful as had been anticipated, and shipping to the Lower Cape does not appear to have been significantly changed by its presence.

In 1928, the United States government purchased the canal and widened it in the late 1930s (**Farson 1987**). The canal's isolating effect was alleviated with the construction of the Bourne and Sagamore bridges at this time.

Early Modern Period (1915-1940) and After

The twentieth century has been marked by changes in the fortunes of maritime industries in New England. Depressions and price fluctuations have had their effects on the Lower Cape. Whaling disappeared during this time. Shellfishing and fishing for cod, mackerel, and other fin fishes have persisted. However, the fortunes of the fishing fleet dwindled in this century and World War I marked a decline in fishing in Provincetown. Certain maritime activities have become strongly associated with particular ethnic groups.

Whaling. Whaling was moribund in the early twentieth century. **Kittredge** reported that the last of the Cape whalers was at sea in 1916 (1987:173). Actually, the Cape continued its involvement in whaling a bit longer. One of the last whaling voyages was by *The Charles W. Morgan* (later berthed at Mystic Seaport Museum in Mystic, Connecticut). On her 37th voyage, the bark, commanded by J. Gonsalves, left New Bedford in September 1920, and returned to

Provincetown at the end of May 1921. The schooner *Cameo*, under L. Lopes, also was at sea that fall and winter, but did not reach Provincetown until September 1921 (**Hegerty 1959**:45; **Leavitt 1973**:121).

Shellfishing. Local residents continued to harvest oysters and quahogs in the bay. In Wellfleet, laborers in the quahog harvest, who were generally people of Finnish ancestry, earned up to $10 a day. The number of Wellfleet oysters harvested dropped from 16,000 barrels in 1916 to 1,800 in 1926 (**Stott 1987**:276). Declines were due to removal of empty shells, which acted as a fertilizer, and to overharvesting of the crop, which left an insufficient number of mature oysters for spawning. Competition increased from Virginia and Maryland as well. Wellfleet also had 30 vessels engaged in quahog harvesting in the bay (**Marshall 1974**:186-189). Clams and quahogs were shipped to New York (**Crosby 1946**:167-168).

Although commercial fishing continues to this day on the Lower Cape, recreational fishing and sailing have become increasingly significant economically, and at times are in conflict with commercial fishing.

Mackerel and Cod Fishing. At the turn of the century, mackerel and cod remained the principal fish caught by Lower Cape fishermen. Provincetown dominated fishing in the region, regaining some of the edge in mackerel it had lost in 1895, and increasing the value of its cod catch (up from $28,190). Chatham showed slightly less profit from mackerel, and much less from cod compared with the 1895 census (compare Tables 25 and 28), while Truro profited from mackerel but not from its cod catch. Orleans, Eastham, and Wellfleet do not appear to have been actively engaged in these fisheries.

In contrast to the 1905 census, the 1915 report shows that Orleans, Eastham, and Wellfleet were participating to a small extent in the mackerel fishery (Table 29). Chatham and Truro continued their established fishing patterns, and Provincetown profited more from its mackerel catch than from its cod catch during this period.

By the 1920s, sloops and schooners were replaced with power craft 55 to 75 feet long; these vessels could fish in any water in most kinds of weather. Most of these vessels fished for flounder. Gasoline-powered engines made the dragging of fish nets more common in this period. Smaller flounder trawlers or "draggers" were 30 to 45 feet in length, and fished the waters off Cape Cod. About 87 percent of the flounder catch was sent to New York, with the remainder shipped by water or land to Boston. Weirs and traps were used to catch whiting (**Millett 1922**:45-49). Small vessels using longline fishing methods are well-adapted to the Cape's small harbors, and function well amid the many rocks, swift currents, and shoals of its waters. In Provincetown, Chatham, and elsewhere, longline fleets persist, with Chatham having the largest such fleet in the country. Fishermen of Portuguese descent came to dominate the fishing industry in Provincetown, because it was they who most readily embraced such innovations as the gasoline-powered engine for fishing vessels (**Vorse 1990**:163, 171).

The Great Depression saw a drop in fish prices, making it difficult for many fisherman to finance innovations (**Vorse 1990**:167, 287). This problem has persisted, since commercial fishing in the middle and late twentieth century has been characterized by expensive technology, beyond the reach of many Cape residents as individuals. Although commercial fishing continues to this day on the Lower Cape, recreational fishing and sailing have become increasingly significant economically, and at times are in conflict with commercial fishing. Today, places like Provincetown still retain a maritime flavor, but the extent to which a distinctive maritime life still exists on the Lower Cape is a topic for ethnographers and oral historians to examine.

Archeological Implications

Early Fishing Communities

Early fishing on the Lower Cape was an activity conducted by farmers who also were engaged in multiple subsistence activities. Shore fishing was the most common method of catching fish, and most of the catch was for local or home use. Nets generally were drawn on shore. Fish also were caught using hand-held lines and from small four-person shallops concentrating in the early years on mackerel and sea bass. Long Point in Provincetown (occupied 1813-1850) is a typical example of an early fishing community. It was comprised of temporary huts or houses that were floated from the Provincetown shoreline to Long Point, being returned to shore after the season. Provisions were transported by boat, as were fish to market. Structures were located on the sheltered, harbor side. Other early fishing communities include Provincetown, Truro Village, Wellfleet, Rock Harbor and Chatham.

By the 1850s, invasive bluefish had drastically impacted the availability of more desirable species. As a result, the early fishing industry faltered; the use of seasonal fishing communities such as Long Point was, for the most part, abandoned.

Archeological Record and Considerations. Because they were small, seasonally occupied communities, early fishing sites are of low visibility. In some of these communities, many of same activities continue today, e.g., use of fish weirs, fish drying, shore fishing, nets, etc., which complicates the archeological record.

On Long Point, the sites related to the early fishing community may have been disturbed by the Long Point gun batteries of the Civil War.

Houses were moved to and from the site by boat, so the probability of finding foundations are unlikely. Finding evidence of post-in-ground construction is also unlikely,

because structures remained on the flotation gear that transported them.

Casual discards of artifacts associated with fishing or seasonal domestic occupation should be found in areas under and surrounding portable huts and houses. Most artifact distributions are predicted to be located on the sheltered harbor-side of the area, rather than on the Bay.

Privies and other ephemeral features that would be common on other types of sites may be rare because of the inclination to dispose of discards, offal, and human wastes into the water. Artifacts associated with these structures undoubtedly are still evident beneath the waters of Provincetown Harbor, and beneath areas that have become silted in. Unfortunately, their context would have been compromised as a result of the nature of deposition and currents.

If privies were constructed on the shore in the communities, they may be detectable through the analysis of soil phosphates and trench excavation.

Given the size of the communities such as Long Point, adequate water supplies may have been difficult to transport by boat. Wells and associated cisterns may be located near the fishing colonies.

Fish drying and salting may be the activity most detectable archeologically. For a discussion of this issue, see Chapter V, "Industries." Evidence of fish heads in middens may indicate the results of cleaning fish before drying.

Fish weirs consisting of wooden piles and stakes driven into the bay floor were removed seasonally. As with so many resources on the Lower Cape, reuse of materials was very common. However, given the number of pieces and the frequency of breakage, it is predicted that many pieces would have been left behind. Post molds, and perhaps even water-logged posts, would be detectable, particularly in areas where silting has occurred.

Archeological evidence of fishing communities may be found in places one might not expect on the basis of today's environmental conditions, because there has been so much environmental change.

Wharves associated with early fishing communities were not generally of cobb or crib construction, or stone-filled structures. They were piers supported on wood pilings.

Mooring posts or bollards may have left post molds, or in wet anaerobic conditions, the actual posts. These are predicted to exist along the shore of sheltered areas. Eye hooks often are found in stones for mooring boats.

Pilings should be evident in silted-in marshes near the shore, many of which were once were open water and used acoordingly.

The remains of liquor bottles and smoking pipes have been shown to be commonly present in artifact middens on the seaward side of wharfs (**Garman et al. 1995**).

Research Questions. Did fishing continue at a small scale after bluefish reduced other species? Was there increased exploitation of bluefish?

Historical documents state that men and boys traditionally did the fishing. Is there evidence of this in the archeological record? If true, were the women involved in some form of cottage industry?

Did occupants consist of whole families? If so, the archeological record should contain a full range of domestic items. Artifacts may reflect more diversity than a specialized occupation.

Is there evidence of combined activities that fishing people were engaged in? Were people farmers *and* fishermen?

What was the economic status of early fishermen, compared with other industries?

Is there evidence of fish weirs in silted areas?

Infrastructure. The infrastructure associated with fishing was mostly limited to the shoreline. Roads connected the fishing areas to markets and associated shipping locations.

Grand Banks Fishing

Exploitation of fish off the Grand Banks began around 1830. Ventures generally were capital-oriented, especially in Wellfleet and Provincetown. Crews began to sail from wharves, stay at sea for weeks at a time, and carry out much of the processing at sea. The architecture of vessels was adapted to this use. Fish was delivered directly to off-Cape markets, except for lesser amounts delivered to the Cape for local consumption.

Archeological Record and Considerations. One major difficulty with recovering archeological remains of resources related to this type of fishing is that most of the processing facilities were on board ship. Fish and whale products that were delivered to the Cape would have been processed on try-yards and fish flakes on the wharves. Thus, the archeological remains would be minimal.

Wharves were located in towns and their locations should be evident on historic maps. Structures traditionally were reused, built upon, and enhanced through time. If they exist, evidence of wharves and other support structures will most likely occur in areas that were silted-in and subsequently not damaged or destroyed by later development. Unfortunately, given the reusable nature of the wooden structural elements, it is unlikely that easily removed parts would remain. Post molds or other sub-bottom elements undoubtedly would exist, but their detection would be difficult and expensive.

Among the various ethnic groups to settle on the Cape, were there gender differences in the division of labor? For example, among Portuguese groups in the latter part of

the nineteenth century, only men fished, and they initially arrived in male working groups. Once they were establiushed in the area, they brought in their families. Women were probably not involved directly in fishing, but may have worked in salting and processing.

Research Questions. Where were the ships built? Are there shipyards on the Cape that specialized in building vessels that were adapted to off-shore fish exploitation? There was very little shipbuilding in the region generally, most of which focused on the North River, Boston, and Norwell. Did any ship construction occur on the Outer Cape to support this activity?

Where were the ships and fishing boats maintained?

What was the impact on the community of losses to natural disasters, and how did they affect the continuity of this form of fishing? For example, following the devastation of the 1898 *Portland* Gale, in which numerous wharves were destroyed, many fishing businesses were unable to rebuild.

Infrastructure. Infrastructure would have included wharves (with accompanying try-yards, complexes of fish flakes and fish-salting operations built upon them), and roads to markets and associated shipping locations.

Specialized Research. Historic records will be helpful in locating sites, given the detailed mapping of the Cape. Site location will be more easily accomplished by conducting thorough documentary research first. Maps produced in the 1830s by the U.S. Topographic Engineers will be most useful in this effort.

Shipbuilding records may indicate whether or not fishermen purchased vessels from off the Cape. Information concerning loss of life at sea, or in fishing-related accidents will most likely be derived from documentary records, newspaper accounts, cemetery records, etc.

Shipping

Most mariners shipped out of Boston. Few ships sailed directly from Provincetown to ports in Europe or China. Until the railroads were established, local packets were the predominant means of shipping produce and goods throughout the Cape. Steamer service also was important and continued after the railroads were established. In the late nineteenth century steamers catered to tourists. Canal building on the Cape (so common in other parts of New England) was short-lived and not particularly successful.

Archeological Record and Considerations. There was virtually no infrastructure prior to 1644, and so little modification of the shoreline or water courses.

Ships were supplied with coal and other operating materials at other ports.

Packets generally operated out of small local wharves.

Most early shoreline support facilities continued to be used in later years, through replacement or as additions. In the case of filled wharves, earlier structures may still be evident beneath more recent structures. However, since most wharves on the Cape were wooden and on piers, preservation of earlier structures through burial is rare. Areas that were once water but through sedimentation are dry land today may contain evidence of early docking and support structures. These areas include East Harbor and Hatch's Harbor (Provincetown), Pamet Harbor (Truro), Duck Harbor (Wellfleet), Nauset, and Chatham.

During the early nineteenth century, entrepreneurs experimented with canal building for transportation or to enhance fishing. Portions of abandoned canals or ditches may still be evident. Examples include the herring ditch to Gull Pond. "Jeremiah's Gutter," a small canal built in 1804 connecting the ocean with the bay, was used during the War of 1812. Archeological evidence should consist of slumped or naturally filled depressions visible in undeveloped areas.

Eye hooks for mooring pounded into rocks near coves (e.g., at Town Cove, Eastham) may be evident today.

Several wharves were constructed in Wellfleet Harbor, Rock Harbor, and Town Cove (Orleans), North Eastham, Nauset Harbor, and Pleasant Bay. Remains would consist of submerged pilings and middens related to the packet trade. Unfortunately, these wharves were reused in later times.

Most wharves on Cape Cod were of pier-and-plank, open construction. Wharves generally were ephemeral structures that were either expanded in later years, or else razed and their materials reused.

Little shipbuilding took place on the Cape, so archeological remains will be rare. Shipbuilding sites would probably be located away from the deep water's edge, where tidal damage was common. Shipbuilding sites would have been located near wooded areas, close to wood and labor supplies.

Some packets did not use wharf facilities, but rather rested on the bottom of shallow waters at low tide for loading. Middens related to such use may exist in areas that have been silted in or filled.

Wharves used by steamers were more substantial and located in deeper harbors. While these structures were reused over time, evidence of early pilings may still exist. Trash middens associated with freight and passenger trade may still exist in submerged, silted areas nearest the shore.

Excursion steamers operated out of the large commercial wharves such as Provincetown Wharf much as they do today.

The large commercial wharves were located in the larger harbors such as Provincetown, Wellfleet, Nauset Harbor, and Chatham.

In sites used by steamers, coal deposits would be evident in submerged areas immediately surrounding the wharves, and on shore.

There are numerous wrecks of packets in the waters surrounding Cape Cod. The location of these vessels is vague. Sources include a historic ship file produced by the Bureau of Land Management (BLM) for the Outer Continental Shelf (OCS) project in 1979 (**Kley and Bourque 1979**). Sunken vessels should be preserved in the once "offshore" waters in silted-in areas in the eighteenth and nineteenth centuries such as along the east shore of the Cape and in harbors. Many areas that were once usable for small craft are dry land today. Many ship sites are listed in the site files of the Massachusetts Historical Commission.

Research Questions. Does the archeological record of packet shipping bear out the historical record of decline in use of packets as the railroad was extended to the Lower Cape?

Is there evidence that small wharves were discontinued as steamer and railroad transportation predominated?

Were there multiple commercial uses at small-packet wharves that make it difficult to distinguish between packet and other uses?

What is the significance of overall economy in shipping? Even ship captains living on the Cape did not operate on the Cape, shipping predominantly from non-local ports. This issue is difficult to address archeologically, but can be pursued through historical documentary research.

What types of products were shipped to the Cape?

What products were exported?

Infrastructure. Infrastructure related to shipping included piers and wharves where ships were loaded and off-loaded, as well as roads connecting the wharves to commercial centers and suppliers.

Specialized Research. Shipping records were kept at ports of entry, and may be summarized in tax records. Newspaper accounts may include the times of sailing and departure schedules. The most productive course of inquiry is through documents, especially maps, newspaper accounts of shipping losses, departure schedules, business directories, etc. Sources such as the BLM OCS database may be useful in locating shipwrecks.

Whaling

The most common form of whaling was shore-whaling in which whales were beached and processed. While specialists practiced this form of whaling, so did farmers and people from other trades. Deep-sea whaling became important after the 1720s, but declined during the American Revolution. Whaling revived and peaked in the mid-nineteenth century, being conducted on 200-ton vessels. Whaling and its byproducts provided materials for a variety of commercial goods. They include whalebone stays for corsets, expensive Victorian furniture), frames for hairpieces, brooches, jewelry, etc. Ambergris and oil were also important commodities in the nineteenth century. While whaling was an important economic enterprise on the Cape, much of the shipping and processing was conducted off the Cape.

Archeological Record and Considerations. Evidence of deep-sea whaling on shore is predicted to be minimal because most of the processing was accomplished aboard ship.

More evidence of shore-whaling is expected than deep-sea whaling. Implements of shore-whaling should be found in agricultural contexts.

Try-works were located on shore, presumably near areas where whales could be beached. Try-works are discussed in Chapter V, "Industries."

Deep-sea whaling vessels were built in Truro after 1720.

Numerous deep-sea whaling ships were outfitted in Provincetown in the 1730s.

Deep-sea whalers generally lived in town, and cultural material distributions associated with whalers' residences may be identifiable.

Research Questions. Were there separate communities of shore whalers versus deep-sea whalers? Did each group have a distinct community?

Were there differences in domestic sites used by shore whalers versus deep-sea whalers?

What commercial or agricultural activities did women pursue while men were deep-sea fishing or whaling?

Can the construction of whaling vessels be distinguished from other types of ships in shipbuilding sites?

Infrastructure. Most of the infrastructure related to whaling was located in the immediate vicinity of shipping areas, usually in downtown commercial centers. Structures include long wharves and warehouses. Wellfleet Tavern (**Ekholm and Deetz 1971**) and other residential buildings may have been an important part of the whaling infrastructure. Roads were in the immediate vicinity of the wharves. For example, Commercial Street in Provincetown was built on the beach for use at low tide. The catch was sold in Boston and elsewhere.

Chapter V

INDUSTRIES: EXTRACTIVE, PROCESSING, MANUFACTURING

A Note on Sources

Chronology

Archeological Implications

From the time of the first European settlement, extractive, processing, and manufacturing industries on the Lower Cape have produced goods beyond the basic needs of the inhabitants. These industrial activities developed on a far greater scale than those practiced by Native Americans, with production tied more closely to sale and export than to local consumption.

Extracting salt from sea water progressed from boiling brine in kettles to using solar evaporation and long "strings" of saltworks.

Industries associated with the sea have been the largest part of the economy. Extracting salt from sea water progressed from boiling brine in kettles to using solar evaporation and long "strings" of saltworks. Fish processing developed from preparing salted and dried fish on flakes in the open air to canning and later freezing fish. Whales and fish were processed into oil. Other industries included shipbuilding and sailmaking.

As Americans pushed westward in the nineteenth century, New York and the Middle Atlantic states benefited from expanding commerce on their western borders. New England did not have direct access to these western resources, and so did not benefit similarly. However, Massachusetts was able to develop a lucrative manufacturing economy; her seaports brought in Southern cotton for the textile industry, and shipped out cheap shoes for slaves on plantations (**Morison 1921**:213-215, 225).

The Lower Cape did not attain the same level of industrial activity as other parts of Massachusetts. Limited by poor roads, much of the interior of the Lower Cape was too remote to become a manufacturing center. Although there were periodically available sources of labor, such as farmers and fishermen, it never had the large pool of workers on which the urban areas of Massachusetts could draw for manufacturing. Various manufacturing enterprises were attempted, but many efforts were short-lived.

A Note on Sources

Secondary works are a poor source of information on the development of industries and changes in the economy. Too often local histories of the late nineteenth and early twentieth centuries suffer from minimal citations and a disregard for accurate chronology. The authors of that time also were more interested in the Pilgrim past than in economic trends. More recent popular books and guides simply repeat the same stories uncritically.

All the local histories mention saltmaking and windmills, probably because they are considered quaint. A recent work on saltworks, published after the research for this project was completed, is **Quinn** (1993).

The most helpful book about the industries related to fishing is **Ackerman** (1941). Industries associated with the sea, such as shipbuilding, ropemaking, and outfitting, are not otherwise well-covered for the Lower Cape. Data on manufacturing industries are negligible in secondary sources.

General histories of American manufactures do not address an area having only minor industries, such as the Lower Cape, with any degree of specificity. **Handlin and Handlin** (1969) is one work that, even though it does not focus on industrial activity, is valuable for the study of economic history and government relations with business.

Census records do provide information, although categories are not consistent from one census to another. Travel accounts, gazetteers, and government reports can also give qualitative information on industrial output and infrastructure. The accuracy of such data is not easily tested, however, and sometimes statistical information on industrial production is given on a county-wide, rather than town-by-town, basis.

A detailed study of industries requires looking at primary documents. Account books, shipping receipts, tax records, and historic maps that indicate locations of industrial structures are all potential sources of detailed information. State laws establishing bounties or price supports ought to be examined closely; town meeting records may also be useful, since there are examples of towns subsidizing business enterprises.

Chronology

Settlement and Colonial Periods (1620-1775)

When the English settlers of Nauset established their farms in 1644, they probably carried on the trades necessary for survival. Such activities undoubtedly included carpentry, coopering, weaving, sewing, iron forging, cordwaining, and food preservation. These can be described as hand crafts rather than industries, in that they were practiced by many individuals who were not specialists producing for a market. All of the industries discussed in this chapter, whether extractive, processing, or manufacturing, involve intensive activity, some specialization, and a market orientation.

Mills. Mills are examples of two industries. First, constructing mills was itself an important activity that required great skill and knowledge. Second, mills were an essential part of processing grains, fiber, and lumber.

Because there were no mills on the Lower Cape in the mid-seventeenth century, the English settlers of Cape Cod had to take their corn to Plymouth to be ground. The easiest mill to build was one run by water power, and Truro and Eastham had a few streams where water-powered grist mills were constructed and used through the nineteenth century.

Limited water power potential on the Lower Cape encouraged the settlers to build windmills, even they were more intricate and expensive. Plans of windmills were

brought to Plymouth by Pilgrims who had lived in Holland (**Barnard 1975**:63). Because of the absence of skilled millwrights, old windmills were reused by moving them to different sites. "Half the windmills on the Cape ended their days on new sites" (**Kittredge 1987**:73-74; **MHC 1984b**:8). In Orleans the oldest windmill was at Namskaket; it was later moved to the east side of the hill near the cemetery. The mill that replaced this one was moved to Falmouth center. In South Orleans a mill that was situated on Route 6A was moved in 1839 to Jonathan Young's home (**Barnard 1975**:62-63).

Eastham has the oldest workable grist mill on the Cape. Town records claim that it was originally built in Plymouth before 1700, and was moved to Cape Cod in 1788. It was set up on its present location across from Town Hall in 1793, where it ground corn until 1900. Later it was again used to grind corn for the entertainment of summer tourists.

In South Orleans, another mill was located "on a short lane leading from Portanimicut Road" (**Barnard 1975**:62-63). Early windmills in Wellfleet were located at Bound Brook Island, Pamet Point, north of Perch Pond, and north of Squire's Pond on Mill Hill (**Nye 1920**:27-28). Four windmills were built to power gristmills in Truro during the eighteenth century, starting about 1711. They were located at the town center, South Truro, and the Highlands. In the Federal Period (in 1797), the Godfrey Mill (now on the National Register) was built in Chatham (**Stott 1987**:238).

Tidal mills used an alternative source of power, the ebb and flow of the local tides. An early tidal mill for grinding corn was set up at South Orleans at Kescayogansett or Sparrow's Pond. A description of this site in the 1970s reported that "the stones of the foundation are seen today in the narrow channel where the mill's big paddle-wheels revolved. They had a unique manner of reversing so that grain was ground on the incoming and outgoing tides" (**Barnard 1975**:63). There was also a tidal mill "in the creek below the Hamblen place" in Wellfleet (**Nye 1920**:27-28).

Saltmaking. Salt was made on the Cape before the invention of "saltworks." The earliest method used was boiling down saltwater in huge vats, a process that required enormous amounts of firewood. This contributed to the destruction of forests already being depleted for lumber for construction and firewood for burning lime and heating homes (**Kittredge 1987**:151). In 1711, Truro was already concerned with the effects of deforestation, and it regulated the cutting of wood on the common, or on the town's undivided lands (**MHC 1984e**:8; **Rich 1988**:101 [1883]). A firewood-saving innovation in saltmaking—the use of solar evaporation—was developed in 1776, which aided the expansion of this industry in the early nineteenth century.

Whale Oil. Processing oil from beached whales was an early enterprise on the Lower Cape. Cape residents cut into pieces the carcasses of beached whales and those that had been driven ashore, and then rendered the blubber in try-yards set up on the beach. Whales that were killed offshore were towed to the nearest try-yards, which were located at Great Island, Lieutenant Island, Griffin Island, Physic Point, and South Wellfleet. Conflict among residents of Eastham regarding the disposition of beached whales as early as 1674 attests to the value placed on this commodity.

Whale oil produced on the Cape could be consumed locally or sold in London. Several Wellfleet residents profited from the whale oil business until the American Revolution stopped the oil trade (**Echeverria 1991**:95; **Nye 1920**:22-23).

Federal and Early Industrial Periods (1775-1870)

Among the industries prominent in these periods were saltmaking, fish processing, fish- and whale-oil processing, and maritime-related industries. There were some attempts at textile and shoe manufacture as well, although they did not have the same significance as the other activities.

Politics and Economics. Maritime industries in particular suffered during the American Revolution and its aftermath: accustomed trade routes were disrupted, local labor was diverted to fighting the war or farming, and many men took to privateering for the Patriots. Towns dependent on fishing and allied industries were virtually ruined by the conflict.

After the Revolution, Great Britain prohibited American trade with the West Indies. This ban encouraged Canadian entrepreneurs to fill the gap, and Americans to market their fish in Europe. Later, Americans were again permitted to ship fish to the Caribbean, and Europe declined as a market.

Government-granted bounties in 1789 gave some aid to the shipping industry, but the bounties proved insufficient. Additional help was legislated by the Congress from 1792 to 1818. The early years of the European wars of the Napoleonic Era may have helped the recovery; however, the Embargo of 1807 and the War of 1812 brought fishing and shipping to a standstill. Once again, many men turned to privateering. After the War of 1812, the economy turned around and expanded until the Panic of 1837, a financial crisis that led to a depression that lasted until 1843 (**Andrews 1962**:709).

In 1846, reduction in the United States tariff on imported fish—coupled with a bounty France offered its fishermen, who worked for lower wages—had a negative effect on the fortunes of New England. The importation

of fish into the United States increased. With more fish coming from France, New England fish-processing industries suffered (**McFarland 1911**:130-141, 165-168). Yet another depression began in 1857, when some Cape industries, especially saltmaking, were already hard pressed.

Saltmaking. In 1776, John Sears of Dennis changed the saltmaking system by using solar energy to evaporate saltwater in shallow vats. A form of solar evaporation had been used in Europe by the eighteenth century, but this was done in clay-lined beds unavailable on the Cape; Sears used wooden structures in his process. In 1793, Reuben Sears of Harwich improved John Sears' work when he built covers that could be opened on sunny days and closed in inclement weather. The process was again improved when Nathaniel Freeman of Harwich used small windmills to run pumps that brought water into the vats; "miniature windmills whirled above the low roofs of the saltwork sheds" (**Deyo 1890**). Hattil Kelly refined the roof system when he developed a system to cover or uncover two vats at a time (**Deyo 1890**:143; **Morison 1921**:145; **Rich 1988**:459-460 [1883]; **Swift 1975**:257-259 [1884]). Blocks, pumps, and rollers for saltworks were made by Joseph Young of Chatham after 1828, and the manufacture of saltmaking apparatus was mechanized in 1847 (**Deyo 1890**:602).

Reuben Ryder was the first to build a saltworks in Chatham, shortly after 1800 (**Quinn 1990**:155). His works were built in strings about 250 feet by 18 feet, each vat being 36 by 18 feet. The roofs were divided into 12-foot lengths called doors, which were on movable rollers. Each vat was divided into five parts. Into the first the seawater was pumped by windmills and then drawn into the others which were on progressively lower levels; salt would collect in the lowest level (**W. Smith 1981**:380). A set of drawings of Enoch Harding's saltworks in Chatham, ca. 1830, was made for the **Historic American Buildings Survey** (HABS); each vat is depicted as being nearly 15 feet square (HABS Massachusetts Survey 172, Figures 58-61).

Different salts were produced by this process. One of them, Glauber salt, was used in tanning to prevent hides from drying stiff, as well as for medicinal purposes. A description of the production of Glauber and Epsom salts is found in Kittredge (1987:152-153). The final product, sodium chloride, was used principally for the preservation of fish. It was stored in bushel baskets if consumed locally, or put in barrels if shipped.

Historic maps from the period suggest that the favored locations for saltworks were coves, particularly on the bay side or near Nauset Harbor and Town Cove; one potential location of saltworks in Eastham is discussed in **Holmes et al.** (1994a). Among the locations that had saltworks were the Provincetown Harbor area and the Pamet River. In these places, seawater could be pumped by means of windmills into the evaporation vats. A nineteenth-century print of Provincetown harbor shows many such saltworks, and another contemporary print illustrates the structure of a covered vat (**Barber 1839**).

Saltworks are indicated on historic maps of Eastham (Figures 23 and 34-36). Wellfleet also supported extensive saltmaking facilities; in addition to Bound Brook, saltworks were located at Milton Hill, The Cove, Griffin Island, and South Wellfleet (**Nye 1920**:25) (Figure 24). At Long Point in Provincetown, there were several sets of saltworks that were powered by six windmills (**Hatch 1951**:45; **Ruckstuhl 1987**:80). Other saltworks lined the shore of Provincetown Harbor (Figure 26).

Saltworks grew and multiplied rapidly; in 1802, there were 136 operations on the Cape that together produced more than 40,000 bushels of salt and 182,000 bushels of Glauber or Epsom salts each year. The Embargo and the War of 1812 caused prices to rise, and more saltworks were established (**Kittredge 1987**:152-153). Many of these were very small enterprises. Rich wrote that "Every man living near the saltwater had his patch of saltworks, if it took his last patch of cornfield or potato yard" (1988:461 [1883]). The reported data on salt production may not include some backyard operations that provided salt for local fishermen who wanted to preserve their catch. Consequently, official statistics are probably low.

Besides employing mechanics who constructed the saltworks, making salt gave employment to elderly men and boys (**Rich 1988**:461 [1883]). Some of the boys who worked at the saltworks were "adopted" (but not legally) by local families to help with the operations (**N. Smith 1922**:50).

Data on salt production in the early nineteenth century have been given by **J. Freeman** (1802) and **Kendall** (1809). In his discussion of these data, **Stott** (1987:292) asserts that Kendall's information on capacity was inaccurate, and he presents adjusted figures that he believes to be more accurate. Table 30 is a summary of the number and capacity (in linear feet) of saltworks on the Lower Cape for 1802, 1809, and 1831, as adjusted by **Stott** (1987:292).

Stott estimates the average size of saltworks operations on the entire Cape, in 1831, as being between 200 and 2,000 linear feet, with few, if any, operations greater than 5,000 linear feet. The largest saltmaking operations were not on the Lower Cape, but in Yarmouth, Dennis, and Falmouth; nonetheless, the saltworks at Provincetown and Chatham were substantial (**Stott 1987**:291).

By 1837 there were about 668 saltworks in Barnstable County, making salt with an annual worth of $225,000 (**Morison 1921**:301). On the Lower Cape, there was a decline in the number of works in Chatham, Eastham, Truro, and especially Orleans, but slight increases in Wellfleet and

Provincetown (**Freeman 1965**:II:541 [1862]; **Lowe 1968**:34-35). The production for 1837 is shown in Table 31.

Data on salt production for subsequent years reveal a general decline and virtual disappearance of the industry (Tables 32-34). Chatham and Orleans had an increase in the number of persons employed in saltmaking between 1837 and 1845, even though the number of saltworks and the total production of salt declined.

Several events caused the decline of the salt industry by the mid-nineteenth century, and these have been discussed by various authors (**Deyo 1890**:144-145; **Handlin and Handlin 1969**:79, 210; **Hatch 1951**:43; **Kittredge 1987**:154; **Lowe 1968**:35; **MHC 1984d**:14; **Nye 1920**:25; **Rich 1988**:461 [1883]; **Rubertone 1985**:103; **N. Smith 1922**:51; **Stott 1987**:293-295). Salt deposits that could be mined were discovered near Syracuse, New York, which caused a drastic drop in Cape Cod salt production. Salt springs in Virginia and Kentucky provided competition as well. The cost of importing soft pine from Maine for building the apparatus rose. There was also an increase in the frozen fish business, which nearly eliminated the need for salt-curing. A state bounty on salt ended in 1834, removing an incentive for salt production, and in 1842 a tariff on the importation of foreign salt was lifted, further injuring domestic producers.

Further declines can be seen in data for 1855 (Table 33). Provincetown showed a dramatic loss in the number of saltworks, from 70 to only five in the decade after 1845. Information for Wellfleet in 1855 is unusual in that decline in the number of saltworks, employees, and the value of the capital invested were accompanied by dramatic increases in the amount and value of the salt produced; this anomaly perhaps can be explained by an error in data collection. If the data for Wellfleet are correct, then it is possible that the decrease in the number of saltworks on the Lower Cape provided a business opportunity for a small number of efficient producers.

By 1865, the salt industry had diminished further, even though the price of salt had apparently increased. Two towns, Chatham and Truro, reported no salt production (Table 34). Although the industry was "pretty well killed off before the Civil War," it did not die out entirely until after 1870 (**Morison 1921**:301).

Saltworks are indicated on nineteenth-century maps (Figures 34-36; **Walling 1858**). Even though saltworks were plentiful on the Lower Cape, they may not have left much of an imprint in the archeological record. The ever-frugal New Englanders gradually broke up the saltworks and used the lumber for building barns, sheds, and houses. As early as the late 1840s and the 1850s, it was reported that the saltworks were being dismantled (**Thoreau 1988** [1865]). In 1939 Hatch lamented that "there is hardly anyone who can even point out the site of one of these plants" (**Hatch 1951**:43). Saltwork sites include Rock Harbor in Orleans, Fort Hill in Eastham, and Race Point in Provincetown.

It has been suggested that cedar pilings encountered during the dredging of Rock Harbor in 1992-1993 may be related to saltworks construction (**Michael Steinitz 1993**: personal communication). Ruckstuhl reports that pilings along the shore in Provincetown were "remains of the many windmills used to pump seawater for making salt" (**Ruckstuhl 1987**:14).

Quinn (1993) discusses the saltworks of the Lower Cape in *The Saltworks of Historic Cape Cod*. This book contains photographs of saltworks, and addresses the production processes and the locations of saltworks. A list of saltworks owners appears on pp. 237-240 of this work.

Curing Fish. Salt produced in local saltworks was used in curing (i.e., salting and drying) fish. Some was used on the Lower Cape, but much was marketed to Great Britain and the West Indies. During the American Revolution, fishing apparatus of all kinds fell into disrepair from non-use; after the war, "Flakes...used in curing fish had long since disappeared" (**McFarland 1911**:130).

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Fish flakes were rebuilt as accompaniment to the Grand Banks fishing operations. Fishermen going out to the Banks in spring and returning in the fall preserved their cod by salting. The catch was unloaded from the larger vessels into dories and brought ashore, after which they were "washed in boats filled with seawater and then taken by wheelbarrow to the fish-drying flakes" (**Ruckstuhl 1987**:59). Flakes were made of latticework laths set on posts a few feet off the ground. Drying fish had to be turned once a day to cure properly. Those who dried fish were called "fishmakers." A description of fish drying in Provincetown was given by Thoreau:

> A great many of the houses here were surrounded by fish-flakes close up to the sills on all sides, with only a narrow passage two or three feet wide, to the front door; so that instead of looking out into a flower or grass plot, you looked on to so many square rods of cod turned wrong side outwards (**Thoreau 1988**:168 [1865]).

Nearby saltworks would have provided the salt needed for the process described above. In the 1850s, however, local salt production declined. Therefore, most of the salt used for fish preservation in the late nineteenth century was imported.

Cod Liver Oil. This oil was produced by trying out cod livers. Try-works were on every wharf; they consisted of an iron kettle that could hold three barrels, set on a brick foundation. After 1848, crews tried out cod livers on board

ship; this oil was later refined and bottled (**N. Smith 1922**:86-87). The freshest livers were necessary for the process, as this guaranteed the potency of the oil's vitamin content (**Ackerman 1941**:270).

A plant in Truro was the only such facility on the Lower Cape in 1845; it is not listed in census data for 1855 (**Commonwealth of Massachusetts 1846, 1856**). Provincetown, instead, was the sole recorded producer in 1855, producing $400 worth "for medicinal purposes." During the following decade, all the Lower Cape towns produced some cod liver oil. Chatham entered the business and made oil worth $17,290 in 1865. Orleans' oil production was worth $550, Eastham's was $100, Wellfleet's was $400, and Truro's was $150. Provincetown outstripped them all with $42,465 worth of product (**Commonwealth of Massachusetts 1868**).

Whale Oil. The scope of whaling was enlarged with the installation of onboard try-works. These were iron pots set in a brick furnace (**Kugler 1980**:154). Production of whale oil by Provincetown oilworks and ships for this period is shown in Table 35.

By 1865 Provincetown had the monopoly on the whale fishery on the Lower Cape, but the industry itself was declining. Whale oil, which was used for lamps and other illumination, met serious competition with the introduction of coal gas for lighting. Discovery of petroleum in Pennsylvania in 1859 was even more of a threat, as it was cheaper and more plentiful (**Albion 1972**:118).

Shipbuilding. Some of the needs of the shipping and fishing industries were met by craftsmen employed by ship owners, or by small operations situated around harbors. A few manufacturing industries did develop. One of these was a small-scale shipbuilding industry. Census data (Tables 36 and 37) show that Chatham built only a few vessels; it was not listed after 1845. Orleans is listed only on the 1845 census. Eastham, Wellfleet, and Truro reportedly did not build any vessels from 1837 to 1915.

Provincetown built no vessels from 1832 to 1837, but apparently got into the business soon after. The 1845 census (Table 37) shows a peak of production, when 150 vessels were built; after this there was a continued decline. In 1855 there were three shops that built 70 vessels, employing seven people; in 1865 these three shops built 19 vessels and employed three people. By 1875 only one shop was in operation, and in 1885 no ships were built in any Lower Cape town (**Commonwealth of Massachusetts 1838, 1846, 1856, 1868, 1877, 1888**).

Blocks and Pumps. This industry does not appear in census records for the Lower Cape towns until 1855, at which time Chatham had $3,000 worth of merchandise made by four people. Provincetown made $2,000 worth and employed three people. Wellfleet had one shop that made $200 worth of goods. Orleans, Eastham, and Truro were not listed (**Commonwealth of Massachusetts 1856**).

In 1865, Wellfleet had three shops that manufactured these goods; three employees made $1,500 worth. Provincetown had two shops that employed three persons, and made blocks and pumps worth $2,100. This category is not reported in census data after 1865 (**Commonwealth of Massachusetts 1868**).

Anchors and Chain Cables. In 1855 in Eastham, three forges employed four persons in the manufacture of 10 tons of wrought-iron articles valued at $1,200. Wellfleet was recorded as having three forges, but their output and personnel were not given. Provincetown operated eight forges, employing eight persons who made 40 tons of goods worth $8,500. The year 1855 is the only one for which this information was available (**Commonwealth of Massachusetts 1856**).

Sailmaking. In the age of sailing ships, this industry was essential. Sail lofts were concentrated in harbor areas, especially Provincetown, which was clearly the center of sailmaking on the Lower Cape. In 1858, a business directory for "Provincetown Village" lists eight sailmakers; of the seven addresses given, all were located on one of the wharves or on Commercial Street (**Walling 1858**). Data for 1855 production presented in Table 38.

In 1865, there were two sail lofts in Chatham employing three workers; they produced 43 sails of American fabric for $82,000, and five sails of foreign fabric. No sail lofts were reported for Orleans or Eastham. Wellfleet had three, employing eight people; they made 82 sails with American fabric. Truro had one that employed two workers, making 18 sails with American fabric and one sail with foreign fabric. Provincetown had eight sail lofts employing 16 workers; they made 150 sails of American fabric, and 43 of foreign fabric (**Commonwealth of Massachusetts 1868**). These data are presented in Table 39.

Oil Cloth. Before the invention of the sewing machine, fishermen's oil clothes were made by outfitters, who bought cotton cloth and cut the pants, jacket, and hats. These pieces were then put out to local women for sewing. When completed, the outfits were painted with several coats of linseed oil and hung to dry in the outfitters' store loft (**N. Smith 1922**:90).

Cloth and Clothing. There were some minor textile manufacturing enterprises on the Lower Cape. The Chatham and Harwich Manufacturing Company was established in 1827, and in the 1830s the Wellfleet Manufacturing

Company was incorporated to make cotton and woolen cloth (**Kittredge 1987**:145-146). No cloth was reported made in Chatham, Wellfleet, or other Lower Cape towns in 1835 (**Commonwealth of Massachusetts 1838**). Only 76 pounds of yarn, worth $76, was made in Orleans in 1855 (**Commonwealth of Massachusetts 1856**). Manufacturing industries did not flourish on the Lower Cape in the Early Industrial Period (1830-1870). A downturn in the cod and mackerel fisheries after the Civil War, however, encouraged new attempts at land-based manufacturing.

In 1865, in Chatham, there was one clothing manufacturer that employed two males and two females; it sold a total of $4,500 worth of clothing. Orleans had one manufacturer of clothing, employing one male and two females; its product was worth $750. Eastham had no clothing manufacturers. Wellfleet had three "clothing establishments" employing five males and 30 females, and producing $40,000 worth of clothing. Truro had one clothing manufacturer, employing one male and three females who made $2,000 worth of goods. Provincetown had two clothing manufacturers employing five males and 18 females, making $8,000 worth of clothes (**Commonwealth of Massachusetts 1868**).

Boots and Shoes. From 1837 to 1865, the Massachusetts census reports commercial ventures in the boot and shoe industry in the Lower Cape towns. These data show some successful small-scale, short-term ventures in the industry, but nothing that could be sustained (Table 40). In Chatham, three people were employed over the period; the quantity of output declined and the value of the product was uneven. Orleans steadily declined in products and receipts, with a high of 2,450 pairs of boots and shoes made by 14 persons in 1837, to 94 pairs made by one person in 1865. Eastham originally had the largest operations, employing 27 persons to make 3,200 pairs of boots and shoes in 1837. For the next reporting period in 1845, the quantity was down to only 350 pairs made by three persons. Eastham is not listed as a manufacturer on the 1855 and 1865 censuses. Wellfleet's output increased from 1837 to 1845, but fell in 1855 and does not appear on the 1865 census. Truro also had a small production of boots and shoes in 1837 and in 1865, but is not listed in the censuses of 1845 and 1855. Provincetown was not listed in the 1837 census. However, in 1845, it manufactured nearly three times the output, and double the value of its nearest competitor, Wellfleet. The 1855 census shows that Provincetown was by far the largest boot and shoe manufacturer on the Lower Cape, but it is not listed on the 1865 census as making any products. By 1875 no town on the Lower Cape was listed as a manufacturer of boots and shoes (**Commonwealth of Massachusetts 1877**).

Late Industrial Period (1870-1915)

The Late Industrial Period saw major changes in the nation and the world. Technology changed greatly and foundations were laid for the urban-industrial society of the twentieth century. There were economic shocks that accompanied these changes. On the Lower Cape, industries and the people who worked or invested in them were often affected by forces beyond their control. Numerous industries failed, and many people lost jobs in the depressions of 1873, 1893, and 1907.

Curing Fish. Salt consumption can be used as a way to measure the production of dried and salted fish (Table 41). Unfortunately, data on salt consumed by towns on the Lower Cape are reported in different units, making comparisons difficult. For example, 1837, 1845, and 1855 census records list the amount of salt consumed in bushels; records for 1865 and 1875 note the value in dollars of the salt consumed; and those of 1885, 1895, 1905 give the amounts consumed in barrels, with their dollar value (**Commonwealth of Massachusetts 1838, 1846, 1856, 1868, 1876, 1888, 1899b, 1909b**). Even within the same census report, domestic and imported salt consumed might be presented in different units of measurement. Records from 1915 do not indicate salt consumption at all (**Commonwealth of Massachusetts 1918**).

Canning Fish. In the late nineteenth century, there was a fish cannery at North Truro that was supplied by local weirs. It was "located north of the No. 2 fish building on the beach." This cannery was owned by Underwood Company and produced pickled baby mackerel; each can was "individually hand-soldered." Early in the twentieth century, whiting, or silver perch, were landed and processed in a cannery on Pritchard's Wharf (east of Railroad Wharf) (**Marshall 1974**:197-199).

Ice for Preserving and Freezing Fish. Ice was a necessary component of the fresh and frozen fish industry. At the end of the century, icing replaced salting as a means of preservation, as indicated by comparing data on salt consumption between 1885 and 1895 (Table 41). By the late nineteenth century, cod catches brought in by the Grand Banks fishermen were packed in ice in barrels for shipping or storing (**Ruckstuhl 1987**:40).

Ice was cut in winter from local ponds. Tons of ice blocks were stacked in ice houses, and covered with hay to forestall melting. The walls of the ice houses were filled with sawdust for insulation. At the turn of the century, the ice house located at Village Pond in North Truro was owned and operated by John G. Thompson in connection with his extensive interests in fish weirs. Other fishhouses that used ice for preservation were located at the mouth of the

river near the junction of Corn Hill and Castle Roads, and at the Corn Hill flag station (**Marshall 1974**:30, 32-34). Ice consumption in the late nineteenth and early twentieth centuries is illustrated in Table 42.

Freezing Plants. Cold-storage freezers continued the trend in the technology of fish preservation that began with the use of blocks of ice. Local fishermen took advantage of the new invention by fishing with traps and weirs along the shore, catching fish that could be frozen but did not salt well.

Menhaden were also a desirable source of fish oil for medicinal and industrial purposes, including curing leather.

The first freezing plant on the Cape was built in Provincetown in 1893; this facility used newly invented ammonia freezers (**Marshall 1974**:196; **MHC 1984d**:17; **Ruckstuhl 1987**:41). Six of these operated in Provincetown in the late nineteenth and early twentieth century. Also in 1893, the North Truro Cold Storage Company, owned by Truro residents, built a fish freezing plant, which was located near the railroad for easier access to shipping facilities. It was originally used to freeze bait for ocean-going fishing vessels. About 30 persons worked there, and "it was often necessary to get men from Provincetown, since there were not enough local men in Truro available." This company bought all the local weirs, thus assuring a steady supply of fish for processing (**Marshall 1974**:198). The North Truro plant burned in 1914, and was rebuilt. The new facility could handle from 3,000 to 6,000 barrels of fish at a time. In 1933 the plant was purchased by another locally owned company, the Pond Village Cold Storage Company.

With the use of the "beam" and "otter" trawlers about the beginning of World War I, frozen bait was no longer necessary, so freezing facilities were used exclusively for fish (**Marshall 1974**:196-197; **MHC 1984e**:14). The North Truro plant tried freezing whiting that were taken from the local weirs. Markets for whiting were first developed in St. Louis, and later in southern and western states. The frozen fish were also shipped to the Pennsylvania coal fields, but this venture was not successful.

Cod Liver Oil. Production of cod liver oil generally declined in this period. Provincetown continued to produce codfish oil, but in 1875, its gain over 1865 production was only $12,902 for the 21,495 gallons it processed. Chatham made only 1,330 gallons worth $692 in 1875 (**Commonwealth of Massachusetts 1868, 1877**). Chatham increased its production of cod liver oil in 1885, but still had only 2,363 gallons worth $1,081. Orleans made 160 gallons worth $28; Truro had 2,636 for $584; Provincetown produced 64,852 gallons for $17,295; and Eastham and Wellfleet had none. Production dropped off even further in 1895. Chatham made 1,679 gallons for $434, and Provincetown 2,400 gallons for $517. Orleans, Eastham, Wellfleet, and Truro had none. In 1905 Provincetown was the only manufacturer of fish oil, with 20,220 gallons valued at $8,967. The 1915 census does not list any type of fish oil as a category (**Commonwealth of Massachusetts 1888, 1899b, 1909b, 1918**).

Menhaden Oil. Even though menhaden were plentiful in the waters off the Cape, menhaden fishing was limited prior to the Civil War. The primary use of menhaden was as a fertilizer "in its raw state" (**Goode 1887**:335). Menhaden were also a desirable source of fish oil for medicinal and industrial purposes, including curing leather (**Bourne 1989**:240).

About 1855, menhaden-oil processing methods were developed. The process consists of boiling the fish, pressing them, and clarifying the expressed oil. A later development was the steam-rendering method, in which a hydraulic press was used in place of the screw-press for better results (**Goode 1887**:335).

In the larger oil works, fish were conveyed to the upper story of the factory on wooden tramways in cars containing about twenty barrels each, and dumped into reservoirs that replenished the cooking-tank supply as needed with 50 to 75 barrels. Cooking tanks were filled with about 6 inches of seawater, which steamed the fish as they were boiled for at least a half hour. From this process, about two-thirds of the oil was extracted; the remainder was obtained through the efforts of the hydraulic presses. The oil and water mixture was then run through several drawing-off tanks, with the water separating and settling to the bottom. It was purified further when it was put into a 4,000- 5,000 gallon settling tank for a few hours, and finally pumped into bleaching tanks. Here, exposure to sunlight made the oil clearer and whiter. After one to two weeks in the sun, the oil was ready for shipment (**Goode 1887**:343).

In the 1870s, the Cape Cod Oil Works was built on Long Point, and in 1886 Nickerson's Whale and Menhaden Oil Works was built at Herring Cove, near Race Point Light (Figure 45). Using whales, blackfish, menhaden, and dogfish, the plants manufactured fish oils and fertilizer. In its heyday, Nickerson's plant employed 25 to 30 persons, and was a tourist attraction (**Ruckstuhl 1987**:80). However, its days of productivity were short-lived. By 1908, the sea had encroached on the few remains of the Nickerson plant at Herring Cove; within a few years, "no vestige of either" remained (**Hatch 1951**:76; **MHC 1984d**:18; **Millet 1922**:47; **Ruckstuhl 1987**:80).

Massachusetts census data on fish oil are difficult to compare, since various omissions, such as measures of quantity, leave gaps in the statistics. One is not always sure whether one has been given the actual number of fish in a catch, the number of pounds, the number of barrels of fish, or the number of gallons of oil. Census records further

complicate interpretation by using "porgy" for menhaden in some tables. Massachusetts census data for the Lower Cape do not include the menhaden catch until 1865, when Chatham brought in 2,500 worth $2,500; no other town reported a menhaden catch (**Commonwealth of Massachusetts 1868**). In 1875, Chatham brought in 400,000 (type of quantity unlisted) worth $2,000, and Provincetown had 8,666 barrels at $2,600. Eastham is listed as producing 300 gallons of oil; Orleans, Wellfleet, and Truro had none (**Commonwealth of Massachusetts 1877**). Up until 1879, menhaden were found all along the eastern United States seaboard; they generally appeared at Cape Cod from April through November. After 1879, few appeared north of the Cape, causing problems for local entrepreneurs who had relied on the species for processed oil, as well as bait for the mackerel, cod, and halibut fisheries. Both menhaden and menhaden oil yields declined on the Lower Cape. In 1885, Chatham produced 2,303 (measure of quantity not listed) for $69, and Provincetown had 600 gallons of oil for $120. Orleans, Eastham, Wellfleet, and Truro had none (**Commonwealth of Massachusetts 1888**). The 1895 census shows Wellfleet with five barrels for $5, Truro with six barrels for $18, and Provincetown had 1,105 barrels for $1,308. Chatham, Orleans, and Eastham have none recorded (**Commonwealth of Massachusetts 1899b**). In 1905 Chatham had 125 barrels of porgy valued at $250, Orleans had five barrels for $5, Truro had 50 barrels of menhaden worth $120, and Provincetown brought in 5,108 barrels worth $5,108. Eastham and Wellfleet had none (**Commonwealth of Massachusetts 1909b**). The 1915 census does not list menhaden as either catch or oil (**Commonwealth of Massachusetts 1918**).

Fish Fertilizer. Fish that were not valued for food or oil, such as dogfish (sand sharks), could be converted into fertilizer. Eastham was the only town that had a dogfish catch in 1915: 500 pounds valued at $12. No Lower Cape town had caught these sharks in 1905 (**Commonwealth of Massachusetts 1918**). During World War I, a government-sponsored project led to the construction of a factory for converting dogfish into fertilizer. The processing plant also used unsalable fish, such as menhaden, or edible fish that were unmarketable. It was located next to the railroad at Beach Point in Truro, near the Provincetown line. An overhead tramway was built over Route 6A and into the bay. Fish were unloaded from boats into the tramway, in which they were carried over the road and into the factory. This venture was not successful, and within a few years the building and tramway were demolished (**Marshall 1974**:199).

Whale Oil. The late nineteenth century saw the demise of the whale oil industry on the Lower Cape. Provincetown was the only significant producer of whale oil on the Lower Cape in this period (Table 43). In 1885, Provincetown produced $50,446 worth of whale oil, Chatham only $1,730, Orleans $28, and Eastham $43. By 1895 Provincetown was the only town that continued its production. The 1915 census does not even list whale and sperm oil as a category (**Commonwealth of Massachusetts 1888, 1899b, 1909b, 1918**).

Blackfish Oil. The finest lubricating oil was refined from oil in the head and jaw of blackfish. This oil was subjected to intense cold and congealed, resulting in a substance that resembled lard. From this was pressed a small amount of oil that would not chill. This oil had a variety of uses, including lubrication for watches, and lighthouse and battleship bearings, and sold for $4 to $8 a gallon. In 1875, Provincetown processed 45,514 gallons of blackfish oil valued at $26,745 (**Commonwealth of Massachusetts 1877**; **Lowe 1968**:31; **MHC 1984f**:16; **Nordhoff 1970**:54). There are anecdotal reports of beached blackfish being used for oil as late as the 1930s.

Sailmaking. At the start of this period, only 11 sail lofts operated on the Lower Cape. Provincetown and Wellfleet were almost able to keep the level of business they had previously enjoyed, but Chatham's business decreased at a time when its fleet was expanding. Truro no longer had any shops in town (Table 44).

With the decline in sailing ships, the manufacture of sails dwindled. Kittredge romanticized and bemoaned the passing of the sea-going era on the Cape, saying that the industries associated with the sea should be:

> taken more seriously than the factories, for there is propriety in them. A Cape-Codder who makes cloth for print dresses is a misguided victim of an age of contagious energy. He is a temporary figure, and will disappear when the pace drops back to normal. But a Cape-Codder who makes sails and blocks, or who pounds oakum into the seams of fishing schooners, is a proper picture for his setting; he may go on as long as schooners continue to sail, and the world will not tire of watching him and praising his wisdom (**Kittredge 1987**:146).

Clothing. Some residents of the Lower Cape did what Kittredge disdained. An Orleans factory made shirts, pants, and overalls starting in 1873; within two years it produced $42,000 worth of goods, or 85 percent of the town's total manufactured product (**MHC 1984c**). By the turn of the century, the factory discontinued the manufacture of shirts and overalls and produced only pants, employing from 125 to 200 persons. The pants were marketed throughout the

United States at least through the 1890s (**Barnard 1975**:115; **Stott 1987**:305). Photographs of this factory and its workers can be found in Quinn (1993:89).

Orleans has been categorized as a "manufacturing" town in 1895 (**Wilkie and Tager 1991**:36). Data from the state census for 1895, however, do not support this characterization (**Commonwealth of Massachusetts 1898**). In Wellfleet, in 1889, a pants factory operated out of the space left vacant by the town-subsidized shoe business that had proved unsuccessful in 1887 (**MHC 1984f**:16).

The Puritan Shirt Factory operated in Provincetown (**Deyo 1890**:973). It was established in the 1880s by the Leominster Shirt Company. There were one hundred and fifty workers, and it was, in the words of the railroad's promotional book, "a great factor in the financial interest of the town," and "an object of attraction to visitors" (**Old Colony Railroad 1893**:403-405). It continued making clothing into the twentieth century. After operations ceased, the building was 'flaked' or cut into sections, moved to its present location in North Truro, and reassembled (**Marshall 1974**:34).

Early Modern Period (1915-1940) and After

A picture of the industries of Cape Cod in general is revealed in this comment about the Cape Cod Railroad:

> One might say, and say truthfully, that the building of a railroad down on Cape Cod, where the principal traffic today is summer tourists and cranberries, was a waste of good money. While the author recognizes the justice of the criticism he wishes the critic to remember that the Cape Cod of say 1850 to 1860 was a different Cape Cod of 1918 [*sic*]. In addition to the shipping, which was an important industry, there were other small industries as well. The means of communication by either ships or stage were a poor substitute for the railroad... (**Fisher 1919**:35).

This quotation tells us three things. First, that there were shipping and "small industries" in the earlier period, according to the author quoted, although his immediate references were to Barnstable, Yarmouthport, and Hyannis rather than the Lower Cape. Second, even though tourism was already popular, it was dismissed by the author as unworthy of improved transportation systems. Finally, it assessed the industrial activity of the Cape after World War I as being insignificant.

At the end of the war there was a recession, but the 1930s were even more difficult economically. Manufacturing suffered greatly throughout Massachusetts. On the Lower Cape, no new enterprises were begun; only fish processing continued in this period.

Freezing Fish. By 1922 there were seven fish freezers in Provincetown that stored herring, whiting, squid, and mackerel. With the introduction of a quick-freezing method by Clarence Birdseye in 1923, the market was further expanded, thereby causing increased incidence of overharvesting and a subsequent decline in production. Some 20 million pounds of fish were caught in 1935 by nets staked off Cape Cod (**Stott 1987**:274). By 1942, only three cold storage plants were operating in Provincetown (**Vorse 1990**:246).

A new block-freezing method was invented and proved more useful than previous ones. This method was improved upon by the Atlantic Coast Fisheries of Provincetown. With this new process, this company purchased most of the stock in the region's freezer companies. It also bought weirs, and by 1942 Atlantic Coast Fisheries owned 40 of the 50 to 60 weirs from Billingsgate to Race Point, and nine of the 13 trap boats that serviced the weirs (**Vorse 1990**:247).

Another advance in the freezing industry came with filleting. Fillets were originally distributed fresh, but freezing became more popular by 1941 (**Ackerman 1941**:227).

Minor Economic Activities. Other than fish processing, there were craft production for the tourist market and some minor enterprises. Cape Verdeans in Truro bought and sold mayflowers or trailing arbutus (*Epigaea repens*) for shipment to the Boston market in April and May (**Marshall 1974**:41). A candle factory was located at the rear of the No. 2 pickled mackerel fish building on the beach at North Truro (**Marshall 1974**:198). Another was located in Wellfleet. Each made wax from locally available bayberries. It took 7 to 10 pounds of the tiny aromatic fruits to make one pound of wax (**Vorse 1990**:298), and tons of bayberries were purchased each year for the operations. All of these activities, like many of the other attempts at manufacturing, were relatively insignificant, but they do illustrate the range of industries that Lower Cape residents tried to establish.

Archeological Implications

Saltworks

Saltworks and associated sheds were common on the Cape from the 1770s to the 1855. Saltworks were located near a source of salt water, especially near the coast in coves (Figures 57). They were situated in relatively level, open areas, well exposed to the sun. Many farms had at least one. Saltwork complexes consisted of long wooden vats, some as large as 250 by 18 feet, covered with wooden or canvas superstructures or roofs (called doors) on movable rollers. The vats were nailed together; wood was imported from as far away as Maine. Supporting structures were post-in-ground. Saltworks were easily moved and construction materials were reused.

In the earliest saltworks, water was carried to the evaporating vats where it was boiled. Later, as technology improved, windmills were used to supply water. Some windmills were bolted to the vats themselves. Windmills may have been located at the edge of the water source or in it. A pipe (probably wooden) would have connected the windmill to the vats.

Saltworks are difficult to detect archeologically because of their portability and the reuse of construction materials. Following the decline of the saltmaking industry, wood and other materials were used for building barns, sheds, or houses.

Archeological Record and Considerations. Saltworks are low-visibility, low-density sites.

They are best detected archeologically through large horizontal excavations. This may be the only effective strategy to identify them.

Saltworks remains should be located near a reliable source of saltwater on level terrain.

Chemical soil tests may be useful to detect salt, Glauber salt, and Epsom salts.

A boiling area with hearth and charcoal should be detectable for early saltworks.

There is a possibility of good wood preservation in soil from salt.

Posts used to support the vats and windmills may be detectable as post molds.

There should be evidence of post-in-ground windmills and wooden piping.

Wooden piping laid in the ground would be archeologically detectable even if the piping had been removed for reuse. Pipe trenches would be visible in soil profiles.

Increased salinization of the soil may be visible on the surface as an increase in halaphytic plants.

Artifacts may consist of nails with no glass or domestic debris.

As a result of spills and leaks, the salt concentration in the soil should be greater in the immediate vicinity of the drying vats than in the surrounding area. This should be detectable in soil tests.

Features related to storage sheds may contain high concentrations of salt.

Research Questions. Regarding construction, does the technology of early works evident in the archeological record appear to be derived from British models?

How did technology develop over the 70-year period (e.g., use of windmills to increase production)?

How were vats caulked and made watertight?

Were natural hydrologic features modified to increase production of salt, especially during the 1830s when salt production was at its peak?

What was the response in the saltmaking industry to the loss of vegetation for construction materials?

On farms, was there appreciable salinization of agricultural soils? Did this have an effect on agricultural production?

What was the source of wood for vats? Is the shipping of logs from Maine an indication of environmental degradations?

Is there evidence of in-ground vats (large shallow pools with earthen balks), as used in Europe?

Infrastructure. The remains of a saltmaking complex would consist of vats, sheds, piping, and windmills. Saltworks should be found in coastal areas on access roads connecting with public roads to ports for shipping. Storage facilities would have included small, impermanent, wood-frame sheds resting directly on the ground, to protect the processed salt from rain and wind.

Special Research Requirements. Federal records of the 1798 Direct Tax may be very useful in defining manufacturers' holdings. Assessors may have evaluated saltmaking structures. Probate listings of property holdings, tax, and census records should be researched for more detailed evidence. Some of these records may reveal evidence of equipment. Even though probate records burned in Barnstable in the nineteenth century, there are scattered private holdings in existence. Ledgers and account books are potentially available in historical societies and local/regional museums (e.g., the Worcester Antiquarian Society, etc.). Detailed Federal maps show the location of saltworks (e.g., U.S. Bureau of Topographical Engineers 1836).

Windmills

Any promontory would have been a very suitable location for a windmill. The mill yard would have been leveled and landscaped to facilitate operation of the mill. They may have been set on stone footings to keep their sills from rotting. As with saltworks, windmills were portable and often moved.

Grist mills using a pole and wheel would have left evidence of soil compaction in a circle surrounding the mill. Windmills used for wells were often supported by wood or metal posts and mounted on sheds. The associated well or cistern was made of brick or wood. Small sheds covered the wells, and wooden pipes led to areas of storage and use. Water was pumped to houses, especially guest houses and other establishments that could afford the cost, which was greater than using hand pumps.

Archeological Record and Considerations. Windmills, especially those used to draw water, will be very difficult

to detect archeologically. Even grist mills would produce very few artifacts. Mills were portable and easily reused elsewhere, and so were rarely left to rot in place. Sites are ephemeral, with much mobility and thin artifact patterns. Thus, the sites have a low visibility.

Millyards for the larger mills were artificially levelled and landscaped to facilitate operation. Such sites were excellent locations for later reuse, especially as tourism increased.

Based on European windmills, early mills consisted of a structure in which the whole mill turns on a large wooden pivot below ground.

Based on European windmills, early mills consisted of a structure in which the whole mill turns on a large wooden pivot below ground. Evidence may exist of a large buried post and stabilizing cross posts. With the later large mills, only the top part of the structure turns, so below-ground remains would be minimal.

The larger mills would have insubstantial stone base foundations.

Circular ground-wear patterns from turning mechanisms of large mills would be evident, as at Chatham. Sites may be detectable as visible surface features. Ground wear, if not visible, should be detectable by testing compaction of soils.

There will be few artifacts and little or no domestic refuse. There will be little architectural debris because of portability and reuse elsewhere.

Archeological methods should include horizontal stripping of large areas, or perpendicular trenching to intercept wear patterns.

Rooftop windmills will be especially difficult to detect archeologically. Locational efforts should focus on cisterns, piping, and other parts of the system.

Research Questions. What is the nature of technological change through time?

Were different types of large windmills used through time?

Does technology reflect European tradition or adaptation to local conditions?

Was there a difference between privately and publicly owned windmills in terms of size and structure?

Did publicly owned mills reflect more capital investment than private mills?

Can the transience of windmills be understood? How often were they moved and for what reasons?

What was ultimate disposition of windmills? Did they rot away, or were they dismantled for reuse?

Infrastructure. Mills were located in open areas, but required road access for transportation.

Special Research Requirements. Primary documentary research should include town records. Windmills were controled and regulated by the towns. Tax records should be useful for privately owned mills. Historic maps show many locations of windmills and industrial sites. Place names offer clues, such as the various hills named "Mill Hill" throughout the Cape and Islands.

Tidal Mills

Tidal mills generally are located on tidal inlets/outlets. Sparrows Pond in South Orleans was a grist mill for grinding corn. In the 1970s the site of a tidal mill with stone foundations was reported. Other features included a stone-lined mill race, possibly with wood siding, leading to the mill site. Technology had to be able to reverse the wheel to take advantage of the alternating tidal flow. This is a major difference from conventional hydro-mill technology. Tidal mills often had a dam with gates to control the impoundment of tidal water at high tide.

Archeological Record and Considerations. Remains could include dams, stone raceways, buried wood linings, wheel structures, etc.

Oil Processing

Rendering of fish oils was a common industrial activity on the Cape through the historic period. Oil-rendering facilities were very common in the early years, and were often part of residential complexes. Later the activity become more industrialized, with only a little of the product being consumed locally. Some oil rendering (especially cod liver) was done aboard ship, but with the increase in demand, by the 1840s rendering was done in land-based kettles in oil rendering complexes. During the eighteenth centuries, try-works were located on most wharves. Several types of oil were produced. The most common type was whale oil. Dogfish liver oil was used in tanning industry and for ropemaking. Blackfish oil was extracted and then subjected to intense cold and pressing to a consistency of lard. Cold was applied through ice or ammonia refrigeration systems, powered by coal, gas, or electric power (by the mid-1890s). Menhaden also were processed. The oil was used for naval bearings.

Archeological Research. Oil-processing complexes included large burned areas, especially in try-yards. Oil spills and burned spoil from vats and kettles left black, caked layers in the soil. These strata are especially visible in sand dunes.

Chemical or phosphate testing should locate organics if oil layers are obscured below the surface.

Chemical testing should be employed to detect mercury concentrations related to fish.

Brick pavements related to wharf hearths may be detectable archeologically, but given the scarcity of bricks, these materials were undoubtedly reused. Large areas of fire-reddened soil would be evident in terrestrial sites.

Complexes included low-visibility, simple frame buildings with simple or no foundations.

Early try-yards were a part of privately owned residential complexes. There should be evidence of oily, burned areas in early farmsteads, especially in isolated areas away from residential structures.

Historic descriptions include the use of iron kettles resting on brick foundations.

Research Questions. How did oil-rendering facilities change in size and in the elaborateness of processing relative to national and regional markets?

Is there evidence of local, communal whale hunting and processing that gradually gave way to non-local, individualized efforts (e.g., **Yentsch 1988**)? Is there evidence of fewer but larger processing areas as specialization increased?

Is there evidence of cold storage facilities used in blackfish-oil processing? Can this be distinguished archeologically? When did this process begin?

In farmsteads, what is the evidence of separate oil-rendering activity areas? Oil rendering was a part of households in the seventeenth to eighteenth century.

What was used for fuel? Did fuel change through time as wood became scarce?

What was the impact of vegetational denudation on the oil-rendering industry?

What was the nature of a try-house and try-yard? Structures are predicted to have been insubstantial.

Was trying accomplished under cover or in buildings?

Was most oil consumed locally, or was there an outside market for it?

Infrastructure. Infrastructure would have included outbuildings for equipment and kettle storage, try-houses, and try-works. The transportation system would have been market-related, using roads to access ports. Many try-works were located on the coast for direct access to shipping.

Specialized Research. Considerable information should be found in account books and in probate records. Census records may provide information concerning production yields by town.

Fish Salting and Drying

Prior to the introduction of canning and freezing methods of fish storage, fish were split, salted, and sun-dried on wooden "flakes" or racks. Flakes were ephemeral and portable. Sites were subjected to increased salt content. Much of the work was accomplished on wharves and around houses.

Archeological Record and Considerations. Salt-drying complexes are difficult to detect archeologically because of their portability and ephemeral nature.

Structures consisted of simple wooden frame table- or shelf-like racks, and would have left little archeological evidence.

There may be an increase in salt in the soil, but this may be difficult to distinguish from other activities using salt (e.g., salt production).

Depending upon soil acidity and other conditions, there may be a high density of fish remains in the soil such as scales.

If flakes were used repeatedly, there may be compacted/trampled soils around their locations.

Artifacts may consist of broken knives and barrel staves and hoops, with no domestic or architectural debris in wharf areas.

If drying was done at the household level, artifacts may be mixed with domestic debris and difficult to separate from other activities.

Research Questions. When did fish-drying end at the household level?

What fish species were used for drying? Did species change over time?

Did fish-drying persist in lower-income households? Did poor households continue to practice fish-drying for household consumption after it was discontinued as a major industry?

Was fish-drying continued by immigrant people after being discontinued as a major industry on the Cape?

Can fish-drying be linked to cultural preference (e.g., Finnish people's heavy use of salt-dried fish).

Specialized Research. Faunal analysis would be necessary to identify species if preserved. Abundant local records concerning fish-drying, especially at the household level, are unlikely. Tax and census data, gazetteers, and legislative reports may contain information concerning production and shipping.

Fish Canning

Canned fish were produced for export in national, international, and regional markets, and were probably not used locally. This industry displaced the fish-drying industry Cape-wide. Canning of fish was very common by the 1880s nationwide.

Archeological Record and Considerations. Canning was done in factories, not at the household level.

Canning was not a major activity on Cape.

Lead used in soldering tins may be evident in soils. Lead may be found in high concentrations in adjacent water where offal and debris were discarded.

Mercury concentrations may exist in the soil.

Artifacts would consist of dumps of cans and tins, broken knives, solder concentrations, coal, and clinker from boilers. Faunal material should be abundant if conditions permit.

Research Questions. Do canned fish appear in local residential refuse?

Is there a mercury concentration in the soil?

Was there an increase in production during wartime (e.g., the Civil War) to feed the military?

Were tins produced in the site, or imported complete?

Specialized Research. Company records and account books may exist. Shipping manifests may supply information on production and markets. Maritime and industrial records may not be readily available for domestic shipping. Census records may be useful to pin down when canning was done.

Fish-Freezing Plants

Large factory-like complexes had a coal-fired boiler, and were located on a rail spur connecting with shipping ports. In the later nineteenth century, freezing plants were connected with the Old Colony Railroad.

Archeological Record and Considerations. Rail spurs and other railroad materials should be evident. Rail spurs connected with ports and wharves.

Plants were located along the coast.

A large volume of coal was used to provide energy and to run ammonia freezers.

Is ammonia detectable archeologically?

Freezing facilities were multiple-structure complexes having a large, mill-like structure and numerous special-purpose sheds and buildings.

Buildings were constructed on piers or stilts and located near water to discard offal.

Research Questions. How did the advent of freezing technology transform the fishing industry?

Did the industry become centralized because of storage? Was there less local control? Tranformation would be archeologically marked by fewer wharves, plants for processing, less fish processing at the household level. Did it cause a decline in fish drying?

Were there ice houses directly related to fish preservation?

To what extent did fish freezing displace ice houses as a preservation method?

Specialized Research. Census schedules, company records, and account books will be useful in understanding production. Also useful are reports to the state legislature concerning the fishing industry.

Cottage Industries

Cottage industries such as those producing oil cloth, sails, block and tackle, and shoes may be difficult to observe archeologically because of their small and ephemeral nature, and their combination with other functions (e.g., residential and other commercial enterprises).

Oil Clothiers. Cloth was painted with linseed oil and hung to dry in the outfitters' lofts. Businesses were predominantly located in commercial or residential centers.

There should be over-representation of oiled cloth fragments in middens.

Sailmaking. Sailmakers' shops existed in in lofts or open-floored buildings. Businesses were predominantly located in commercial or residential centers.

Evidence in archeological record would include fragments of cloth, rope, fasteners, sewing materials, and tools.

Block-and-Tackle. Businesses were combined with woodworking shops and may be hard to distinguish archeologically. Shops were located in towns.

Sites should be marked by large concentrations of wood fragments and shavings.

Shoemaking. Businesses were probably located in commercial areas.

They were surrounded by large concentrations of leather discards, forms, shoenails, eyes, needles, etc.

Research Questions. Were cottage industries associated with other forms of craft, or were they situated in residential settings?

Were cottage industries a seasonal endeavor?

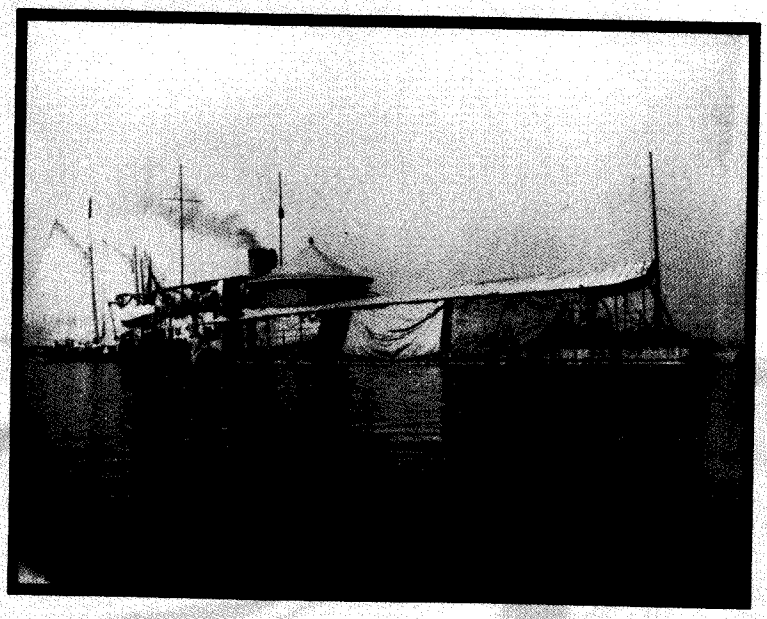
Chapter VI

MILITARY AFFAIRS

A Note on Sources

Chronology

Archeological Implications



Military activity on the Lower Cape has not been as intensive or extensive as in other parts of New England. An isolated region, it was difficult to defend and was vulnerable to blockades. Abandonment or accommodation to an enemy with naval power has been the pattern on the Lower Cape. Provincetown's harbor, the position of the Cape as an arm protecting Boston, and its expanses of open land and sea suitable for military practice have all played a role in the history of the region (Figure 62).

Although contemporary trends in the study of military history place greater emphasis on the social setting of warfare, such an approach is difficult to apply on the local level. Furthermore, the impact of military activity on the Lower Cape has been concentrated in short bursts followed by quiet interludes; this has led to a focus on periods of conflict (such as the British actions in Orleans) or construction (such as Camp Wellfleet).

A Note on Sources

Town histories provide some information on military activity, although there is an understandable focus on a town's contribution to fighting the country's battles far from the Lower Cape. Historical sources on warfare and military affairs in the Colonial Period are meager and filled with errors. F. Freeman's history of Cape Cod (1965 [1858, 1865]) and Rich's history of Truro (1988 [1883]) are examples of these problems. Other historians simply did not cover the military. Echeverria's history of Wellfleet (1991) concentrates on grants of land, damage to ecological resources, and social history from settlement in the seventeenth century up to the American Revolution. Lowe's history of Eastham (1968) is concerned only with assuring that those who fought in the wars were recognized. None of the general works on the Colonial wars, the American Revolution, or the War of 1812 specifically address the Cape, particularly those towns below the elbow.

Although the Civil War is the most-frequently discussed topic in American history, there is scant mention of the Cape in standard works. Local histories have little to contribute beyond information on the veterans who served elsewhere in the war. Gazetteers such as **Nason** (1874, 1890) are also of limited use. Among primary sources worth investigating are reports to the state legislature on coastal defenses. The 1865 Senate Report 230 is particularly informative; other reports of interest are 1854 S 5 (which summarizes legislation to protect Provincetown Harbor); 1866 H 395 and 1867 H 62 (on coastal defenses of the Cape); 1862 S 177, 1862 S 191, 1862 H 53, 1863 H 157, and 1863 H 159 (all on coastal defenses of the state). National Archives Record Groups relevant to the Lower Cape will be discussed subsequently.

Military history after the Civil War rarely focuses on the Cape. Newspaper clippings and recent town histories can give some information. Many official documents are obtainable, but they often cover routine matters. Maps of installations can reveal archeological potential of areas such as the Cape Cod NS Headquarters, formerly part of Camp Wellfleet. Department of Defense historians were helpful in finding further material on Camp Wellfleet, the North Truro Air Force Station, the Air Force radio towers, and naval action off the Cape, but this material is limited in scope. Oral histories of service personnel and neighbors of the facilities hold promise for filling out the picture of military affairs on the Lower Cape.

Chronology

Contact, Settlement, and Colonial Periods (Before 1620-1775)

One unfortunate aspect of the Contact Period on the Lower Cape was that the first encounter between the Pilgrims and Native Americans was hostile. It is highly unlikely that archeological remains will supplement the historical accounts of the incident.

Although removed from military action and safe from the devastation seen in other parts of New England, residents of the Lower Cape shared worries about attacks during King Philip's War (1675-1676). Intense fighting took place in southeastern Massachusetts, but the Cape itself was calm because the local Native Americans were generally not disposed to join the resistance. Eastham, the only established town at that time, had a military quota to fill as a part of Plymouth County (**Freeman 1965**:II:367 [1862]; **Lowe 1968**:88).

During the seventeenth century, France was not the only potential enemy of the English on Cape Cod. Although they traded with each other and shared a Protestant religion, the Dutch and English fought three wars: the First Anglo-Dutch War (1652-1654), the Second Anglo-Dutch War (1664-1667), and the Third Anglo-Dutch War (1672-1674) (**Boxer 1974**). Most of these conflicts did not directly touch the Cape. During the First Anglo-Dutch War, the Court of Plymouth County in 1653 ordered that "the townesmen of every towne within this government shall make and fully finnish a place or places for defence of theire said towne one or more as reason shall require videlecet, a brest worke with flankers unto every such work as shalbee made" (**Brigham 1836**:97 [1653]). A fort may have been built at this time at Fort Hill in Eastham, although this has not been documented by the historical or archeological record.

Colonial Wars. According to Rich, the conflicts of the Colonial Period led many Truro residents to move from this exposed area (**Rich 1988**:275 [1883]). When Provincetown was incorporated in 1727, the residents were

relieved of taxation and military duties, perhaps because of the isolation of the settlement. Abandonment of the town may have been a preferred military option for Provincetown: "During the Colonial Wars, then at the time of the Revolutionary War, and again during the War of 1812, most of the settlers fled, returning on the declaration of peace" (**N. Smith 1922**:29).

Early in the French and Indian War (1754-1763), Truro appointed a committee to consult with Provincetown regarding the building of a battery there, but it is not clear if any fortifications were built; primary research in the records of these towns would be helpful in answering this question. Truro did vote that in case of an alarm, sufficient guns and ammunition should be brought to the meetinghouse each Sunday (**Rich 1988**:273 [1883]).

Federal Period (1775-1830)

The American Revolution. As was the case in many parts of the colonies, some Lower Cape residents supported independence, others supported continuing ties to England, and still others were neutral, undecided, or apathetic. Parts of the Cape were under the influence of Tories such as the prominent Oliver family. On the other hand, Chatham was an early supporter of independence, appointing its first Committee of Correspondence in December 1772; Eastham responded to Boston's circular letter in February 1773; and in 1774, Truro reported to the Boston Committee of Correspondence that no ship from that town would assist in carrying taxed tea, even though several vessels were unemployed. The Patriots' sentiments did not go unchallenged by Loyalists in Truro (**Freeman 1965**:II:399, 561, 603 [1862]; **Kittredge 1987**:120; **W. Smith 1981**:341). In 1775, a Truro town committee was named "to direct the watch," and "a petition was forwarded to headquarters for 12 cannon and 500 men to be stationed near Provincetown." The request for 12 cannon was later changed to three field pieces (**Freeman 1965**:II:564 [1862]). Secondary sources do not describe or locate any fortifications dating to the American Revolution.

Requests from the Cape residents to the General Court for defensive aid were refused in 1775, but in January 1776, the Court relented and ordered a company of troops to be stationed at Truro and 600 weight of cannon balls to be stored there. Truro requested more artillery from the Board of War, but the reply was that Truro and the adjoining towns should raise a local company for protection. This advice was helpful during a near-conflict at Pond Village, when British barges approached for a landing, but were turned back by a show of force by the local militia (**Rich 1988**:280-281 [1883]).

Faced with an unfavorable position for defending themselves from naval assaults, the residents of Truro in 1776 chose a committee "to discourse with the men of war, should they come with a flag of truce, to know what their requests are, and to do what they shall think best for the town and Province." This practice may have continued throughout the war, as in 1782 a committee was named "to go on board the enemy's ships in Cape Cod Harbor, if necessity shall arise" (**Freeman 1965**:II:565, 568 [1862]).

The standard secondary sources are nearly consistent in reporting that Provincetown was virtually indefensible against British attack. Freeman, for example, reported that during the American Revolution Provincetown "remained in a state of great depression" because it had "no means of defence...and the government being unable to protect it, it was almost entirely in the power of the enemy, who did not hesitate to make exactions for supplies whenever they needed." Rich added that "During the war it was in the hands of the enemy; when the war closed, every family had again vanished" (**Freeman 1965**:II:617-618 [1862]; **Hatch 1951**:29; **Rich 1988**:108 [1883]). Race Point was even supposedly a British naval station (**Rockmore 1979**).

Kittredge reported that neither Provincetown nor Truro were attacked because "no attack was necessary. So completely defenseless were the shores, and so inadequate was Truro's home guard, that the Britishers were free to go ashore as they pleased and help themselves to fresh water and provisions" (**Kittredge 1987**:121-122). This statement is somewhat misleading. British officers did go ashore frequently to take items of lesser value, such as water, but they also purchased with gold perishable supplies such as milk and eggs brought to them by the local residents (**Rich 1988**:357 [1883]). **Kendall** (1809) reported that "the few inhabitants then in the harbor profited greatly."

British officers did go ashore frequently to take items of lesser value, such as water, but they also purchased with gold perishable supplies such as milk and eggs brought to them by the local residents.

The British man-of-war HMS *Somerset*, which in 1775 had bombarded Bunker Hill to cover the landing of British troops in Charlestown, was stranded "north of the Clay Pounds...near the present Peaked Hill Bars coast guard station" on November 8, 1778 (**Gibson 1992**). Its 480 men were taken prisoner and marched to Boston, and the vessel was looted. General Joseph Otis said after the wreck of the *Somerset*: "From all I can learn, there is wicked work at the wreck, riotous doings. The Truro and Provincetown men made a division of the clothing, etc. Truro took two thirds and Provincetown one third. There is a plundering gang that way" (**Hatch 1951**:27; **Rich 1988**:283 [1883]).

Looting wrecked vessels like the *Somerset* was not only a profitable economic activity, but also one that took on military significance. On January 9, 1779, the General Court directed that the *Somerset's* cannon were to be reserved for the State. According to Rich, "The old ship now [1883] lies buried in the sand not far from the Peaked Hills, sound as ever. I have been informed by Captain Henry Cook of Provincetown, that a few years ago the sand blew out, leaving her hull much exposed; that several cart-loads were cut

away from the wreck" (**Hatch 1951**:29; **Rich 1988**:283 [1883]). Other vessels were looted during the course of the conflict. Just before independence was declared, a Boston merchant of Tory persuasion decided to sail with his family and possessions to Halifax. His chartered ship, the *Sally*, ran aground on the Peaked Hill Bars at Provincetown. When the local residents learned of the helpless ship, the selectmen notified the General Court and asked what should be done with the company on board. While awaiting the answer, locals looted the *Sally* (**Kittredge 1987**:131). The British transport *Friendship* was wrecked at Truro during the winter of 1776, and it provided the Patriot army with supplies and ammunition (**Kittredge 1987**:129-130). When the brig *Wilkes* was cast ashore at Eastham in 1777, however, the looting of that wreck by "unprincipled adventurers" brought condemnation by the town meeting (**Freeman 1965**:II:400 [1862]).

Although naval operations off shore, forays on land by the British, and looting of shipwrecks all took place on the Cape, it is unlikely that these types of activities would have left any physical traces. Collections of artifacts in local historical societies may contain material relating to them. Over the years, thousands of vessels large and small have run aground or have been wrecked on the shores of Cape Cod; an early law ordered that any shipwreck or cargo found on the beach was to be reported to the town clerk, who was supposed to protect it for the owners. According to Lowe, however, "many a Cape home contains lumber and metal taken from vessels which have been pounded to pieces on those shores" (**Lowe 1968**:107).

The War of 1812. The New England states were adamantly opposed to the trade embargo established by the Embargo Act of 1807 and limited in scope to Britain and France by the Non-Intercourse Act of 1809. Trade continued with Canada in spite of the laws, often under foreign flags. Shipments of food from Massachusetts reached the Maritime Provinces of Canada under Spanish and Swedish colors. British merchants skirted the war by getting neutral papers from Swedish officials at St. Barthelemy in the Caribbean (**Hickey 1989**:168-169)

There was, however, a greater economic impact to the Lower Cape once war broke out. British forces were a continuing presence in the waters off the Cape. This presented both dangers and opportunities for Lower Cape towns and their residents, and they responded in a variety of ways. Generally, the sentiment on the Cape was against the war and against the government. In Chatham, the 1812 town meeting opposed the war with Great Britain and wanted no part of an alliance with France; they appointed a committee to write to President Madison relating their opinion (**Freeman 1965**:II:607 [1862]).

Orleans seems to have been an exception to the rule. Its townspeople were "zealously supporters of the national government in its measures, notwithstanding the enemy's ships and their rendezvous in Provincetown Harbor and by their tenders or barges were constantly cruising the bay" (**Freeman 1965**:II:728 [1862]). The town appointed a committee of safety and posted sentinels on the shores. It also asked for aid from the state government in establishing an artillery company, but this request was denied. Trenches were dug on the west shore in case of enemy attack; Barnard states that "faint remnants" can be seen on the marsh (**Barnard 1975**:65). Field checking these sites may find landscape features or artifacts related to these fortifications.

In September 1814, the British demanded money from the inhabitants of Orleans in exchange for not destroying the town's saltworks, but the town refused. On December 19, 1814, attempts were made by the enemy to land at Rock Harbor, but these were repulsed by the town. Barnard reported that "Shells flew over and into the town. One shell, about 80 pounds in weight, lodged in the wall of a house...where it lay until the old house was razed." Another shell reached the property of Asa Hopkins on Tonset Road. This encounter came to be called the Battle of Orleans, and has been duly recorded via a town monument (**Barnard 1975**:66; **Quinn 1993**:47, 208).

Richard K. Murdoch has researched this episode due to its prominence in local histories. Since national histories and detailed accounts of the war do not usually include this "battle," Murdoch thinks that this "tends to support the view that local pride combined with a desire to relieve the rather gloomy story of the war, may have resulted in some exaggeration of the importance of the events at Orleans." Murdoch checks contemporary accounts in newspapers along the eastern seaboard from Boston to Savannah. According to these accounts, the purpose of the attack was to burn the village and local vessels, but there was wide variation in the details. Local historians later used the "popular reminiscences" of town residents and Boston newspaper accounts for their town histories (**Murdoch 1964**:172-173). Murdoch, however, consults an original source, the official log of the *Newcastle*, which is on file at the Manuscript Division of the Public Record Office in London. The captain's log detailed the circumstances surrounding the "battle," which began on December 12, 1814, with the grounding of the *Newcastle* on the southern tip of Billingsgate Shoal. With the information found in the log, Murdoch refutes Rich's claim that guns and other ordnance were thrown overboard, or that the captain considered blowing up the ship to prevent its capture; he also finds "groundless" the stories about Orleans being shelled (**Murdoch 1964**:175, 179). He concludes that "By no stretch of the imagination can the 'Battle of Orleans'...be assigned a vital role in the prosecution of the War of 1812." In 1855 an act

of Congress authorized payment of bounties to the survivors of the battle, or to their widows or children if they were still living. Warrants for 160 acres of public lands were to be issued to each (**Murdoch 1964**:181-182). Further research in this area may be of interest.

Like Orleans, Eastham was threatened with burning and general destruction, which could be avoided by satisfying conditions set by the British (**Freeman 1965**:II:407 [1862]). In this case, however, no battle resulted; presumably the conditions were met, or a negotiated settlement was reached.

At the outbreak of the War of 1812, Wellfleet petitioned the legislature to allow residents to serve the war effort in defense of their own and surrounding towns. In 1814 a committee of safety was appointed to keep watch on British vessels cruising Barnstable Harbor. This committee was empowered to board these vessels with a flag of truce and negotiate a settlement with the enemy. All correspondence exchanged was to be retained for review by the town if requested, and "In all cases and at all times they shall so conduct as to keep in as much friendship with the said enemy as possible" (**Freeman 1965**:II:681-682) [1862].

According to local tradition, the British warship *Newcastle* captured several schooners and sloops, but it then ran aground "on the shoal ground abreast South Truro" (**Rich 1988**:358 [1883]). The British ordered a captain from one of the captured vessels to navigate for them in one of the seized ships. This captain did so, but he purposely ran this vessel aground at Yarmouth, where the British surrendered to the Americans (**Blake 1964**:42; **Freeman 1965**:II:728-729 [1862]). After the British abandoned the *Newcastle*, a big cable and an anchor were salvaged by men from Truro and Wellfleet, but the guns were lost in the sea (**Rich 1988**:358 [1883]).

The British man-of-war *Majestic* stationed itself between Truro and Provincetown, and used one of three Truro windmills as a target during artillery practice. Stones from these windmills were still visible on Mill Hill in 1884 (**Rich 1988**:356 [1883]). On August 9, 1814, Truro appointed a committee of safety due to the "privations and dangers consequent on a state of war" (**Freeman 1965**:II:570 [1862]). Some were more deprived than others, according to Rich. British officers "often landed, visited the houses, were always very civil, and became well acquainted with a good many families. They purchased butter, milk, eggs, chickens, and other supplies, and secured small repairs as needed, paying for them quite liberally in British gold" (**Rich 1988**:357 [1883]).

On December 10, 1813, the Provincetown town meeting gathered to choose a committee of safety, and to consider "the present unhappy situation of the town by reason of the war, and to devise means for the enemy's demands in future, if the town be obliged to comply with them." This action was understandable given the absence of fortifications to protect their harbor. Freeman quipped that during the War of 1812, "as in the war of the revolution...the very headquarters of the naval forces of the enemy was Cape Cod Harbor, strangely left, and ever has been since, unprotected, as if statesmen were intent upon reserving for the common enemy one of the best havens on the continent" (**Freeman 1965**:II:407, 642 [1862]).

Writing in 1846, Hayward reminded people of a lesson learned during the War of 1812, in his description of Provincetown:

> The value of Cape Cod harbor to our naval and mercantile marine in time of war is inappreciable. In possession of any enemy, it would afford facilities for annoying our commerce, without exposure to the gales that so often sweep along the coast. Fortified, and in the occupancy of a portion of our navy, it offers a secure retreat, accessible at all seasons, and sheltered from every storm (**Hayward 1846**:244-245).

Early Industrial Period (1830-1870)

The Civil War. The Union cause was strongly supported by Cape Cod towns, which usually exceeded their quota of men for service (**Kittredge 1987**:257). In Truro a liberty pole was put up in the south part of town, and another "on the hill north of Wilder's"; a military salute was provided by cannon fire. Later a third pole was erected in North Truro (**Rich 1988**:473 [1883]).

According to **Smith** (1922), Confederate cruisers fitted out in English ports made prizes of Provincetown whalers in the Arctic. While this was true, it is likely that the only real contact that people on the Cape had with the war was an incident at Provincetown Harbor. Mason and Slidell, Confederate commissioners on their way to England on the *Trent*, were captured and then released by the Federal government. They were brought to Provincetown and transferred to the British ship *Rinaldo*, which was then devastated by a heavy storm, locally known as the "Mason and Slidell Gale" (**Hatch 1951**:51; **N. Smith 1922**:75-77).

The lessons of the War of 1812 were acted upon, and Cape Cod harbor was defended. Provincetown Harbor was protected by fortifications at Long Point. A three-gun emplacement was located next to the lighthouse, and a five-gun emplacement was located nearby. These military works were situated in the area that had been the site of a community that was established about 1818 and abandoned in the 1850s. Land acquired by the Federal government from the Commonwealth for the purpose of constructing these defenses is shown on a map of 1864 (Figure 63). No actual Civil War engagements are known to have taken

The threat of British or French intervention was a serious possibility about which the leaders of the state were concerned... Thus, the Civil War helped to promote rail development on the Cape.

place here. The batteries will be discussed in greater detail subsequently.

One effect of the Civil War on the Cape was to demonstrate that a railroad would be a valuable way to counter any interference in travel between Boston and the Cape that a hostile sea power could pose. The threat of British or French intervention was a serious possibility about which the leaders of the state were concerned (**1865 Senate Report 230**). Thus, the Civil War helped to promote rail development on the Cape.

Major James D. Graham, who surveyed Provincetown, observed the value of Provincetown Harbor. Indeed, the survey he undertook was intended to aid U.S. Navy ships and commercial vessels to enter the harbor and to provide information for the construction of defensive works (Graham 1836, cited by **Clemensen 1979**:31).

Defense of Provincetown Harbor during the Civil War may seem unnecessary and extravagant today, but during the war it made great sense. Although Confederate naval activity was mostly limited to raiding, such as the attacks on Provincetown whalers at sea, it was not the Confederate Navy that concerned military planners. If, as was a serious possibility in 1862, Great Britain or France were to recognize the Confederacy and intervene to stop the conflict, Atlantic coast harbors would be at great risk. The memory of the Revolution and the War of 1812 justified the fear of military action against the harbor.

A nineteenth-century text on coastal fortifications listed five purposes for erecting batteries on the shore: to close a passage or channel; to protect a town or dockyard from bombardment; to deny an enemy the use of an anchorage; to defend a landing place; and to deter ships from attacking the flank of a line of works ending on the sea (**J. Lewis 1890**:206). The first three purposes apply most directly to Long Point.

According to primary sources investigated by Clemensen (1979), two gun batteries (not "forts") were constructed between early 1863 and December of that year (Major C.E. Blunt to General J.G. Totten, Chief Engineer, January 26, 1864, National Archives RG77, Records of the Office of the Chief of Engineers, Long Point Batteries, Letters Received, cited by **Clemensen 1979**:31). Although common usage calls these batteries "Fort Useless" and "Fort Ridiculous," when these names arose is not clear. As one might expect, the military did not refer to the batteries this way.

On March 5, 1864, the Commonwealth of Massachusetts ceded to the Federal government "all that portion of Long Point extending from the extremity occupied by the lighthouse to a line drawn true west through the northern point of House Point Island, including also that island and all flats adjacent" (Long Point, Provincetown Harbor, Massachusetts, National Archives RG77, Records of the Office of the Chief of Engineers, Military Lands, Massachusetts, Map file Dr189-Mass-1-1, Cartographic Division, cited by **Clemensen 1979**:31). A map showing the boundaries of the land transferred is reproduced as Figure 63.

The artillery installed at Long Point probably included 10- and 15-inch smooth-bore Rodman guns and 100-pound rifled Parrott guns. Clemensen determined that "existing documents do not indicate the exact combination of the guns placed there" (**Clemensen 1979**:37).

In addition to the batteries and the guns, a magazine would have been part of the installation. Mahan states that a powder magazine "should be at least six feet high, and about the same width within; its length will depend on the quantity of ammunition. It may be constructed of fascines, gabions, or cofferwork, or any means found at hand may be used which will effect the end in view" (**Mahan 1968**:89 [1836]). He adds that the roof of a magazine ought to be covered by 3 feet of earth; that its floor should be elevated construction of planks lying on joists and pitched towards the entrance to allow water to drain out and keep the magazine dry; and that animal hides and tarpaulins draped over the walls would help keep it dry.

Beach gave a similar description for the construction of magazines. The walls of Beach's magazine were constructed of two rows of vertical timbers, and the roof timbers were overlain by steel rails, instead of fascines; a tarred tarpaulin kept out moisture. He says that at least 20 feet of earth should separate the magazine from the exterior wall of the battery (**Beach 1894**:90). Plans of the Long Point batteries are illustrated in Figure 64. Field research (documented by **Holmes et al.** [1994]) included preparing maps of the structures today (Figures 65-67).

According to a walking-tour guide produced by the Provincetown Historical Association, one structure that was "built as a barracks on Long Point during the Civil War to quarter the officers and men of two Civil War sand batteries there," was moved across the harbor. It became the home of the Arctic explorer, Admiral Donald B. Macmillan. This house still stands at 473 Commercial Street in the east end of Provincetown (**Provincetown Historical Association 1982**: Tour Pamphlet 2).

Late Industrial and Early Modern Periods (1870-1940)

World War I. In the half century after the Civil War, little military activity took place on the Lower Cape. There was some unfounded concern at the start of the Spanish-American War in 1898 that the east coast of the country was in danger. This fear may have been allayed somewhat by the annual summer naval exercises carried out by the Navy's Atlantic Squadron from the late 1870s up to World War I.

Provincetown was a port of call for the Navy during the summer exercises, and sailors went ashore there for recreation. A local pasture was used as an athletic field until 1905, when officers purchased a cranberry bog that was turned into Evans Field, named after the commander of the squadron. When some local residents complained about the behavior of some sailors and the use of the field on Sundays, Admiral Evans chose other ports for his ships to visit (**Ruckstuhl 1987**).

During World War I, a U.S. Naval Air Station was established at Eastward Point on Nickersons Neck in Chatham. There were dirigible and seaplane hangars, as well as concrete landing areas. In 1920 the facility was abandoned (**Marshall 1974**:249; **MHC 1984c**:18).

The war was almost over when it was brought home to the Lower Cape. On July 21, 1918, a German submarine, *U-156*, attacked a tug boat with a string of barges 3 miles off the coast. A captain of one of the barges pinpointed their position as "just abreast Coast Guard Station No. 40 at Orleans," and the submarine's as a half mile away. Coast Guardsmen immediately set out to sea, and rescued people from the tug. The submarine remained on the surface for a hour and a half, firing 147 rounds without a response from the American aviators (**Vorse 1990**:132-133). According to Barnard, however, bombs were dropped by plane, but they did not explode (**Barnard 1975**:150-152; **Vorse 1990**:137). Crosby told the same story very differently:

> It was at the Tonset end of the beach that the one and only shot to reach our shores in the First World War was fired—it was not aimed at the beach, but it fell there. The target was a barge being towed along. The German sub must have had a Dummkopf of a captain to shoot at such a thing, and a nervous gunner to miss it. Besides the shot which landed on shore another—at least one other—fell into the water, for some ten years later a fisherman on T Wharf showed me a German shell he had picked up in his nets off Nauset (**Crosby 1946**:232).

The U.S. Navy had its own submarine tragedy less than a decade later. On December 17, 1927, off Wood End, the submarine *S-4* collided with the Coast Guard destroyer *Paulding*. The Coast Guard vessel was on patrol, looking for rum-runners, and the submarine was undergoing sea trials. Efforts to save the men of the submarine were unsuccessful (**Berger 1985**:276-280; **Vorse 1990**:226-234).

Late Modern Period (After 1940)

World War II and Camp Wellfleet. Prior to the official opening of Camp Wellfleet, the vicinity was used by the National Guard units from Camp Edwards for training maneuvers in 1941-1942. Troops bivouacked in Truro and Wellfleet, near the Eastham line, east of the New York, New Haven and Hartford railroad right-of-way. In 1942, the Marconi Station area was used as a field artillery firing range. The USS *James E. Longstreet* was towed to the waters off Eastham and used for target practice by the Air Force (**Lowe 1968**:24). In 1942, Vorse wrote, "It's nothing new to have windows rattle and to hear a distant sound of artillery hour after hour" (**Vorse 1990**:368). At that time, there were only sanitation, communication, and water facilities for the troops. The water tower was constructed of wood instead of metal, since the latter was more valuable in wartime production.

Camp Wellfleet opened on March 19, 1943, as the home of the Anti-Aircraft Artillery Training Center (AAATC). In July 1943, the military began leasing land (more than 17,000 acres) from land owners in South Wellfleet. The *Falmouth Enterprise* said, "AAATC has stripped away square miles of scrub oak and pines and built its establishment" (***Falmouth Enterprise*, December 10, 1943**).

Originally there were more than 40 buildings, including 17 barracks, five mess halls, an infirmary, firehouse, water tower, and other facilities, all of which were constructed in the fall of 1943. The artillery firing range extended 4 miles along the coast near Nauset Light, and there were facilities for bivouac and tactical maneuvers by a battalion. Tow-plane targets were used for gunnery practice. A towed-sleeve target was a large white "sleeve" of cloth about 30 feet long and 5 feet wide, that floated through the air like a kite behind the towing plane. The plane was manned and equipped with many sleeves and hundreds of yards of cable. Beginner crews were aided by an officer to insure that they aimed at the target, not the plane. Empty artillery casings may have been reused in the war effort, but some may still be on the property. The *Colony Memorial* recorded that a tow-plane crashed on the beach when visibility was poor and gas ran low (***Colony Memorial*, 23 March 1944**). Fragments of sleeves, cables, and aircraft may also be found.

In June 1944, Camp Wellfleet was temporarily closed, but it reopened in January 1945, with the Navy taking charge of the facility for use as a radar school. The Navy also adapted the beach for use by a transportable night fighter unit. In August 1945, the Navy closed the radar school, and the camp was placed on stand-by.

The Cold War. During the late 1940s, the Navy returned jurisdiction of Camp Wellfleet to the Army, which again used the camp as a training site for the National Guard and reserves. Over the objections of local towns, particularly the fishermen, Camp Wellfleet extended its firing range further off shore in 1951. The following year, buildings were refurbished, new roadways were constructed, and extensive areas were landscaped with grass and tree

plantings. Anti-aircraft artillery units from New England, New York, and New Jersey used Camp Wellfleet for annual two-week summer firing practice at towed-sleeve targets and radio-controlled aerial targets (RCAT).

The RCAT, flown at a range of 200 yards, appeared as a regulation-size fighter plane at 600 yards. Its speed was about 500 miles per hour, so that it could duplicate any tactic performed by standard aircraft. Camp Wellfleet used Baker (out-of-sight) and Dog (in-sight) RCATs. Baker targets were designed for long-range firing by 90 mm and 120 mm guns, and were controlled from radar vans that tracked the firing course on a plotting board. Dog targets were used by 50-calibre machine guns, 40 mm cannons, and 75 mm sky-sweepers, and kept within visual distance of the firing crews. When possible, the RCAT controller brought the target back over land for recovery before releasing the 38-foot nylon parachute that lowered it to the ground. If a water landing were made, flotation blocks in the wing and fuselage kept the RCAT afloat until picket boats could retrieve it. Since Camp Wellfleet's beach was too shallow for recovery, the picket boats had to take the RCATs to Provincetown. From there they were brought back to the camp for repair and reuse (***The Serviceman* 1958,** Vol. 1, No. 10:2-17; various letters, memoranda, newspaper clippings on file at the Seashore Headquarters).

The British HMS *Somerset* was stranded near Peaked Hill Bars on the ocean side near where the Truro and Provincetown town lines then met...The ship was heavily looted by townspeople and the cannons may have been removed.

In 1960, training programs were ended; Camp Wellfleet was placed in caretaker status and was officially closed June 30, 1961. Later that year, the Cape Cod National Seashore was created, and the jurisdiction of Camp Wellfleet was transferred to the Department of the Interior. It is likely that remains of the infrastructure of Camp Wellfleet can be located.

To the north of Camp Wellfleet is the North Truro Air Force Station. This facility was commissioned in December 1950 and was one of many installations established in the northeast during the Cold War era. On October 1, 1985, part of this property was placed under the control of the Federal Aviation Administration. On January 1, 1995, the rest of the property was transferred to the National Park Service.

There is, at present, no significant military presence on the Lower Cape.

Archeological Implications

Unlike other sections in this report, the chapter on military archeological implications is organized by period of conflict. Little land-based military activity took place on the Cape during the Colonial Wars. It is unclear whether or not forts were built in the area. Therefore, a discussion of the form and structure of embattlements of that period is omitted. From an archeological perspective, military affairs on the Cape began during the American Revolution. The locations of military features and areas are indicated in Figure 62.

Colonial Wars and the American Revolution

In 1653, all Cape Cod towns were required to build forts during the First Anglo-Dutch War. The fort locations are undocumented, but may exist. One possible site is Fort Hill in Eastham. A battery may have been built in Truro during the French and Indian War (**Brigham 1836**). It is unknown if this was built, or where it might have been located.

Archeological Record and Considerations. In 1776 a company of American troops was stationed in Truro. There is historical reference to 600 weight of cannon balls placed in Truro during the American Revolution. There is no known documentary evidence of the location of storage areas or any fortifications. Troops may have been the local militia with minimal infrastructure. The location of fortifications for three field pieces requested by the town of the Colonial government in 1775 is unknown. The cannons may not have been received and fortifications may not exist.

During the Pond Village conflict, the British were turned back from landing by a "show of force" by the local militia. The nature of this conflict is short on detail. It is unlikely that any fortifications would exist from this very brief confrontation.

The British HMS *Somerset* was stranded near Peaked Hill Bars on the ocean side near where the Truro and Provincetown town lines then met (the town lines are farther south today). The ship was heavily looted by townspeople and the cannons may have been removed. The *Sally*, a Boston Tory-owned commercial vessel, ran aground at Peaked Hill in 1776 and was looted by local residents. In 1776 the British transport *Friendship* was wrecked at Truro. In 1777, the British brig *Wilkes* was wrecked in Eastham. Archeological evidence of these tragedies is underwater, probably consisting of shipwrecks stripped of all goods and hardware. Underwater resources are beyond the scope of this document.

Research Questions. What was the nature of the short-term conflict at Pond Village? Were short-term, makeshift fortifications constructed?

Are there documentary records in the Waltham Archives indicating the location and nature of companies stationed in Truro in 1776?

Specific Research Requirements. Location of terrestrial archeological resources related to this period would require additional documentary research into military archives. The likelihood of locating early batteries and camps is very low.

War of 1812

What little military activity occurred on the Cape during the War of 1812 took place at sea or offshore. Archeological remains related to hostilities or military activity are few,

with the exception of possible trenches and other defensive features related to the protection of Orleans and other towns.

Archeological Record and Considerations. There was a military skirmish at Rock Harbor in Orleans. Local history refers to trenches dug on the west shore, the remains of which are believed to be visible today (**Barnard 1975**). This should be field-verified.

Trenches may exist in Orleans and other towns, dug as a precaution against potential attack. Their locations are likely to be at harbors and other strategic shore points.

The wreck of the British ship *Newcastle* is located off South Truro; it was probably stripped of hardware and goods.

Research Questions. Is there physical evidence of fortifications associated with the War of 1812?

Do the trenches of Rock Harbor exist today, and do they contain artifacts and features associated with the war?

If trenches associated with the War of 1812 are found at Rock Harbor, are there other trenches of similar construction in other parts of the Cape that are related to early military conflict?

The Civil War

Most of the military activity during the Civil War took place on Long Point in Provincetown, and consisted of gun batteries that never saw action.

Archeological Record and Considerations. The fortification of the Long Point gun battery is visible today and evaluated during this project (**Holmes 1994**). The western gun emplacement is the best preserved; the eastern part is badly eroded. The existing surface consists of indistinct depressions and mounded sand. Anticipated archeological features consist of sand mounds and a "bombproof," or shelter for the powder magazine. The shelter would probably have been a wood-lined chamber covered and surrounded with sand. Other features might include woven basketry gabions with wooden stakes associated with gun enclosures. Also anticipated are fascines—i.e., walls of interwoven branches with stabilizing stakes—associated with the magazine. Many of these features may be evident as buried stakes or post molds. Privies also may exist inside of the fortification, and guard booths may exist near entranceways.

Anticipated artifacts related to military activities may consist of fragments of wood (from cases), metal hardware, military buttons, buckles for ammunition cases, U.S. cartouches for cartridge boxes, clothing buckles, metal wheel rims and basket hoops, gun parts, ammunition and other materials related to small arms (e.g., Minie balls, gun locks, ramrods, cartridge box cartouches, bayonets, rifle bands, and brass cartridges for revolvers). Leather objects from uniforms, holsters and pouches, tack, and other uses should be common. Fascine knives for fascine and gabion construction may exist.

Large wood platforms that served as supports for the gun carriages probably have been removed, given the customary reuse of building materials on the Cape. This would include planking for bulkheads used to retain sand barriers in the gun emplacements. Wooden stakes, small posts, and basketry remains may be more common features remaining.

A plank road may have existed between the two fortifications. Portions may still exist unless the materials were removed for reuse elsewhere.

Barracks may have consisted of platform-supported tents and permanent buildings. Barracks areas would be distinguishable from military areas by increased domestic and personal materials, e.g., bottles, pipes, flatware, buttons. Privies may be located nearby on the downwind side.

Barracks areas may contain the remains of campfires and cooking hearths associated with domestic activities.

Barracks buildings were removed from the site to Provincetown after the war (where they may exist today), but cellar holes and associated features (wells, trash pits, etc.) should remain.

Domestic materials associated with the military barracks should include lead-sealed metal cans, copper kettles, metal cooking pots, tripods, trammel hooks, cranes and other cooking apparatus, barrel bands related to food supplies, bone or horn-handled three-tined forks, and other cutlery. Few or no ceramics are likely except in officers' areas, but tinwares would be abundant. Wine and liquor bottles would be common, especially in officers' quarters, as would decanters and stemware associated with the consumption of alcoholic beverages. Trash middens should contain bone, shellfish, and fish scales, although middens would undoubtedly have been picked over thoroughly by sea birds. Pharmaceutical bottles would be common. The buildings may not have had foundations, but rather may have been built on piers or wood sills. Post molds may be evident.

Artifacts related to architecture might include cut nails, window glass, bricks, brick footings for hearths, and the remains of kitchen outbuildings or summer kitchens. Privy pits are possible but, given customary practices of the time, many privies may have used the adjacent Lobster Plain area, allowing water to wash effluent away.

In other forts of the period (e.g., Fort Moultrie in South Carolina), guns and other heavy metal hardware have been buried at the fort after abandonment (**Hsu,** personal communication). A magnetometer survey would be useful to determine if this were the case at Long Point.

Liberty poles were constructed in three locations in Truro. Evidence of such poles would be extremely difficult to locate, with post molds the only anticipated feature.

Research Questions. Where were the wharves related to the supply of the Long Point gun battery gun emplacements? Have their remains been covered by silt, or have they been removed? A preliminary search during this project (on foot and by boat) failed to locate them.

What is the subsurface condition of the Long Point gun battery complex? If intact, this site is one of few northern coastal defenses dating to the Civil War period, and is the only Civil War facility on the Cape. Therefore, if it has integrity, this site may be eligible for inclusion in the National Register under Criterion C.

What were the conditions of military life in an outpost outside of the theater of war?

Given the derision of local lore ("Fort Useless" and "Fort Ridiculous"), were the Long Point gun emplacements constructed in a manner that would have accomplished its military objective?

What was the size of the personnel complement assigned to protect Provincetown?

How efficiently were the facilities dismantled?

How efficient were the gun emplacements, given that they were constructed on unconsolidated sand?

Where were the barracks and water supply located?

World War I

Evans Field, a local baseball field, was created out of a cranberry bog in 1905 for recreational use by the U.S. Navy. The period of use was short. The field is not a military facility and has been modified considerably since. It has minimal archeological significance, and may not be detectable.

A Naval Air Station was located at Eastward Point in Chatham. The period of usage was quite short, and the base was deactivated in 1920. This base is outside the limits of the Cape Cod National Seashore.

In 1927, the U.S. submarine *S-4* sank off Wood End, Provincetown. This is an underwater archeological resource, and as such is beyond the scope of this report.

World War II and the Cold War

Military activities on the Cape consisted of artillery and other tactical training in and around Camp Wellfleet, the operation of Coast Guard stations, and a small Air Force Station in North Truro.

Archeological Implications

A bivouac area for the National Guard existed in 1941 and 1942 in South Wellfleet near the Eastham town line. Trenches, foxholes, and casings and rounds for artillery and small arms could be found in this area. Substantial structures are unlikely.

Anti-aircraft and anti-ship artillery training took place in Wellfleet from 1942 to 1945. Naval and Army Reserve uses continued through 1961. The small base surrounds today's National Seashore Headquarters and includes the Marconi Station. The area encompassing Camp Wellfleet includes two historic communities, the archeological remains of which are in existence. Camp Wellfleet consisted of hastily constructed buildings designed for short-term wartime use. While the number of structures was considerable (40 in all, including 17 barracks), foundations would have been largely concrete piers and poured slabs with reinforced steel bars. Buildings consisted of wooden quarters and barracks, mess halls, maintenance and storage sheds, concrete bunkers, metal quonset huts, radar and communications buildings, magazines, a rail connection, guard posts, and a water tower and fire station. Large areas were used for gunnery practice, and dead and live rounds may be found in these areas. Features include mounds and pits where tanks "dug in," chain link perimeter fences and roads, electrical poles and trenches, ditches, and trenches. Along the beaches where small aircraft were used to tow targets, artifacts may include spent ammunition (commonly used types include 40 mm, 90 mm, 75 mm, 120 mm cannon shells; .50 caliber machine gun shells; .45 caliber and 30.06 caliber small arms ammunition), aircraft parts (from a plane crash), parts from radio-controlled drone aircraft, cables, bolts, sleeves, and other parts. The infrastructure of the Camp Wellfleet complex includes a picket boat station in Provincetown, aircraft facilities at Chatham, and numerous roads and the railroad. Throughout portions of the base, hazardous materials and unexploded ordnance are a possibility and should be considered prior to archeological testing.

The North Truro Air Force Station was constructed after World War II. Facilities consist of radio towers and related structures. Today the station is the site of a facility operated by the Federal Aviation Administration and used for civil aviation.

There are several Coast Guard facilities on Cape Cod. These have already been discussed in Chapter IV, "Maritime Life," under "Aids to Navigation: Lifesaving."

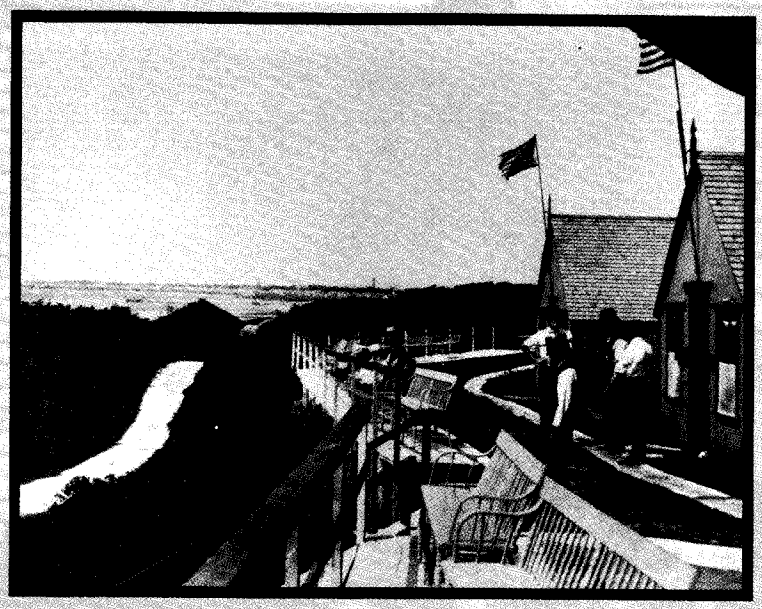
Chapter VII

TOURISM AND SEASONAL RESIDENCY

A Note on Sources

Chronology

Archeological Implications



The major economic activities of Lower Cape Cod today are tourism and tourist-related service industries. Facilities have been constructed to provide entertainment, recreation, and even religious experiences for visitors and part-time residents. A result of tourism is that landscapes associated with maritime and agrarian life have been drastically changed. As tourism became important to the economy of the Cape, the social worlds of fishermen and farmers were altered as well (**T. Beyle 1963**:26-36).

On the Lower Cape, tourism could not develop until other activities diminished or were abandoned entirely. Agricultural practices occupied land, preventing use by visitors. Close-knit communities of year-round residents appeared hostile to visitors. Features of the landscape that attracted tourists were inaccessible; fish processing was done on beaches, working ships crowded the harbors, and maritime-support industries took up valuable space in the towns. The conflict between the maritime and agricultural activities on the one hand, and the demands of tourism on the other, is illustrated by the problem of the odors from fish processing that filled the air of a busy fishing port like Provincetown in the late nineteenth century. Such irritants are absent in today's Provincetown, and they probably would not have been tolerated even in the early twentieth century (**Edwards 1918**:162).

Another transformation that was necessary for the development of large-scale tourism was the development of fast, cheap, and reliable transportation. This included improved roads, piers, railroads, and airports. The development of the means for tourists to get to the Lower Cape easily is discussed in Chapter VIII, "Transportation and Communication."

Stott divides the history of tourism on the Cape into three periods based on changes in infrastructure and transportation: before 1870, between 1870 and 1920, and after 1920 (**Stott 1987**:307). Although the railroad reached portions of the Lower Cape before the Civil War, it apparently had little influence on the development of tourism before 1870. The period was characterized by the ownership of second homes by wealthy persons and the opening of "houses" for tourists. In the years between 1870 and 1920, railroad travel increased, hotels were built to lodge tourists, and artists' colonies began. Finally, after 1920, automobile traffic replaced trains and steam packets as the most common way to get to the Cape; facilities were built along the highway network, with private summer homes constructed wherever one could travel by road.

In the years between 1870 and 1920, railroad travel increased, hotels were built to lodge tourists, and artists' colonies began.

It is possible to distinguish different kinds of tourism, but for the purposes of this discussion "tourism" embraces all forms of recreational travel and temporary residence. Touring can be manifest in a variety of activities that include recreation and historical tourism. It is contrasted with travel for business purposes; it is also distinct from exploration, settlement, itinerancy, and being stranded. According to Nelson Graburn:

> A major characteristic...of tourism is that it is not work, but is part of the recent invention, re-creation, which is supposed to renew us for the workaday world...Tourism is a special form of play involving travel, or getting away from "it all" [home and work] (**Graburn 1977**:18).

Tourism is a relatively recent historical activity. Until the twentieth century, North American working classes neither engaged in long-term travel nor spent significant time away from work. Leisure was not a concept that characterized the organization of time in the seventeenth, eighteenth, and part of the nineteenth centuries. Travel for the majority of the population was restricted mainly to the requirements of particular livelihoods. Sailors, stage and wagon drivers, peddlers, and soldiers did most of the traveling among the working classes. Elites incorporated travel into business and education. The rest of the population seldom strayed more than a few miles from their homes.

So rare were tourists in the late eighteenth and early nineteenth century that suspicion was aroused by the presence of outsiders. These tourists, such as Kendall, Dwight, and Thoreau, had to fend for themselves. People living on the Lower Cape did not expect visitors, nor did they make an effort to accommodate them. Except for the literary record these visitors created, they left no trace of their travels.

Only in the middle of the nineteenth century did anything like the concept of leisure time appear. Domestic travel for pleasure first emerged when fashionable spas and seaside resorts were started. Originally established for their medicinal benefits, these attractions became areas for entertainment of the elite (**Burkart and Medlik 1981**:3-4).

Around the middle of the nineteenth century, tourists began to leave their marks on the landscape. Resort-style tourism of the late nineteenth and early twentieth centuries required the development of accommodations and entertainment. These changes were often at odds with the activities of the year-round population (**T. Beyle 1963**; **Nixon 1990**).

A Note on Sources

Secondary sources reflect this conflict and are themselves expressions of it. Most Cape Cod historians, such as **Deyo** (1890) or **Kittredge** (1987), did not discuss tourist activities in any great detail, no doubt regarding tourists as not being particularly representative of important Cape Cod events, places, and people. On the other hand, Mary Heaton Vorse, a writer living in Provincetown, described a landscape where visiting writers and artists were the center of

attention (**Vorse 1990**). Her account can be compared with that of Anthony Marshall, a native of Truro, who describes tourist accommodations but generally relegates tourists to the margins of his descriptions (**Marshall 1974**).

Popular works are useful as primary documents for the study of tourism. Few books for the general public about tourism have been written, however; it seems that the tourists who buy much of popular literature are not very interested in the subject.

As for art colonies, most of the material addresses the topic from an art or literary criticism viewpoint, rather than as a social history. An exhaustive summary of tourism and artist colonies would require a detailed examination of primary documents, as well as ethnographic interviews with knowledgeable informants.

Chronology

Contact, Settlement, and Colonial Periods (Before 1620-1775)

Cape Cod has attracted visitors for centuries. Basque and Portuguese seamen traveled there in the sixteenth century to fish. They landed only to process their catches before sailing back to Europe. Various explorers such as Gosnold and Champlain encountered the Cape and made brief excursions into the interior. In 1620, Pilgrim visitors arrived, passed on to Plymouth, and then returned a generation later to settle in Nauset. Settlers became residents, and then others came to visit them. Travelers who visited the Lower Cape relied on the private homes or an inn for accommodations.

Inns. Inns became a feature of the New England landscape very soon after English settlement. In England, the tradition of innkeeping was well established, and the early settlers transplanted the custom to the Bay Colony, with a few modifications to accommodate Puritan tastes. Ordinaries and inns were established by law to provide people on legitimate journeys with a place of safety, food, and shelter for themselves and their animals. They were also gathering places for local residents and those in the neighborhood looking for work; an example of an establishment that functioned as a resting place for in-shore whalers is the Wellfleet Tavern, described by **Ekholm and Deetz** (1971).

Originally, only those community members with the highest moral standing in their community were allowed to be innkeepers. Towns would not consider people of lesser stature for fear of corrupting travelers and local residents. Travelers in general were exempt from local regulations concerning behavior, but innkeepers were subject to punishment whenever infractions occurred. To enforce the law, innkeepers and patrons were kept under close surveillance (**Bragington-Smith 1985**:191-192).

In addition to inns, which were established mainly to accommodate strangers, Cape Cod residents instituted bed-and-board as part of cooperative work arrangements. As local residents diversified their agricultural strategies in the late eighteenth century to include saltworks and maritime activities, farmers needed to travel longer distances to tend to their various enterprises. Especially during busy times, such as harvests or market days, farmers found it difficult to visit all their holdings and return home in the same day. A farmer stayed overnight with other households, usually relatives, in exchange for a small fee to do his washing. Mariners also benefited from bed and board while they waited for a berths on sailing vessels. Later, owners of large houses offered bed and breakfast to travelers in exchange for a larger fee (**Bragington-Smith 1985**:194).

In the late 1700s, stagecoaches made regular runs from Sandwich to Provincetown along the King's Highway. The road became a profitable place on which to establish an inn or tavern, and in 1767, there were 14 tavern stops on the run from Sandwich to Provincetown (**Bragington-Smith 1985**:193).

Federal and Early Industrial Periods (1775-1870)

Inns. Although inns were still important for travelers in the nineteenth century, innkeepers had lost their high social standing. Moral sentiment in some places ran against taverns and inns in general. On the Lower Cape, a strong temperance movement focused its energy on closing all establishments serving alcohol. In 1817, there were 17 taverns along the King's Highway in Yarmouth, but the following year only one remained (**Bragington-Smith 1985**:193-194). The strong local temperance sentiments thus limited accommodations for visitors.

Guest Houses. A few Cape Cod residents continued to turn a profit from visitor accommodations by developing the "house," or guest house. This was often a modified residence, and it was regarded as a fashionable contrast to an inn. One of the first houses was Pilgrim House in Provincetown. Thoreau visited this house in 1857, and described it in the following passage.

> At the Pilgrim House, though it was not crowded, they put me into a small attic chamber which had two double beds in it, and only one window, high in a corner, twenty and a half inches by twenty-five and a half, in the alcove when it was swung open, and it required a chair to look out conveniently. Fortunately it was not a cold night and the window could be kept open, though at the risk of being visited by the cats, which appear to swarm on the roofs of Provincetown like the mosquitoes on the summits of its hills. I have spent

> four memorable nights there in as many different years, and have added considerable thereby to my knowledge of the natural history of the cat and the bedbug. Sleep was out of the question. A night in one of the attics of Provincetown! [T]o say nothing of what is to be learned in entomology... My experience is that you fare best at private houses (**Thoreau 1962**:IX:453 [1857]).

Thoreau also described the Pilgrim House as follows: "The barroom may be defined as a place to spit."

By the time of the Civil War, there were dozens of guest houses and hotels on the Cape. The largest of these, in Cotuit Port, accommodated hundreds of guests (**Bragington-Smith 1985**:195). Another was the Highland House in Truro. The original structure, built as a private home in 1835, stood at the current junction of Highland and South Highland Roads. It became a stagecoach stop, then a guest house; Thoreau spent a night there. In 1876, a two-story wing larger than the original structure was added to it (**Binder and Lowenthal 1994**:11-16).

Religious Camp Meetings. Attracting seasonal visitors such as those who attended religious camp meetings became an important social activity for some Cape Cod residents, although it was not an economic necessity for the community at this time.

The first instance of large numbers of seasonal travelers being attracted to Lower Cape Cod was at Millennium Grove, a Methodist religious camp. Camp meetings began on the frontier in the eighteenth century, but they spread to other parts of the country in the early nineteenth century (**Ahlstrom 1972**:I:530-531; **Andrews 1962**:135; **Stilgoe 1982**:231-238). An account of Methodist "Four-days Meetings" held in Truro was given by **Rich** (1988:313 [1883]).

Millennium Grove was one of several Methodist camps in Massachusetts founded in the nineteenth century. Others were located at Laurel Park in Northampton and in Oak Bluffs on Martha's Vineyard. Originally established in Wellfleet in 1819, it was moved to Truro in 1826, and to North Eastham in 1828 (**Crosby 1946**:227-230; **Deyo 1890**:726, 939; **Kittredge 1987**:282; **Rich 1988**:328 [1883]). Millennium Grove was moved to Yarmouth in 1862, which was then the terminus of the railroad. Here the camp was more accessible to Boston residents (**Bragington-Smith 1985**:197).

This camp was welcomed by local residents. One reason for this was that Methodism had adherents on the Lower Cape. Several Methodist chapels had been built, and these were already used for revival meetings. Another reason was the long-standing temperance sentiments of Eastham, which remained a feature of the community into the twentieth century (**T. Beyle 1963**:23-24, 42).

In 1849 Thoreau passed by the camp when it was unoccupied and described it as an oak grove in a landscape where very few trees grew. Its grounds were fenced, and the frames of tents stood among the oaks. The camp's oven, pump, and tent supplies were kept in a permanent structure on the spot. Several tables were scattered among the tent frames, and under each table there were heaps of clam shells left from past meals. By Thoreau's estimate, the meeting attracted 150 ministers and 5,000 participants from all over the state. In addition to attending the religious event, campers regularly walked to the Atlantic shore to enjoy the beach during the meetings' full moons (**Thoreau 1988**:53-56, 76 [1865]). Thoreau probably saw the camp at its height (**T. Beyle 1963**:23).

Seasonal Residents and Tourists. In the early nineteenth century, sail packets and stagecoaches provided transportation for visitors to the Cape. Some of the Cape towns, particularly those on the Upper Cape and in rural Plymouth County, had a reputation for hunting and fishing opportunities. The term "sportsman's tavern" refers to establishments that catered to visitors who chose to hunt or fish (**Holmes et al. 1993**; **Stott 1987**:308). No site that can be identified as one of these early tourist facilities is known on the Lower Cape.

Steam packets began to run on a regular basis from the Cape to Martha's Vineyard in 1835, but the Lower Cape towns did not have such service until after the railroads were constructed (**Stott 1987**:309). Apparently, steam packets did not have an effect on tourism on the Lower Cape in the early nineteenth century.

The railroad reached Sandwich in 1848, Yarmouth in 1854, Orleans in 1865, Wellfleet in 1870, and Provincetown in 1873, with a branch to Chatham in 1887. Only after the completion of the line to Provincetown did the railroad bring tourists in large numbers to the Lower Cape.

Among the hotels built before 1870 were the Bradford Bilford Hotel of Provincetown, which opened in 1858, and the Ocean House in Chatham, which opened in 1860 (**MHC 1984a**:14, 1984d:15).

Late Industrial Period (1870-1915)

Seasonal Residents and Tourists. Summering on Cape Cod achieved national attention in 1890 when President Grover Cleveland established a summer residence in Bourne. In his second term (1893-1897), he made that residence a summer White House (**Bragington-Smith 1985**:198).

The Lower Cape did not develop tourist facilities as intensively as did the Upper Cape and the Islands, even after the advent of the railroad and packet service. Generally warmer water on the southern shore of the Upper Cape was more attractive to tourists.

Around the turn of the twentieth century, the Lower Cape became known as an area where people who enjoyed

the outdoors could find accommodations and recreation, principally for hunting and fishing. Sportsmen from Boston and other urban centers traveled to the Lower Cape to spend a few days to several weeks. Houses in every town readily accommodated such travelers, usually during the summer and fall months. The Central House, an inn located on the State Highway near the Depot Road intersection in Truro Center, accommodated quail hunters (**Marshall 1974**:25). Hunters preferred to stay at inns at the beginning and end of their visits, but camped outdoors during the chase. Soon sportsmen built small shacks for shelter on a few acres of worthless land purchased at low prices. Such shacks were often developed into summer homes to which sportsmen brought their families (**Bragington-Smith 1985**:194-195).

Hotels, Houses, Beach Cottages, and Second Homes. Nason did not list any hotels in the Lower Cape towns, but the MHC notes that "Hotel and inn construction intensified in the 1880s and 1890s" in Chatham. The hotels included the Baxter House (1886), Old Harbor Inn (1898), Rhode Island House (1880), the Hotel Mattaquason (1890), the Hotel Chatham (1890), and the Chatham Bars Inn (1914) (**MHC 1984a**:16; **Nason 1890**:228-230). Wellfleet had several hotels in this period, including the Wellfleet Hotel, the Holbrook House, the Indian Neck Mansion Hotel, and the Chequesset Inn (**MHC 1984f**:18).

By the turn of the century, Provincetown had four hotels. Various names were used for the same establishment; among the hotels were the Pilgrim House, the Atlantic House, the New Central House (**Ruckstuhl 1987**:20-22). In Truro, the Whitman House (built around 1915) was located on the intersection of Castle Road and the current Route 6 (**Marshall 1974**:25, 32).

Also in Truro, a new Highland House was built in 1906-1907 near the original structure. It had a dining room, kitchen, lobby, and 16 sleeping rooms; water was supplied by a nearby windmill. The guests used privies; indoor toilets were installed later. In 1907 visitors to the Highland House could enjoy the new golf course, and a bowling alley was added in 1911. Use of the 1835 building was discontinued; the large wing was removed, and the main house was moved to a hill on Old Colony Road in South Truro. The structure was then rebuilt, but still bore a sign saying "Thoreau House" (**Marshall 1974**:102).

In addition to the Highland House itself, several cottages were run by the same management. They were located between South Highland Road, Highland Road, and Cape Cod Light. Only two had their own kitchens. Later, bathrooms were installed in the cottages, and water was supplied by two small windmills. The cottages were named "Millstone," "Pilgrim," "Beacon," "Coleraine," "Haven," "Rock," and "Mayflower." The "Coleraine" was actually the cabin from a shipwrecked barge of that name which came ashore at Cape Cod Light in 1915; it later became the Highland Golf Club House. After automobiles became common, a 15-car garage was erected near the "Rock." Highland House was closed after the establishment of the Cape Cod National Seashore and is now the headquarters of the Truro Historical Society.

Truro had several other tourist houses. The Atwood House was located south of Pond Road just off Bayview Road. It was a Cape Cod-style house with a two-story rear ell. Later it was renamed the Bayview House. The Bayside House was located off Pond Road near the railroad station in a part of Truro called "Twinefield." Water for this facility was supplied by a windmill. Located near Tom's Hill and near the shores of the Pamet River was the Corlew House. Its original structure was a substantial residence with an ell, owned by the Snow family. Mrs. Corlew acquired the house, and in 1900 she removed the ell, raised the roof, and added a second story. She then altered the interior to make a boarding house (**Marshall 1974**:96, 103-106).

Beach cottages were constructed to accommodate summer tourists who sought the experience of seaside living and entertainment. The Ballston Beach Colony was founded by Sheldon W. Ball in 1889 and was located at the junction of North and South Pamet Roads in Truro Center, between the meadows of North Pamet and the Atlantic Ocean. Mr. Ball attracted New York City clientele to his resort by advertising in newspapers there. The first cottages were built in 1891, and the colony featured a clubhouse and a bowling alley; croquet was played on Pamet Meadows. Originally the cottages were placed in a V-pattern with the point facing the nearby meadows. The clubhouse, also called the community center, was a small, two-storied structure with a veranda around the second floor and a piazza around the first floor. It had a central dining hall where all the colony people ate, since the original cottages did not have kitchens. Tea parties were encouraged, since no alcoholic beverages were allowed. Until iceboxes were installed later, the community center kitchen included sugar barrels lowered into dune sand where milk and butter were kept cool. Milk, eggs, and fresh vegetables were supplied from a farm on South Pamet Road. Water was supplied by two windmills, and the colony had two outdoor privies. Because of erosion, the colony was moved several times. The last remaining cottage was dismantled in 1970 (**Marshall 1974**:96-99).

Until iceboxes were installed later, the community center kitchen included sugar barrels lowered into dune sand where milk and butter were kept cool.

In 1898 Lorenzo D. Baker established the Corn Hill Beach Colony on Corn Hill in Truro. He built six cottages of substantial proportions. The structures had two or three rooms, with a fireplace on the first floor. Three or four more rooms were located on the second floor; no kitchens were installed. In 1902, five more cottages were built, along with the "Governor Bradford Lodge," which had a parking lot. The lodge featured flights of stairs in front and on the

beach side. This colony also had outdoor privies and a wind-powered water supply: the windmill was erected on top of the hill and supplied water to a large wooden tank mounted on a tower. Cottages were still standing in 1970 (**Marshall 1974**:99-102; **Ruckstuhl 1987**:13).

The Long Nook Beach Colony was built in Truro around 1915 by "Will" Rich and thrived for a while. The last cottage was removed in the 1960s (**Marshall 1974**:9).

In addition to the tourists who stayed at a house or hotel, there were families that owned summer residences. Stott writes that the glacial ridge between Bourne and Falmouth was a social divide; Buzzards Bay and Woods Hole were oriented towards New York society, whereas the rest of the Cape looked to Boston (**Stott 1987**:313). A few houses on the Lower Cape were occupied by wealthy seasonal residents. The development of one property, the Atwood-Higgins complex, is an example of this.

Early Modern Period (1915-1940) and After

Some of the trends established in the later part of the previous period persisted and were developed further in the Early Modern Period. Seasonal residents and tourists arrived in increasing numbers, and residences, accommodations, and other facilities were constructed to serve their needs. In addition, summer camps and artists' colonies became part of the Lower Cape. Cape Cod was transformed during this period into an area that depended on tourism for its economic survival.

Summer Camps. In 1914 a nautical camp for girls, Camp Chequesset, was established in Wellfleet by Miss Alice Hamilton Belding of Randolph-Macon Woman's College in Virginia, and William Gould Vinal of the Rhode Island College of Education. Camp Chequesset was attended during the summer months by large numbers of girls from all over the country. At the camp, they enjoyed outdoor activities and were given nautical instruction. Public lectures were a part of the experience, and the girls were required to organize various entertainments for the benefit of worthy purposes. In 1920, the National Association of Directors of Girls' Camps held their first Nature Lore School there (**Nye 1920**:43).

Artists' Colonies. A special form of seasonal residence was the artist colony. The most prominent and important artist colony on the Lower Cape was located in Provincetown. It grew very quickly and developed an international reputation for experimental and influential theater and literature. Provincetown attracted many literary and artistic figures from New York City and elsewhere.

When considering the art colony of Provincetown, it is good to remember that it was not actually a settlement or concentration of structures that could be identified. Vorse wrote, "One of the most frequent question of the tourists is, Where is the art colony?' They figure the artists as living together in a species of art ghetto, perhaps with bars in front of them through which one may watch them painting, with maybe a keeper and a sign saying, Do not annoy or feed the artists!'" (**Vorse 1990**:209).

Mary Heaton Vorse came to Provincetown from Manhattan in 1906 to give her children sea air. She enjoyed the town, bought an old home and turned it into a year-round residence. Vorse supported herself as a freelance writer and was the first literary person to settle there. A writer friend of her first husband, Hutchins Hapgood, soon followed Vorse and spent his summers in Provincetown. Other writers from New York also came, spending their summers in Provincetown and returning to New York for the rest of the year (**Gelb and Gelb 1962**:303).

A group called the Provincetown Players acquired the use of a fishing shack owned by Vorse for a theater. Christened the Wharf Theater, the playhouse was only 25 feet square and 15 feet high. It had been built on the end of a fishing wharf, and through the cracks in the wide plank floors the bay waters could be seen at high tide. The stage measured 10 by 12 feet; it could be moved back to the end of the wharf for the effect of distance. Doors at the back could be flung open to reveal the bay as a backdrop. Two days before the first performance, the shack caught fire, and although the flames were quickly extinguished, two walls were blackened and the curtain destroyed. The Players blackened the remaining two walls, hung fishing nets for effect, and replaced the curtain. Since wood was scarce on the Cape, no seats were built, and audiences were obliged to carry their own chairs to performances. In 1941 the Wharf Theater was washed into the sea during a gale (**Gelb and Gelb 1962**:306-307; **Vorse 1990**:197-203).

The Players produced a number of original plays during the summer of 1915 and then returned to Manhattan for the rest of the year. The following summer, the Players returned to Provincetown to continue their work on original manuscripts that could not find backing in New York.

In 1916, a virtually unknown Eugene O'Neill was attracted to Provincetown when he heard of the recently formed Provincetown Players. He offered them his new manuscript, *Bound East for Cardiff*, which became an immediate success there. O'Neill spent that summer in Provincetown and wrote his second play, *Thirst*. In the fall, the whole company moved back to New York to stage *Bound East for Cardiff*. O'Neill achieved instant fame and recognition, and in 1917 he and the Players moved back to Provincetown.

During his first summer in town, O'Neill lived in an abandoned Coast Guard station located at the shore line at Peaked Hill Bars. The Coast Guard relinquished the station because it was in danger of washing into the sea (which it

actually did in 1931). O'Neill was attracted to the station because of its isolation and its proximity to the sea (**Gelb and Gelb 1962**). He later bought a home at Brook Farm in Provincetown, but eventually sold it.

A community of artists and writers is associated with the structures known as the "Dune Shacks" on the ocean side of Provincetown. In 1993, the remaining shacks and the associated viewshed were listed on the National Register.

Among the artists of the Cape, there was a division between the modernists and the traditionalists. The painters of Provincetown included Hans Hofmann, George Elmer Browne, Marcus Waterman, Ambrose Webster, Charles Hawthorne, Edwin Dickinson, Ross Moffett, Agnes Weinrich, John Whorf, Charles Kaeselau, Henka and Jerry Farnsworth, Lucy and William L'Engle, Charles Heinze, Charles Demuth, Arthur Fiske, Oliver Chaffee, Karl Knaths, Coulton Waugh, Floyd Clymer, Tod Lindenmuth, Reynolds and Gifford Beal, and Frederick Waugh (**Vorse 1990**:204-209).

Although there are works about the writers and artists who practiced their talents in Provincetown, most are not directly concerned with topics that can be addressed by archeological research; they are either critical studies or biographies.

Seasonal Residents and Tourists. In the twentieth century, Cape Cod populations continued to shift their strategies away from agriculture. Many residents moved to more prosperous areas, and as the local population aged, numerous houses and cottages became vacant. Summer vacationers readily bought up available housing on the outskirts of towns, or rented rooms at inns or in homes within walking distances to beaches. When such housing was unavailable, new cottages near beaches, shores, and ponds were constructed for seasonal visitors. Such vacationers were called "summer boarders" and consisted of unmarried men and women renting rooms singly, as well as married couples who rented sections of homes or entire cottages (**Marshall 1974**:94-95; **Nye 1920**:42).

The most important innovations in transportation that affected the Lower Cape were the development of affordable automobiles and the improvement of the Cape's road system. In 1935, two steel bridges were completed spanning the Cape Cod Canal. Roads were improved and, between the two world wars, automobiles replaced the train as the dominant form of transportation for tourists headed to the Cape. National gasoline distributors installed gas pumps and garages in former livery stables. In the 1940s, the motel (or "motor court") was developed as a form of tourist accommodation, replacing the large railroad-oriented hotels (**Stott 1987**:314). Commercial air travel was introduced to the Cape in 1946.

Archeological Implications

Religious Camps

Early religious camps were large areas that contained residential tent complexes with more permanent structures housing the camps' cooking and watering facilities. The camps were located within walking distance to attractions such as the shore. Sanitation was an important issue considering the concentration of large groups for a period of time. Camps should not be difficult to locate archeologically. Many locations are known (Figure 68) and documentary evidence is available.

Archeological Record and Considerations. Camps were located near transportation and away from odorous industrial areas.

Residential tent grounds are low-visibility, low artifact-density sites.

Camp locations were moved (e.g., Millennium Grove was moved from Wellfleet to Truro, to North Eastham, and finally to Yarmouth). Tent areas would be indicated by post molds or the remains of wooden tent platforms, assuming the latter were abandoned. Given the Cape's characteristic frugality in the reuse of wooden materials, their abandonment is unlikely.

Domestic refuse would be thin and limited to portable items, lacking in ceramics.

Grounds were fenced. Post molds and fenceline ridges may be evident archeologically.

Trash scatters may reflect imports from other parts of Massachusetts and New England.

Cooking and watering (wash) houses should be detectable. Some may still be standing and reused for different purposes. Given the frequent movement of some of the camps, construction of the cooking building may have been of an ephemeral nature (i.e., post-in-ground construction).

Pumps and piping may still be evident in sites of cooking and watering houses.

Artifact scatters should reflect an absence of heat byproducts related to winter occupation.

Sanitary facilities would be concentrated in an area well away from living and cooking areas, presumably situated downwind. These facilities would be detectable archeologically through the use of soil chemistry tests, trenches, and open excavation. Plant robusticity may be greater over large deposits of refuse and human waste, and therefore detectable. Color-infrared photography may be useful in detection.

Middens of shellfish would be evident in table areas and in the vicinity of the cooking structure.

Camp sites are best detected archeologically through large horizontal excavations.

Research Questions. Was permanence an issue in the construction of year-round camp structures?

Is there evidence of preferred foods in the mess-related middens?

Is there evidence of social class in the deposits and is there spatial patterning evident as a result?

Were the structures inhabited by camp administrators and ministers different than those of regular campers?

Infrastructure. Camps were located near a means of transportation such as the railroad or well-traveled roads, in the vicinity of a recreational attraction such as the shoreline. Camps would be well away from commercial industrial areas, especially those with odorous occupations.

Special Research Requirements. Research of primary documents, particularly maps would be important to locate camps. Documents may exist in religious records concerning camp activities.

Inns/Taverns

In the early years of settlement, inns and "ordinaries" were common in settlement areas to provide lodging for travelers. They often were located in populated areas such as town centers and at crossroads. During the era of stagecoach transportation, inns were located along stage routes to accommodate travelers. Alcohol was an important commodity in early taverns, but was virtually eliminated in the early nineteenth century in response to the temperance inclinations of local religious groups. Many taverns were closed during this time. In the late nineteenth and early twentieth centuries, tourist-related accommodations flourished, but varied in size, style, and function.

Alcohol was an important commodity in early taverns, but was virtually eliminated in the early nineteenth century in response to the temperance inclinations of local religious groups.

Archeological Record and Considerations. Stagecoach taverns were located along stage roads, particularly at intersections of major roads.

Bed-and-board establishments and small resort houses would be virtually indistinguishable from residential sites.

Substantial stables would be a part of most inns.

Middens of pre-1820s taverns would contain bottles related to alcoholic beverages. For a time thereafter taverns would contain fewer liquor bottles, but more bottles used for alcoholic patent medicines.

The contents of tavern/inn middens would be extremely varied depending upon the type of inn, its clientele, and period of use. For example, the domestic middens of Wellfleet Tavern and its whaling orientation would be very different from those evident at nineteenth- century inns catering to wealthier clientele in pursuit of leisure activities.

Many of the guest houses and resort hotels of the late nineteenth and twentieth centuries were large structures with windmills and outdoor privies. Septic facilities associated with indoor toilets would be evident in more recent sites.

The larger guest houses and hotels often had associated cottages for residential use.

Prior to the availability of ice, chemical, and electrical refrigeration, underground storage facilities were used. Some, as at the Ballston cottage complex, were as simple as barrels buried in the sand.

Research Questions. What type of tavern is represented?

How are the artifact deposits at an inn or tavern site distinguished from those of previously analyzed inn/tavern sites throughout the northeastern United States?

In larger-scale establishments, are the activities of servants or slaves evident in the site?

Is social status of the clientele distinguishable in the artifact deposits and features?

Do alcohol-associated artifacts decline in response to historically recorded temperance concerns?

Theaters

Remains of the Wharf Theater are unlikely to be detectable archeologically, given its marine location and destruction by a gale.

Cottage Colonies

Residences or residential colonies such as the "dune shacks" of Provincetown have the greatest archeological potential.

Archeological Record and Considerations. Some colonies were clustered around activity centers (e.g., at Ballston Beach Colony in Truro Center).

Some colonies, such as the "dune shacks" in Provincetown, are scattered settlements.

Foundations were minimal, leaving at most a slumped cellar hole or posts.

Cottages were usually wood-framed structures.

Research Questions. At sites of deserted shacks, is it possible to link the use of the dwelling with significant artists?

What were living conditions like during occupation of the site?

Were the shacks used as an occupation site as well as for creative pursuits?

Special Research Requirements. A National Register nomination has been completed by the Massachusetts Historical Commission in Boston. This document should be reviewed prior to any research. References to the site may be found in the works of many of the inhabitants.

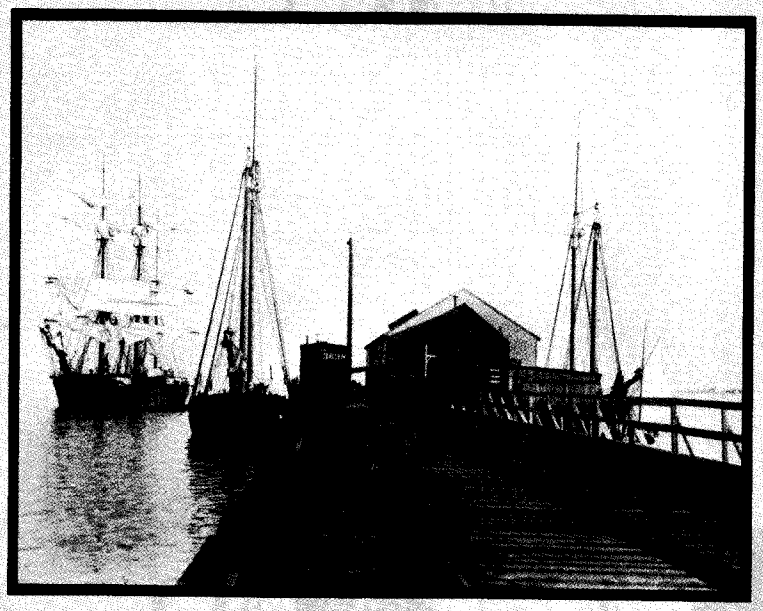
Chapter VIII

TRANSPORTATION AND COMMUNICATION

A Note on Sources

Chronology

Archeological Implications



Transportation on the Lower Cape has been marked not by gradual improvements, but by radical changes. Water transportation, once the principal means of transportation on the Lower Cape, was almost eliminated by railroads (Figure 69). Improved highways and automobiles in turn replaced trains. In the twentieth century, boat service was revived and air connections to Provincetown were established. Both, however, failed to replace the automobile as the dominant mode of transportation.

Closely tied to transportation is communication. Mail has been carried by boats, post-riders, stages, railroads, and trucks. Although telegraphs antedate railroads on the Lower Cape, telegraph wires were strung next to railroad tracks, since the railroad was the biggest user of telegraphy in the late nineteenth century.

Improvements in transportation, and to a lesser extent communication, have had an enormous influence on development on the Lower Cape because of the area's isolation. Far from population centers around Boston, Salem, or Newport, the Lower Cape was dependent on transportation for buying and selling goods. It took days of arduous travel to reach Boston by stage; the soft, porous soils of the Cape made land journeys difficult. Water transportation was more important for the Lower Cape, but storms and winter weather often cut off access even from Plymouth.

It took days of arduous travel to reach Boston by stage; the soft, porous soils of the Cape made land journeys difficult.

Not until the coming of the railroad was there a reliable link to land beyond the Cape. Weather conditions on the Cape, however, hindered railroads as well: "A real North-east gale, blowing a mile a minute, carrying not only the snow but the sand sucked from the Cape itself, and half sleeting at the same time is not an enjoyable thing to face, nor does it tend to make train operation easy" (**Fisher 1919**:36).

One consequence of the growth of the railroads was that it became possible to carry fresh fish on ice to market. Trains also gave Cape farmers an advantage in selling their perishable crops, like strawberries. Milk and eggs were other agricultural commodities whose sale was aided by rail service. Later, passenger rail traffic became the mainstay of tourism; this declined only after automobiles and paved highways supplanted the railroad.

A Note on Sources

Primary sources of particular importance for the study of this context are historic maps. Although details of internal improvements such as roads and wharves are not always shown, they can give some indication of where one can infer the location of roads or cart paths. The comparison of maps of the same region over time is invaluable in plotting changes in transportation routes and settlement patterns. Among the maps to look at are 1795 and 1831 town plans in the Massachusetts Archives, U.S. Coast Survey (USCS) maps from the 1830s to 1850s, the 1858 Walling map, the Walker atlases, and USGS maps. Those maps reproduced in this volume are cited in the text that follows.

Travel accounts are important for tracing highways in existence and for learning about the conditions of roads and accommodations. Among these accounts are those of **Timothy Dwight** (1822, about a journey in 1800), **Edward Augustus Kendall** (1809), and **Henry David Thoreau** (1962 [1855 and 1857] and 1988 [1865], about travels in 1849, 1850, and 1855). Gazetteers such as **Barber** (1839), **Hayward** (1846), and **Nason** (1874, 1890) are also useful for this purpose; sometimes woodcut drawings are included in these works, providing a contemporary view of structures, roads, and landscapes.

Another important category of primary sources are public documents such as town records and deeds, which may refer to roads. Land transactions prior to 1827 are difficult to trace, however, because of a fire in the Barnstable County Courthouse that year; fires have also damaged the Provincetown Town Hall and its documents. This project did not examine primary sources, so these documents have not been extensively surveyed. Some towns do have historic road information available at town halls; this is apparently the case with Wellfleet (**D. Echeverria 1994,** personal communication).

Hershey's (1962) monograph on Cape Cod's roads uses town records extensively. It is essential for the student of land transportation on the Cape. A set of USGS topographic maps included with Hershey's text (on file in the Cape Cod NS library in South Wellfleet) plots the course of several historic roads. Any study of this topic must take Hershey's careful work as a starting point.

Other studies contain useful summaries of the topic of transportation. Loparto and Steinitz discuss transportation and settlement patterns in different historical periods, as does Stott (**Loparto and Steinitz 1987**; **Steinitz and Loparto 1987**; **Stott 1987**). Summaries can also be found in the MHC town reconnaissance reports for the towns on the Lower Cape (**MHC 1984a, 1984b, 1984c, 1984d, 1984e, and 1984f**).

Most of the town histories written by residents of the towns repeat information without providing adequate documentation of sources. Furthermore, there is a tendency to accept uncritically received legends as historical fact. The best-known case of this is the matter of the "King's Highway" as essentially being Route 6 all the way to Provincetown, having a uniform width of 40 feet, and built at the command of King George III. This last point is an error that can be laid at the feet of Thoreau, who reported the tale (**Thoreau 1988**:68 [1865]).

A collection of brief topical histories published for the tercentenary of Barnstable County (**Trayser 1985**) discusses Cape Cod's communications, surface transportation, air transportation, maritime matters, and tourism.

As for railroads, the *History of the Old Colony Railroad* (**Old Colony Railroad 1893**), a book produced as a commercial venture by the railroad, is a valuable source on the communities served by rail, although it ought to be kept in mind that this was a promotional work published by the railroad. Another volume on the Old Colony is **C. Fisher** (1919). A general history of New England railroads is **Harlow** (1946). Controversies over the construction of railroads are sometimes referred to in town histories. Popular literature and town histories include a few reminiscences of rail travelers (e.g., **Barnard 1975**:139-140). Another work of interest on railroads of the Cape and Islands is **Farson** (1993). The **New Haven Railroad Historical Society of Fall River,** Massachusetts, reprinted a chronology of the construction and abandonment of track that was part of its system (1980). An article in *Shoreliner,* the publication of the New York, New Haven, and Hartford Historical and Technical Association, has a discussion of passenger service to the Cape after 1937 (**Rosenbaum 1986**:16-27).

Farson has also written another book, on the Cape Cod Canal (1987). This book cites as its principal source a Ph.D. dissertation by **Reid** (1958), a version of which has been published (1961). Both of Farson's books have bibliographies that include titles of works on railroads, steamboats, canals, and early studies of the Cape Cod Canal. **Covell** (1947) prepared a short history of the Fall River Line.

For more recent developments, including civil aviation, newspaper accounts would be the most easily accessible documents for researchers.

As for communication, a brief work on the story of the French Cable Station has been published by the French Cable Station Museum in Orleans (**Darling 1988**). Marconi's activities on the Cape have been described in **Hinshaw** (1969).

Chronology

Contact, Settlement, and Colonial Periods (Before 1620 to 1775)

Water Transportation. Water transportation has been an important means of travel to and from the Cape, as well as between places on the Cape, from settlement to the late nineteenth century. The first contact between Europeans and Native Americans on the Cape was the result of seaborne traffic. Although accounts of early seventeenth-century explorers can provide information on landfalls and Native American settlements, little can be said about the effects of these forays on the landscape of the Cape. Leaving few, if any, traces on the land, these voyages nonetheless changed the lives of the native populations. They also provided some names still used on the land—"New England," named by John Smith, and "Cape Cod," named by Bartholomew Gosnold (**Hatch 1951**:7-20; **Kittredge 1987**:13-26; **Rich 1988**:34-52 [1883]; **Rouse 1959**:89-92).

Water routes were also used by the Pilgrims in their explorations of the Cape for a suitable settlement. Subsequent residents of the Plymouth Colony came to see the Cape as a resource accessible by water. Since no permanent settlements were established on the Lower Cape until 1644 in Eastham, it is not likely that any structures related to sea travel were constructed before this date. Even after the establishment of permanent European residence, alteration of waterways and the shorelines was probably minimal in the seventeenth and early eighteenth centuries. Any archeological evidence of early water travel to the Cape would be rare and valuable.

Trails. Native Americans had established overland routes between settlement areas, and from settlements to places where they could acquire resources, such as marshes, shellfish beds, and fresh water. It is possible to predict the location of trails on the basis of early reports of persons being sighted on the shore (e.g., *Mourt's Relation,* [**Heath 1963**:36-37 on the first encounter), or the location of known Contact-Period archeological sites (of which there are at least eight on the Lower Cape [**Loparto and Steinitz 1987**:64; **MHC site files**]).

When studying trails, it should be remembered that trails need not have been permanent, and that they probably had little effect on the landscape. Consequently, few traces of trails can be expected in the archeological record. Also, one must guard against the modern bias that values efficiency above all else; the route Native American populations took from place to place might not have been the fastest or easiest from a modern point of view.

A further complication in tracing old trails is that the landscape of the Cape has changed through time; not only has the shoreline changed, but inlets have become silted and marshy, sand dunes have shifted, and deforestation has taken place. Any putative trail routes must take into account the altered topography.

Two trails from Provincetown to the Orleans area may have existed, with one following the coastline on the bay side, and the other on the eastern side of the Cape, skirting Nauset Marsh (**Loparto and Steinitz 1987**:57).

Roads. A sensible word of caution has been sounded by **Hershey** (1962:13-14). Modern readers think of a "road" as a substantial and long-lasting part of the landscape. Even more, the word "highway" connotes size and significance. In the Settlement and Colonial periods (i.e., before 1620 to 1775) a "highway" meant the route between two places, a right to pass over a parcel of land, and, less often, a work of construction. Furthermore, the width of a highway recorded in town documents was not necessarily the actual size of the road or adjacent cleared area; the width referred to a right-of-way, not a road surface. Finally, roads were

fenced, allowing landowners to graze animals; a gate across the road provided access to travelers crossing the land on the "highway." An example of this from Truro was provided by Rich and is cited by Hershey: in 1703 the proprietors of Pamet permitted John Snow to fence a road as long as he maintained easy gates for horses and carts to pass at all times (**Hershey 1962**:14; **Rich 1988**:92 [1883]).

Having said this, it is not that surprising that no "roads" appear on the earliest maps of the Lower Cape, even though people lived there. For example, a map drawn by Captain Cyprian Southack in 1717 (Figure 16) showed settlements but no established roads, and a 1729 postal map also indicated that there were no roads.

Roads did, however, exist on the Lower Cape in the seventeenth century. As noted above, Hershey has examined town records and found references to roads in the first records of Eastham. He reports that by 1668 a road in Eastham was laid out following the course of a previously existing "way." A road from Eastham to Chatham was noted in town meeting minutes of 1698, and in 1715 a proprietors' meeting in Truro agreed to have a highway laid out from Eastham to Truro and on to what is today Provincetown (**Hershey 1962**:18-19, 21). Supposedly, "the County Road," also called "the King's Highway," extended to Truro by 1720 and reached Provincetown by 1727 (**Loparto and Steinitz 1987**:80).

In 1721, a road 40 feet wide was authorized by the Eastham town meeting. It was stipulated that the road follow the "common traveling way" and be called "the King's Highway and common road through the town of Eastham" (**cited by Hershey 1962**:22). Hershey states that the name King's Highway first referred to a road from Plymouth to the Cape; he further contends that this road was composed of existing roads (**Echeverria 1991**:25, 42-43; **Hershey 1962**:49).

While there are definite references to the King's Road in eighteenth-century records of Orleans and Eastham, the road was not built by royal decree, much less one from King George III, whose reign began long after the first records of it. Although the road was under county control, the towns it passed through could select the route it would take. According to Hershey, the main road shown on maps of the 1795 series was the King's Highway whatever it might be labeled. The highway is located on modern USGS maps on only the Orleans and Wellfleet quadrangles, even though the name appears on the North Truro quadrangle as well. On the North Truro quadrangle, the northern portion of the roadway labeled the King's Highway may be part of another road called the "Tashmuit Highway," which was ordered laid out in 1700, and may have been simply a passageway between lots that was later fenced in (**Hershey 1962**:33-36, 60-61).

The use of the name King's Highway does, therefore, have an historical basis, but the nature of the early highway, the origin of the term, and its location are not beyond dispute. Writers of town histories in the late nineteenth and early twentieth centuries tended to glorify their communities, and they often embellished their accounts and descriptions. Use of the name was given a boost in 1920, when the Massachusetts General Court adopted a resolution officially calling the Cape Cod portion of Route 6 the King's Highway. For whatever reasons, towns objected to this title and engaged in arguments on the subject. This controversy ended in 1937, when the state changed the name to "The Grand Army of the Republic Highway" (**Berger 1985**:3-4).

Other roads were laid out within towns. In Truro, the "Drift Highway" ran from the west side of the Cape to the Head of Pamet on the east (**Deyo 1890**:925). Hershey suggested that the name "drift" referred to a highway that changed courses through the woods. The 1703 records of the proprietors' meeting that established this road spoke of "a drift highway," suggesting that the name was actually a generic term (**Hershey 1962**:32; **Rich 1988**:90 [1883]). Secondary roads were also built, particularly up to 1740, after which roads are not prominent in town records until the American Revolution (**Hershey 1962**:24).

Table 45 is a summary of map evidence of roads at this time compiled by Hershey. Not all of these maps were available for re-examination. Those that have been are identified with an asterisk. Information on the unavailable maps is taken from Hershey. Maps that do not include a portion of the National Seashore have not been reproduced for this report; those that have been reproduced are indicated in the List of Figures.

Maps accompany Hershey's text; on these he has plotted the location of roads and place names on the basis of his research. For this period, he locates a "cartway" from 1681 leading from Harwich to Orleans Center, approximating Route 6A; it follows the course of Route 6 to the Salt Pond area of Eastham, where it continued to the northeast to "Indian Brook" (Hatches Creek).

Federal Period (1775-1830)

Roads. In addition to attempting to locate roads, students of the subject should consider the nature of roads on the Cape up to the mid-nineteenth century. Travelers' descriptions were uniform in their depiction of poor-quality, often impassible roads. "A Description and History of Eastham" said, "The county road from Harwich to Wellfleet passes over the barren lands; and conveys to strangers...a worse opinion of Eastham than it deserves." It continued with a discussion of one of two roads that split off from the road to Eastham: "...in favor of the other [road] nothing can be said, except that it is the shortest, and that it is not as bad as the roads of Wellfleet" (**J. Freeman 1802**:158).

In 1800, Timothy Dwight traveled from Orleans to Eastham and noted that the road he took passed through a forest of low oaks and pines. The journey here was "unpleasant," and the road "became within a few miles a mere bed of deep sand, through which our horses moved with excessive difficulty." He wrote that the road passed so far to the "right" (i.e., east) of Wellfleet that the town was not visible; a connecting road linked the town to the main road. From Truro to Provincetown, Dwight's route lay "chiefly on the margin of a beach, which unites it with Truro." He continues, "The road, except when the tide has declined, lies along the South-Western margin of the beach in a mass of sand, through which a horse wades with excessive fatigue," but when the tide had fallen, "a path is furnished by that part of the beach which has been washed, better in our opinion, than almost any we had found..." (**Dwight 1822**:89, 90, 95).

Another traveler of the period, Edward Augustus Kendall, had thoughts similar to those of Dwight. The roads were "sandy excavations...on the sides of hills." Next to a salt marsh, the road "lies along its edge, and is more or less commodious as the tide is higher or lower." Not only were the roads poor, they were not frequently used. In Wellfleet, "on this road, which is no thoroughfare, the appearance of a stranger is a little remarkable." Kendall's "journey to Provincetown occasioned some speculation, not only in Wellfleet, but in the towns below" (**Kendall 1809**:144, 148-149, 156).

Map evidence of roads on the Lower Cape is presented in Table 46; some of the data was compiled by Hershey (1962:128, 133-134), and the rest comes from examination of the original maps (particularly those in the Massachusetts Archives) and material on file with the MHC.

Water Transportation. Coastal traffic to Provincetown and Wellfleet provided access to Boston by sea in the seventeenth and eighteenth centuries. After the American Revolution, regular packet service was established between Boston and Orleans, Wellfleet, and Truro; this service was halted during the War of 1812 (**Loparto and Steinitz 1987**:96; **MHC 1984f**:9).

In 1804, a small canal was cut from Boat Meadow to Town Cove, crossing Orleans and Eastham and connecting the bay with the ocean. Known as "Jeremiah's Gutter," it was used during the War of 1812 by those seeking to avoid the British blockade (**Lowe 1968**:35). A corporation called the Eastham and Orleans Canal Proprietors was formed around this time in order to construct a permanent canal, but the canal was never built (**Kittredge 1987**:295). Even if it had been built, ships would still have had to navigate dangerous waters in the Atlantic off the Cape.

Communications. Early communication on the Lower Cape was tied to transportation. Mail was carried by post-riders in the late eighteenth century. "Before the Revolution, letters had come and gone in the pockets of chance travelers, but in 1792 the Government took charge of the mail" (**Kittredge 1987**:156-157). A rider made one round-trip each week between Boston and Barnstable to carry mail. Five years later the route was extended to Truro. There was an increase in the frequency of mail runs during the nineteenth century. Stagecoaches also delivered mail until the railroad became the main transporter for the post offices of the Cape.

Early Industrial Period (1830-1870)

Roads. Roads other than the main highway remained poor. A description of the street in Provincetown in 1839 said that it "is narrow, irregular, and has scarcely the appearance of being a carriage road" (**Barber 1839**:50-51). Henry David Thoreau was advised that the road from Orleans to Provincetown was "bad enough" and that a "horse would sink in up to the fetlocks there." He described the scraping of the wheels of a stagecoach on shrubbery growing on the sides of the "mere cart-track in the sand," and "shuddered at the thought of living there and taking our afternoon walks." Thoreau wrote that residents maintained roads by digging up sods full of roots, laying them in the roadway with the root-side up, spreading brush over the sand on each side of the road for about 6 feet, planting beach grass in regular rows, and sticking a fence of brush against the hollows (**Thoreau 1988**:24, 106-107, 163 [1865]). Such a road was probably very impermanent, even if the same route were followed over and over again. Furthermore, shifting sands may have required changes in the route. The archeological record would probably not retain evidence of highways such as these.

Henry David Thoreau was advised that the road from Orleans to Provincetown was "bad enough" and that a "horse would sink in up to the fetlocks there."

Modifications of the landscape that affected transportation included regular sand removal and the planting of beach grass as well as larger projects. Among the latter was the building of a bridge across the mouth of East Harbor in Truro in 1855; this was done to alleviate traffic on the beach, which kept grasses from securing sand that was being swept into Provincetown Harbor. A more dramatic effort in this vein was the construction of a dike in 1868 (**Kittredge 1987**:161-162). Solid land was thus built up, and the area was subsequently used for the railroad bed and Route 6.

The infrequent incidence of travel on the roads of the Lower Cape account for the absence of any turnpikes (**Loparto and Steinitz 1987**:96; **F. Wood 1919**). Regular stage service was in place by 1830, with daily runs to Orleans from the west, and trips from Orleans to Provincetown every other day; wagons carried perhaps two or three passengers at a time (**Hershey 1962**:71; **Lowe 1968**:37). The

Chatham stagecoach delivered mail and passengers until 1872; Quinn reproduces a picture of it, as well as an advertisement from 1861. This advertisement indicated that a one-way ticket from Provincetown to Boston cost $3.35, and that stages ran daily (**Quinn 1993**:71, 194).

Maps from this period are substantially better than those made previously. Road data is summarized from Hershey and other sources in Table 47.

Water Transportation (Packets). Morison wrote, "Every tidewater village between Eastport and Provincetown, and many beyond, had a packet-sloop plying to Boston" (**Morison 1921**:231). Packets were not just for passenger travel; they were the principal freight carriers. Expansion of salt production was a further impetus to increased packet service to and from the Cape. Circa 1830, the *Northern Light* made three trips between Boston and Provincetown each week from March to December. Packets were used in the summer to carry Methodists who attended camp meetings at Millennium Grove in Eastham (**Kittredge 1968**:233-237; **Lowe 1968**:37; **Rich 1988**:446 [1883]). Regular service, however, ought not to be interpreted in modern terms. The trip to Boston across Cape Cod Bay could take from six hours to two days.

"Packet lines" referred to two or more ships that were advertised as having sailings to designated ports at set schedules; at Boston, travelers from the Cape could board ships of packet lines bound for ports to the south, as well as for Liverpool and London. It is unlikely, however, that the economic condition of most Cape residents would have allowed them to take advantage of such connections (**Deyo 1890**:110-121; **Kittredge 1987**:235; **Morison 1921**:231-232).

Steam packets did not develop quickly on the New England coast. Morison called the history of Massachusetts steam navigation before 1860 one of slow improvement in coastal service (**Morison 1921**:236). The Lower Cape was particularly slow in adopting the steam packet, although there was steam packet service between Boston and Provincetown as early as 1842. In 1857, the steamer *Naushon* established runs from Boston to Provincetown and other towns on the Cape. It is important to note that these were not excursion boats taking vacationers to the Cape. Chatham had packet service from Chatham Harbor to Boston and New Bedford; there was occasional service to New York and Nantucket. The town had two steam packets daily between Stage Harbor and New Bedford. These ran from 1881 until 1887, when the Chatham Branch Railroad opened. Orleans had packets land at Rock Harbor and Town Cove, and Eastham packets landed at North Eastham. Wellfleet Harbor had several wharves where packets landed. The last packet left Wellfleet in 1871. Truro had packet service to Boston from Pamet River Harbor after 1812; although harbor facilities were improved in 1830, by the mid-nineteenth century silting had become a problem. Provincetown had steam packet service to Boston after 1842; at first it was by way of Plymouth, but direct service was later offered. Kittredge reported that packet transportation lasted beyond 1871 in Provincetown (**Kittredge 1987**:136; **MHC 1984a**:13, 16, **1984b**:11, **1984d**:12, **1984e**:9-10, **1984f**:11, 15; **Ruckstuhl 1987**:17).

In addition to the transport of goods and people, packets served to prepare young men for other maritime pursuits. "The humble, necessary packets served as a primary school for seafaring, and like all good schools, they furnished their pupils with the incentive to fare farther and reach higher, until many a youngster who began his career coiling halliards...finished on the quarter-deck of a full-rigged ship, bringing tea and silk from Penang or linseed and jute from Calcutta" (**Kittredge 1987**:131).

Archeological traces of structures related to the packets are probably limited to the wharves in harbors on the bay side of the Cape, as well as Nauset Harbor, Town Cove, and Pleasant Bay on the Atlantic side. It is interesting to note that packets could service areas without natural harbors or any infrastructure; Quinn reproduced a photograph of a packet grounded on the flats of Rock Harbor at low tide, allowing passengers to board without getting their feet wet (**Quinn 1993**:66).

Factors leading to the demise of packet traffic were the silting of harbors other than Provincetown, the general economic decline of the region, and the arrival of railroads. There was widespread economic dislocation from the shift to rail transportation. Packet owners and employees, as well as those who repaired the vessels and provided sails, rigging, and other goods, all suffered from the decline of packet transportation (**Kittredge 1987**:154-156).

Early Railroad Development. Initial railroad development on the Cape did not change the land and water routes to the Lower Cape towns. The first tracks of the Cape Cod Railroad ended at Sandwich in 1848; in 1850, the Cape Cod Branch Railroad was chartered to build a line from Sandwich to Hyannis, but there were financial difficulties and a controversy over the route. The railroad was extended to Yarmouth in 1854. In 1864, the Cape Cod Central Railroad connected Yarmouth and Orleans. Residents of the Cape did not universally welcome the railroad, because it would take business away from the coasting trade of packets (**Harlow 1946**:226).

Late Industrial Period (1870-1915)

The Impact of the Railroad. The Cape Cod Railroad reached Wellfleet in 1870 and Provincetown in 1873. Between 1872 and 1895, additional lines to other parts of the Cape were linked with the route to the Lower Cape. In

1872, the Cape Cod Railroad was combined with the Old Colony Railroad to form the Cape Cod Division of the Old Colony Railroad (**Harlow 1946**:227; **Loparto and Steinitz 1987**:111, 129-130).

When completed, the rail line had stations at Orleans, Eastham, North Eastham, South Wellfleet, Dog Town (between South Wellfleet and Wellfleet), Billingsgate, Wellfleet, Fresh Brook Village, Painesville, South Truro, Truro, North Truro, and Provincetown (**Old Colony Railroad 1893**:399-403). Chatham was connected to the railroad system on the Cape by the Chatham Branch Railroad in 1887 (**Loparto and Steinitz 1987**:130). The route of the railroad can be found on modern USGS topographic maps and historic maps (Figures 3-12).

Even though the distance traveled by rail was greater than that by sea (e.g., Provincetown to Boston by land is 116 miles, compared to 50 miles by water), trains were faster and less vulnerable to weather conditions and seasonal interruptions than were packet boats.

The speed and dependability of rail service made it possible to ship fresh agricultural produce from farms on the Cape to markets that were previously inaccessible (**Lowe 1968**:42). The production of milk, eggs, and specialty vegetables increased in the late nineteenth century as the amounts of grain produced dropped. This shift in production was closely related to the developments in rail transportation.

Just as farming was affected by the railroad, so were maritime industries. Fresh and frozen fish from Provincetown could be transported quickly by rail; this was an important factor in expanding and diversifying the fishing industry's markets. For example, fish that did not salt well, such as whiting, were shipped frozen to the coal mining towns of Pennsylvania, and other fish that were not usually salted, such as flounder, were marketed in Boston.

The Old Colony Railroad held out the promise of making Provincetown a major port for the shipment of goods from the West to Europe (**Nason 1874**:423). This potential, however, was never realized. In fact, the railroad contributed to the decline of economic activity related to packet travel and outfitting.

The railroad's infrastructure also had some consequences for shipping. In Wellfleet, for example, the railroad embankment built across the upper part of Duck Creek isolated a previously useful harbor, and deprived ships of an anchorage (Figure 41). A similar situation existed at Pamet River Harbor, where the railroad embankment was built across the Pamet River at Truro Village (Figure 43). In Provincetown, the railroad crossed over the entrance to East Harbor on a bridge. In 1877, this bridge was replaced with a solid roadway (**MHC 1984d**:15, **1984e**:13) (Figure 45).

Although structures related to railroad use were built near the tracks (e.g., water tanks and freight houses, like those pictured in Ruckstuhl [1987:39]), the railroad did not stimulate substantial settlement shifts. Within developed areas, commercial building was influenced by the placement of rail stations and lines; for example, in Provincetown the commercial focus moved to the Old Colony Wharf. Similar commercial areas also developed at depots in Orleans and Eastham (**Loparto and Steinitz 1987**:141, 144).

Before 1870, the railroad did not influence the fledgling tourist industry on the Lower Cape. Later, between 1870 and 1920, several railroad-oriented guest houses and hotels were opened (**Stott 1987**:311).

A travel service related to the railroad was the Fall River Line, owned by the Old Colony Steamboat Company. This steamship line provided access to the railroads of the Cape from New York (**Old Colony Railroad 1893**:124). Many of the travelers using this facility were vacationers coming to the Cape for recreation.

Water Transportation (Steamers). After the sail and steam packets disappeared as the principal means of transportation to and from the Cape, steam-powered vessels still plied the waters of Cape Cod Bay. In 1863, Bowley's Wharf in Provincetown was extended and renamed Steamboat Wharf. Here docked the steamer *George Shattuck*, which ran until 1874; the *Longfellow* was built for this run in 1883, and it was replaced in 1902 by the *Cape Cod* (**Kittredge 1987**:237; **Quinn 1993**:198; **Ruckstuhl 1987**:17). In addition to the steamers and the new wharf, other structures were built to accommodate those visitors who arrived by water. A livery stable in Provincetown advertised that its coaches were available to carry passengers to hotels (**Ruckstuhl 1987**:17).

Excursion boats continued to serve the interests of tourists who wanted to get to the Cape by going across the bay. These vessels were part of the development of tourism on the Cape but apparently were not important for the shipment of freight.

Communications. Communication on the Lower Cape has had two distinct aspects. One was the communication that went on within and between communities. The other was communication over a longer distance, with the Lower Cape serving as a relay station. Developments in both aspects occurred during this period.

Telegraph, and later telephone, lines followed the railroad tracks. The railroad was an important user of telecommunications, having to notify its stations quickly about traffic. Telephone lines connected the USLSS stations by 1900. Poles and lines spread throughout the towns; photographs from around 1900 show utility poles along roads (**e.g., Ruckstuhl 1987**:5).

As an outpost on the eastern seaboard and as an outlook for ships approaching Boston, the Lower Cape became an important place for long-distance communications. In 1858,

the Cape Cod Telegraph Company was incorporated. The company built a telegraph line to Boston and transmitted news of approaching ships. The next year, a competitor, the Boston and Cape Cod Marine Telegraph Company, also built a telegraph line. As soon as a ship was identified off the Cape, news of its sighting was sent to Boston (**Rich 1988**:444 [1883]).

In 1879, the *Compagnie Francaise de Cables Telegraphiques* connected the cable at St. Pierre and Miquelon to a site in Eastham. The terminus was located in Orleans in 1890. A direct cable from France was laid at Nauset Harbor in 1897-1898. Although of great importance during the two world wars, it was eventually abandoned in 1959 (**Deyo 1890**:738; **Quinn 1993**:202).

At Highland Light, the U.S. Navy Wireless Station was established in 1904. For 60 years this facility enabled ships at sea to find their locations through radio signals. The station was principally concerned with commercial shipping until World War I, when it became increasingly involved with military activities (**Berger 1985**:219-222; **Ruckstuhl 1987**:8-9).

A well-documented event of major historical significance that took place on the Cape was the first trans-Atlantic radio transmission from South Wellfleet to Britain, in January of 1903.

A well-documented event of major historical significance that took place on the Cape was the first trans-Atlantic radio transmission from South Wellfleet to Britain, in January of 1903. Guglielmo Marconi did not expect to establish a direct radio connection between Cape Cod and England when a message was sent from President Theodore Roosevelt to King Edward VII. A good picture of it is illustrated in **Ruckstuhl** (1987:1). The station was abandoned and its towers dismantled in 1920. Its location has greatly eroded over the years, but it is well marked and interpreted at the Cape Cod National Seashore.

Early Modern Period (1915-1940) and After

Changes in Rail Service and the Development of Improved Roads. This period witnessed the decline of rail service and the concomitant rise of the automobile as the principal means of transportation. Passenger rail service continued to Provincetown until 1938, although it was revived just for the year 1940. Passenger service did not, however, disappear from the Cape at this time. One author actually describes an expansion of passenger service between New York and the Cape that began in 1937; this service only reached Hyannis, at which point passengers could make bus connections for Lower Cape destinations. From 1939 to 1942, one named train, *The Islander*, ran on weekends to Woods Hole. Other named trains that made scheduled runs were the day and overnight *Cape Codder* and the weekend *Neptune*. No through-service was provided from Boston to the Cape. Direct rail passenger service to the Cape finally ended in 1964, although there has been seasonal weekend service in recent years (**G.F. Ackerman 1993**: personal communication; **Rosenbaum 1986**:16-27).

The first section of track on the Cape to be abandoned, in 1937, was the most recently constructed: the Chatham Branch Railroad. Lower Cape tracks were not used after 1940 for regular service; rails beyond North Eastham were removed in 1960, and those east of Dennis in 1967 (**Lowe 1968**:39). Recently portions of the railroad bed on the Lower Cape have become a bicycle path. Tracks remain in the western portion of the Cape, and in 1993, the only freight carried is rubbish being removed.

Decline of passenger train service was the result of the last major shift in transportation on the Cape. It started with the establishment of U.S. highways in the 1920s and the increasing importance of the automobile. To accommodate the new level of traffic, town roads were improved. For example, in Truro, clay roadways were paved; the first tar roads came in 1913 (**Marshall 1974**:9, 13).

Route 6 became the principal highway for the region. With the construction of new bridges across the Cape Cod Canal in 1935, automobile traffic from the mainland to the Cape became significantly easier. In the 1950s, state highway planners intended to have a four-lane highway extending from the Sagamore Bridge to the rotary in Orleans; construction, however, ceased, and a 13-mile stretch of two-lane highway extends from Route 134 in Dennis to the rotary in Orleans (**Massachusetts Senate Committee on Post Audit and Oversight 1988**). The greatest impact of this incomplete highway project was the increase in travel time to the Lower Cape.

Automobiles stimulated construction, creating corridors of commerce along highways and connecting roads. Motor courts (later called motels) became a prominent feature of the landscape of the Cape. The creation of seasonal businesses catering to tourists increased commercial activity, and shifted the economic base of the community to recreation.

Although automobiles have been the major form of transportation from the 1940s to the present, air service has played a role since the 1930s, when an airport was established in Provincetown. Commercial air service began in 1946. Elsewhere on the Cape, Barnstable Airport provided air connections. Crashes of Cape aircraft in 1957 and 1958 were widely publicized, and railroad advertising of the time emphasized that trains were safer than planes (**Rosenbaum 1986**).

Thoreau concluded his observations of the Cape by saying, "At the present it is wholly unknown to the fashionable world, and probably it will never be agreeable to them," but the "time must come when this coast will be a place of resort for those New-Englanders who really wish to visit the sea-side" (**Thoreau 1988**:214 [1865]). The isolation of the Lower Cape has been brought to an end, due, in part, to the advent of automobiles and improved highways.

Archeological Implications

Archeological evidence of transportation is limited because of the reuse of road and railroad routes as these systems developed and were modernized. The packet transportation system was important economically, but required little in the way of infrastructure. As with highways, wharves and piers were reused or expanded. Features most likely to be encountered archeologically include early roadbeds in undeveloped or abandoned areas, railroad support facilities, and communications facilities.

Trails

Archeological Record and Considerations. Native American trails often were used as routes for early European roads, but are difficult to detect archeologically because of historical development. Because these paths were reused, evidence of early use is limited to trailside margins that contain Native American or European camping sites associated with use of the trail.

Trails followed topography that was different from today, because of erosion. Early maps may be useful in this regard to locate trail connection points and logical routes.

Areas surrounding crossroads may contain evidence of camps, transfer stations, etc., related to trail use.

Research Questions. Are there portions of the early trail system that are intact archeologically? These would exist in areas not further developed by road or railroad construction.

How were the early trails used, and what was transported on them?

Special Research Requirements. Historic maps are important indicators of early trails. Town reports prepared by the Massachusetts Historical Commission, as well as map files contained in the MHC archives, are a useful source of information concerning trails.

Early Water Transportation Packets and Steamers

Packets were an important means of transport in the eighteenth and nineteenth centuries. Steamers became important in the nineteenth century. Shipping is discussed in Chapter 4, "Maritime Life."

Roads

Early roads were of extremely poor quality on the Cape because of the sandy soil. During much of the early period, most shipping and passenger transportation used packets. Roads were not an important part of the transportation system until after the development of railroads.

Archeological Record and Considerations. Surveyors' maps, town records, and deeds are the most important locational sources.

Early roads were poorly constructed, temporary in nature, and because of shifting sands, difficult to locate archeologically.

Abandoned roadbeds in undeveloped areas still may be visible as linear depressions. Locations may occur along the sides of hills, often on high and dry ground.

The remains of corduroy roads are detectable if log surfaces were left in place. The Cape is well known for frugal reuse of wooden materials, but the condition of wooden pavements may have limited their utility.

Research Questions. In what way, and in response to what economic factors, did the secondary and tertiary road systems develop?

What is the archeological evidence of early roadbeds? This may be answered by examining roads in known abandoned communities such as Camp Wellfleet.

Special Research Considerations. Documentary records are the most productive sources of information concerning the location of early roads. These include Barnstable County records, individual town records, postal records, and historic maps.

Railroads

Archeological Record and Considerations. Railroad stations existed in at least 13 places locations from Orleans to Provincetown. These can be found on historic maps of the area.

Abandoned station foundations, loading platforms, foundations of freight facilities, water tank bases, and towers can be detected archeologically. Wooden materials would have been removed for reuse elsewhere.

Coal (especially large chunks of anthracite), steel spikes, barrel hoops, and nails are perhaps the most abundant cultural materials evident in sites related to railroad use. Many artifacts are steel, so cultural deposits containing these could by located through magnetometry or metal detectors.

Workers' camps were located intermittently along the rail line, generally in level areas nearest the rail line. Archeological evidence of living shelters consists of shallow depressions associated with temporary structures resting on wood sills.

Early railbeds are still followed today and have been upgraded periodically. This construction would have eliminated much of the early structures.

Research Questions. Are the effects of the railroad's blockage of the Duck Creek anchorage and Pamet River harbor evident in the archeological record?

Are workers' camps detectable along the railway?

Infrastructure. The infrastructure related to the railroad would have included the station and freight complexes, access roads from communities and industries to these complexes, telegraph systems, and—in the latter part of the nineteenth century—electrical lines. The railroad often required a built-up, berm-like roadbed.

Special Research Considerations. Documentary records are a productive source of information concerning the existence of railroad components. Historic maps show in particular the location of rail lines and stations.

Communication Systems

Early communication systems included the telegraph, which used roads or rail right-of-ways for their lines. The telephone was introduced in 1900, initially connecting the lifesaving stations, but ultimately connecting communities and individual structures via roads. The transatlantic cable reached Nauset Harbor in 1898. The first wireless telegraph complex was established in 1903.

The earliest telegraph lines were placed along roadways. For the most part, telegraph poles would have been removed to make room for new poles. There are exceptions such as on Long Point, Provincetown, where telegraph poles of the 1920s are presently being removed by the National Park Service.

Remains of the telegraph station that burned in 1891 may exist in Eastham.

Facilities of the telegraph cable laid from Nauset Harbor to France may be evident. This facility was important during the two world wars. The remains may include radio shacks and outbuildings, outgoing transmission lines (probably only evident as post molds), and access roads.

Portions of the facilities of the 1904 U.S. Navy Wireless Station at Highland Light may be evident. Remains may include bases of antenna towers, bases for guy wires, radio shacks and outbuildings, utility lines, and access roads.

Facilities of the Marconi Station are maintained at the Cape Cod National Seashore. Remains of the facilities consist of foundations for the radio tower and guy wires, utility lines, and access roads.

Research Questions. Are early telegraph stations and relay stations still detectable archeologically? This would require historical background research to locate them.

Infrastructure. The infrastructure related to the telegraph system would have included the station and pole systems. The latter were generally located along roadways and railroad right-of-ways. The telegraph was an important link to the railroad system. The location of the telephone right-of-way was similar to that of the telegraph. Access roads and electrical transmission lines were an important part of the infrastructure of communications complexes.

Special Research Considerations. Records of the Cape Cod Telegraph Company and the Boston and Cape Cod Marine Telegraph Company would be useful in understanding the nature and location of telegraph facilities, and the manner in which they operated.

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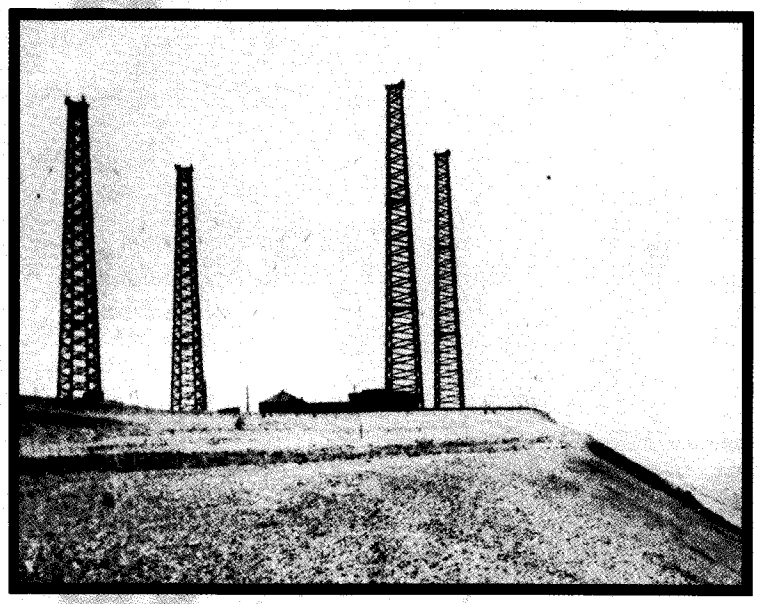

Repositories of lesser-known or rare works are listed as follows:

CACO = Headquarters Library, Cape Cod National Seashore, South Wellfleet, Massachusetts

CCSP = Salt Pond Visitors' Center, Cape Cod National Seashore, Eastham, Massachusetts

CCCC = Nickerson Room, Cape Cod Community College, Barnstable

CPL = Eldredge Public Library, Chatham

EPL = Eastham Public Library, Eastham

MA = Massachusetts Archives, Boston

MHC = Massachusetts Historical Commission, Boston

MHS = Massachusetts Historical Society, Boston

PPL = Provincetown Public Library, Provincetown

UM = Library of the University of Massachusetts, Amherst

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APPENDICES

Appendix A. Archeological Implications

Appendix B. Town and Population Charts

TABLES

FIGURES

TIME PERIOD	ARTIFACTS	SOIL MODIFICATIONS/ STRATIGRAPHY	ARCHEOLOGICAL FEATURES
NATIVE AMERICAN SETTLEMENTS			
Post-Contact	Native American lithics and pottery in early years. European items such as brass and copper kettles and cook ware, trade items, basketry mixed with Native materials.	Little modification of soils agriculturally. Slash and burn methods. Excavation of storage pits, burials. Small insignificant impacts from habitation structures. Storage pits evident even in plowed areas. Evidence of burning in A horizons.	Wigwams, fire hearths, storage pits, fire pits, corn mounds, post molds from structures and supports.
Seventeenth century	Increased frequency of European tools and cooking implements. Artifact assemblage becomes difficult to distinguish from European American.	Agricultural impacts. Perhaps European American plowing practices. Horizontal stratigraphy based upon scattered habitations around a small central area containing meeting house, school and cemetery.	Formal reservations include a meetinghouse, school and cemetery. Cemeteries of victims of epidemics. Residences like European American. Fences uncommon due to low reliance on livestock.
Eighteenth and nineteenth centuries	Difficult to distinguish from European American materials. Mixture of artifacts related to other pursuits such as maritime activities, salt-making, etc.	Agricultural impacts. Horizontal stratigraphy based upon scattered and increasingly isolated habitations.	Continuation of cemeteries with victims of disease. Declining numbers of burials overall as population declines. Increase in burials of Native American war veterans.

STRUCTURES	ENVIRONMENTAL INDICATIONS	LOCATION/TERRAIN/ LANDFORM	RESEARCH CONSIDERATIONS/ NOTES
Wigwams.	Burned fields. Habitations of well-drained soils, near water supply, especially near sheltered fishing locations.	Corn Hill, Great Hollow, Fort Hill, Nauset Harbor, Stout's Creek, East Harbor, Head of the Meadow, Pamet River, Portanomicut at Little Bay Reservation.	Primary documents research is important, especially church and probate records. Paine Papers at Harwich Museum, Burke's bibliography at Nickerson Room at Cape Cod Community College are important sources.
Small structures in the style of European American houses. Sheds.	Situated away from communities populated by European Americans.	Meeshawn, Truro; Punonakant, Wellfleet; Potanumaquut or Nauset, Eastham-Orleans; Manamoyik, Chatham; Pochet Island, Ryder's Cove, Crow's Pond, Orleans. Praying Town at Wellfleet.	Same as above.
Habitations and outbuildings similar to small European structures.	Situated away from communities populated by European Americans. Perhaps relegated to land considered undesirable by European Americans.	Communities in same general areas as later occupied by European Americans (e.g., East Harbor, Billingsgate, Monomoy, Harwich). Same as above.	

TIME PERIOD	ARTIFACTS	SOIL MODIFICATIONS/ STRATIGRAPHY	ARCHEOLOGICAL FEATURES
AGRICULTURE			
Land modification	Few artifacts are anticipated, but may consist of the remains of troughs and cribs. Burned macro-fossils should be present in burned fields.	High charcoal content. Plow zone evident in fields.	Evidence of "ha-has" (mound and trench fences), fence post molds. Stone fences where raw material is available. Barn foundations, especially subterranean bank barns.
Population/ Subsistence/ Settlement	In lower income sites a greater use of locally produced ceramics (e.g., redwares). Wealthier families expected to have more expensive wares, imported ceramics, matching sets of dinnerware and tea sets, etc. Possibly more diverse assemblages in multi-family dwellings. Occupation middens of transients contain low percentage of architectural debris.	Plow zone evident in fields, but perhaps not in immediate vicinity of structures. Plow zones in fields of asparagus production may be deep. Terrace horticulture may be evident in marginal areas associated with Portuguese farmers.	Foundations of residences and outbuildings, wells, fences, refuse pits.
MARITIME			
Early fishing communities	Artifacts associated with fishing or seasonal domestic occupation. Materials related to fishing such as net sinkers. Liquor bottles and smoking pipes common in middens. If middens have high preservation, fish heads should be common.	Minimal. Most houses brought by boat and removed seasonally. Stratigraphy is unlikely because structures were water-borne and the bay would have been used to carry away trash and offal.	Privies rare to non-existent because of proximity to bay. Wooden stakes related to fish weirs. Post molds and intact mooring bollards may be evident. Pilings.
Grand Banks fishing	Few, because fishing occurred away from the Cape.	n/a	Wharves. Possibly ship-building establishments.
Shipping	On-shore artifacts rare. Mooring eye-hooks and other similar equipment possible along shoreline, pounded into rocks, etc.	n/a	Small wharves, pilings. Large wharfs in the larger harbors.

STRUCTURES	ENVIRONMENTAL INDICATIONS	LOCATION/TERRAIN/ LANDFORM	RESEARCH CONSIDERATIONS/ NOTES
Barns and sheds.	Plow zone evident. Likely areas should be on soils that are well-drained and have suitable tilth.	Avoidance of steep slopes, but most terrain suitable.	
Residences, sheds, barns.	Topography would be varied. Ideal soils are those that have good drainage and tilth.	English preferred flat contiguous fields, but there is variation in the choice of field conditions.	
Not likely. Houses and other structures were either on floats or brought to the area by boat.	Long Point is largest reported community. Others should exist immediately adjacent the bay.	On harbor/bay.	Very low visibility because of short period of the activity and the water-borne nature of facilities.
Wharves.	Launch areas on wharves in deep-water harbors such as Provincetown.	Wharves on harbor.	Very low visibility because activities took place off-shore.
Small and large wharves.	Coastal, especially in large and small harbors. Large wharves supporting steamers were in deep water (e.g., Provincetown).	On water.	Packet shipping and its associated infrastructure is of low visibility. Large wharves may be detectable, off-shore if reuse not extensive. Associated support structures/sites may be evident.

TIME PERIOD	ARTIFACTS	SOIL MODIFICATIONS/ STRATIGRAPHY	ARCHEOLOGICAL FEATURES
INDUSTRIES			
Saltworks 1770-1845	Good wood preservation from salt. Wooden parts Of evaporation vats, hinge hardware, shovel parts, barrel staves and hardware. Nails, screws are common but little glass or domestic debris.	High salt content. Also Glauber and Epsom salts. Lingering salt content will affect plant growth, encourage haliphytes. Increased salt content should be detectable through soil chemistry tests. Little physical ground disturbance. Plow zones or A horizons largely intact with post molds detectable in the B horizon. High salt concentration.	Boiling area with hearth and charcoal. Post molds from posts used to support vats may be only foundation evidence. Evidence of post-in-ground windmills and wooden piping. In-ground trenches for wooden pipes. Remains of storage sheds.
Windmills	Very thin artifact distributions	Large pole and beam mills will have a landscaped surface overlying or cutting through natural stratigraphy.	Stone footings for windmills if not removed. Pole and wheel mills should have a ring-like area of compacted soil or ruts. Landscaped/terraced areas especially around pole and wheel mills on promontories. Mills for wells supported by posts. Post molds should be detectable. If European-style mills, structure pivots on a large central post. Large post mold and evidence of cross braces may exist.
Oil processing plants-fish	Trying tools. Iron kettles. Burned bricks. Fauna: possible fish species. Middens of seagull bones common.	Soils becomes saturated with burned soil.	Large burned areas, especially at try-yard locations. Brick pavements associated with wharves.

STRUCTURES	ENVIRONMENTAL INDICATIONS	LOCATION/TERRAIN/ LANDFORM	RESEARCH CONSIDERATIONS/ NOTES
Standing remains could include long wooden drying vats, windmills, storage sheds.	Located in open, level areas near salt water supply.	Located in coves and other locations near a source of salt water. Especially common near coast. Located near roads for transport to market. Roads less important if water source is navigable.	Low visibility. Low density. Large horizontal excavations are crucial.
Portable structures difficult to detect once removed. Small mills supported by sheds or small posts. Water- related mills supported by shed and associated with a cistern.		Located on higher elevations to maximize wind. In proximity to road for transport of product.	Very low visibility because of high portability. Sites that were excellent for mills are likely to have been developed by tourist home or resort construction. Horizontal stripping of large areas or perpendicular trenching are best methods for detection.
Low visibility, simple frame buildings and sheds. Simple or no foundation.	Blackened oil caked in soils from spills, especially in processing areas. Burned soil. Especially visible in sand dunes. Chemical tests (e.g., phosphate, mercury) useful in locating.	Located in coastal areas. Can cover large expanses. Often adjacent to navigable waterways.	High visibility in areas of sand dunes. Low visibility in wharf areas because of erosion.

TIME PERIOD	ARTIFACTS	SOIL MODIFICATIONS/ STRATIGRAPHY	ARCHEOLOGICAL FEATURES
MILITARY			
1653-1783	Cannon balls and shot. Sunken ships.	Trenches possible at fortifications and at the location of the Pond Village conflict.	Hand-excavated trenches.
War of 1812	Musket and cannon balls.	Possible hand-excavated trenches on west shore of Rock Harbor, Orleans and other harbors.	Hand-excavated trenches.
Civil War 1861-1865	Wood, metal hardware, military buttons, buckles, metal wheel rims, basket hoops, gun parts and related materials (e.g., Minie balls, locks, ramrods, cartouches, bayonets, rifle bands, brass cartridges, leather objects from uniforms, holsters, pouches, faschine knives. Domestic artifacts include cans, kettles, metal cooking pots, tripods, trammel hooks, horn-handled 3-tined forks and other cutlery, tinwares. Wine, liquor and pharmaceutical bottles. Architectural materials include nails, window-pane, brick footings.	Major modification in gun emplacement. Subsurface evidence of post molds, foundations and parts of gun emplacements may exist. Soil is sandy.	Sand mounds, bomb "proofs", magazines, platforms for guns, embankments stabilized by basketry gabions or wood, privies, post molds associated with temporary foundations, possible cellar hole associated with barracks, possible subsurface evidence of plank road between gun emplacements.
World War I 1917-1918	Artifacts not anticipated at terrestrial sites. Naval Air Station may contain artifacts related to dirigibles and seaplanes, but is outside of park boundaries.	n/a	Baseball field.
World War II 1941-1945	Camp Wellfleet: ammunition for artillery and small arms, tank and artillery parts, fragments of tow targets and aircraft, steel ammunition cases, uniform parts, metal fragments from Quonset huts, chain link fencing, electrical poles, cables, bolts, screws, nails, mortar, brick; 20th century domestic items and tools.	Trenches and "dug-outs" for camouflaging tanks and artillery pieces. Many areas will contain hazardous materials associated with motor vehicles.	Trenches, pits and "dug-outs" used to camouflage guns, tanks and people. Concrete slab foundations and piers for building supports, possibly buried utility lines, concrete bunkers, rutted roadways from tracked vehicles.

STRUCTURES	ENVIRONMENTAL INDICATIONS	LOCATION/TERRAIN/ LANDFORM	RESEARCH CONSIDERATIONS/ NOTES
n/a	Pond Village, unknown location in Truro.	Unknown.	
n/a	Rock Harbor, Orleans. Other sites possibly located near harbors.	Harbor areas.	
None standing today.	Located at strategic part of harbor to discourage entry by enemy vessels.	Located on open sand point with excellent visibility and within range of sheltered harbor.	
n/a	Level field of unknown precise location in Provincetown.	n/a	
None standing today.	n/a	Located at Marconi Visitor's Center, east side of Route 6 in South Wellfleet.	

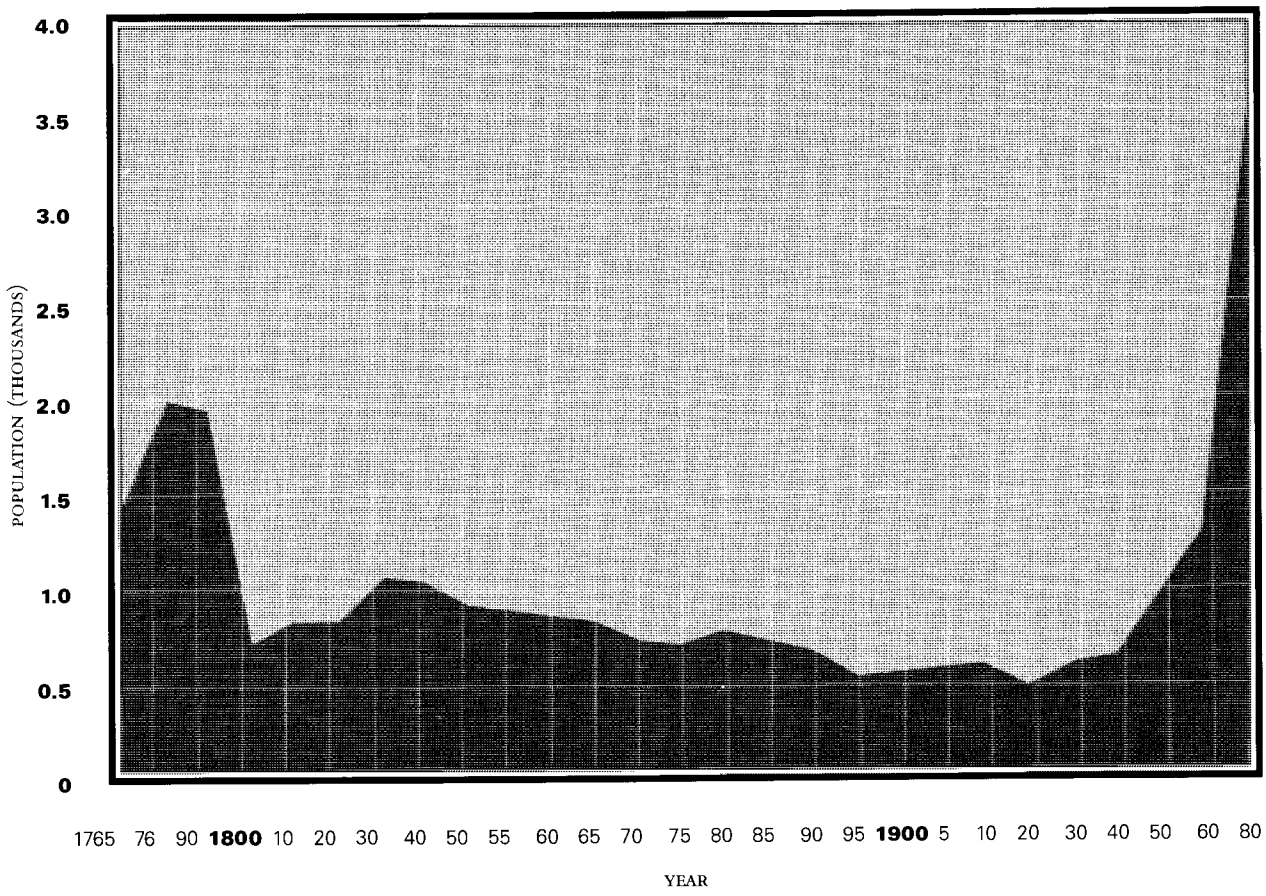
TIME PERIOD	ARTIFACTS	SOIL MODIFICATIONS/ STRATIGRAPHY	ARCHEOLOGICAL FEATURES
TOURISM			
Religious camps	Very low artifact density. Materials brought to the site by campers would be few in number and would be limited to clothing, hygiene-related implements, and small portable personal items. Heaps of clam shells in eating areas observed by Thoreau (1988[1865]).	Little modification of the soil with the exception of tents and more permanent structures. Privies or latrines may leave detectably high phosphates in the soil.	Camps typically consisted of main meeting structures used for religious activities, meals, etc. Kitchen refuse may be evident near mess halls, the remains of pumps and ovens may also be evident archeologically. Residential units may be small permanent cabins supported by piers or limited foundations. Often habitation areas consisted of tent colonies in which evidence of wooden platforms, or tent stakes and post molds may be evident in the soil. Latrines should be evident, and locatable using soil tests (e.g., phosphates). A well for drinking water should be evident possibly with preserved piping.
Inns and Taverns	Low artifact densities that are difficult to distinguish from domestic uses. The function of taverns and inns vary widely. In early taverns, artifacts related to alcohol (e.g. bottles, closures, etc.) are common. Patent medicine bottles common after the 1820s temperance inclinations.	Similar to any residential structures.	Remains of large residential structure (with foundation), some with associated windmills and outdoor privies. Large complexes have associated cottages. Buried cold storage barrels and other food preservation features common. Large stables common.
Cottage colonies	Artifacts related to domestic substance on a seasonal basis.	Landscaping minimal.	Privies, cellar holes evident. Foundations insubstantial.

STRUCTURES	ENVIRONMENTAL INDICATIONS	LOCATION/TERRAIN/ LANDFORM	RESEARCH CONSIDERATIONS/ NOTES
With the exception of central group activity structures (e.g., mess hall, chapel, latrines, etc.) and administrative residences, structures would consist of small wood cabins, often without window glass, supported by wooden or cement piers. Central community structures would have been similar in construction, but larger and perhaps more permanent. In tent areas, wooden tent platforms may have been used.	Camps were located in pleasant scenic areas near roads. Camps were within walking distance of the Atlantic Ocean or Massachusetts Bay. The Millennium Grove camp in Eastham bordered the bay.	The Methodist camp Millennium Grove had locations in Wellfleet (1819), Truro (1826), North Eastham (1828) and Yarmouth (1862).	
Generally large residential structure. Separate buildings possible for windmill, privy, cottages, stables, etc.	Generally located along main thoroughfares, especially at cross-roads.	Artifacts are extremely varied depending upon the type of tavern and its associated clientele.	
Small wood cabins of non-permanent construction. Possible privy "outhouses".	Located in scenic secluded areas.	Located in scenic, secluded areas. Dune shacks located in Provincetown, near Atlantic Ocean.	

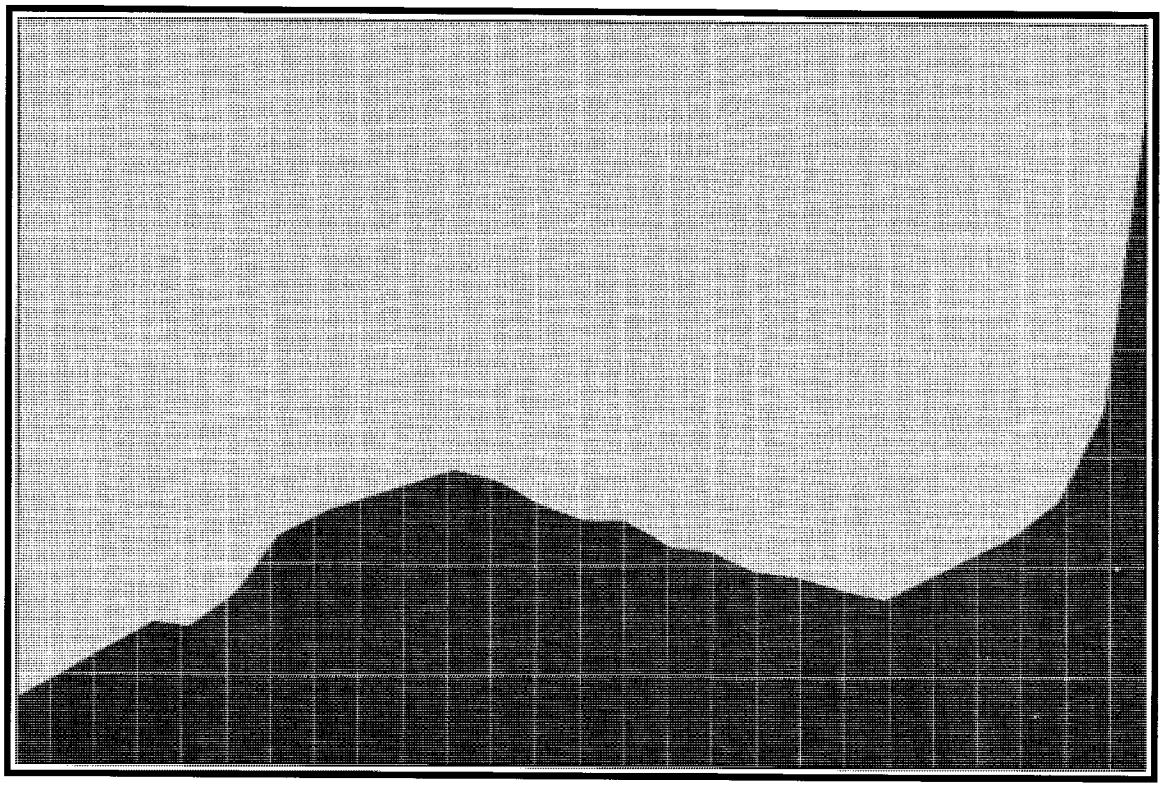
TIME PERIOD	ARTIFACTS	SOIL MODIFICATIONS/ STRATIGRAPHY	ARCHEOLOGICAL FEATURES
TRANSPORTATION			
Trails	Artifacts associated with trails are few and unlikely to be encountered. Small sites may be associated with trails.	Paths were trampled depressions at the time of use, but given reuse in historic times would be difficult to detect archeologically.	n/a
Roads	Artifacts associated with roads consist of vehicle parts and dropped material.	Abandoned roadbed depressions may be visible in undeveloped areas.	Abandoned roadbed depressions in some areas. Most roads have been in use through modern times and early traces have been obliterated.
Railroads	Artifacts associated with construction (e.g., spikes, bolts, nuts, barrels hoops, nails, ties, etc.), or use (e.g., coal, cinders, etc.). Many artifacts are steel or iron and can be located magnetically.	Railbed construction involves major land modification (cutting and filling, berm construction, etc.). Abandoned lines are easily located visually.	Level railbeds, foundations of loading platforms, freight houses, water tank bases, and signal towers, may be evident. Workers' construction camps may be evident along the rail line. Workers' camps could have ethnic significance.
Communication	Few artifacts associated with telegraph lines.	Holes excavated for telegraph poles.	Foundations of telegraph stations (e.g., burned station in Eastham). Remains of shacks, outbuildings, post molds where poles have been removed.

STRUCTURES	ENVIRONMENTAL INDICATIONS	LOCATION/TERRAIN/ LANDFORM	RESEARCH CONSIDERATIONS/ NOTES
n/a	n/a	Follow least resistance route from locus to locus. Crossroads may be the locus of transfer activity.	Early maps may be useful in locating trail routes.
n/a	n/a	n/a	Documentary records and maps are useful in located roads. Documents include Barnstable County records, postal records, maps.
Stations, loading platforms, freight houses, water towers, signal towers, junctions, etc.	n/a	Follow least resistance routes from point to point.	Documentary records, especially maps and industrial records are useful in locating rail lines and sidings.
Telegraph stations are the only substantial structures. Many were associated with railroad stations. Facilities for trans-Atlantic cable and U.S. Navy Wireless station would have been substantial, supported by foundations.	n/a	Often located along railway lines or roads.	Records of the Cape Cod Telegraph Company and the Boston and Cape Cod Marine Telegraph Company are useful sources of information.

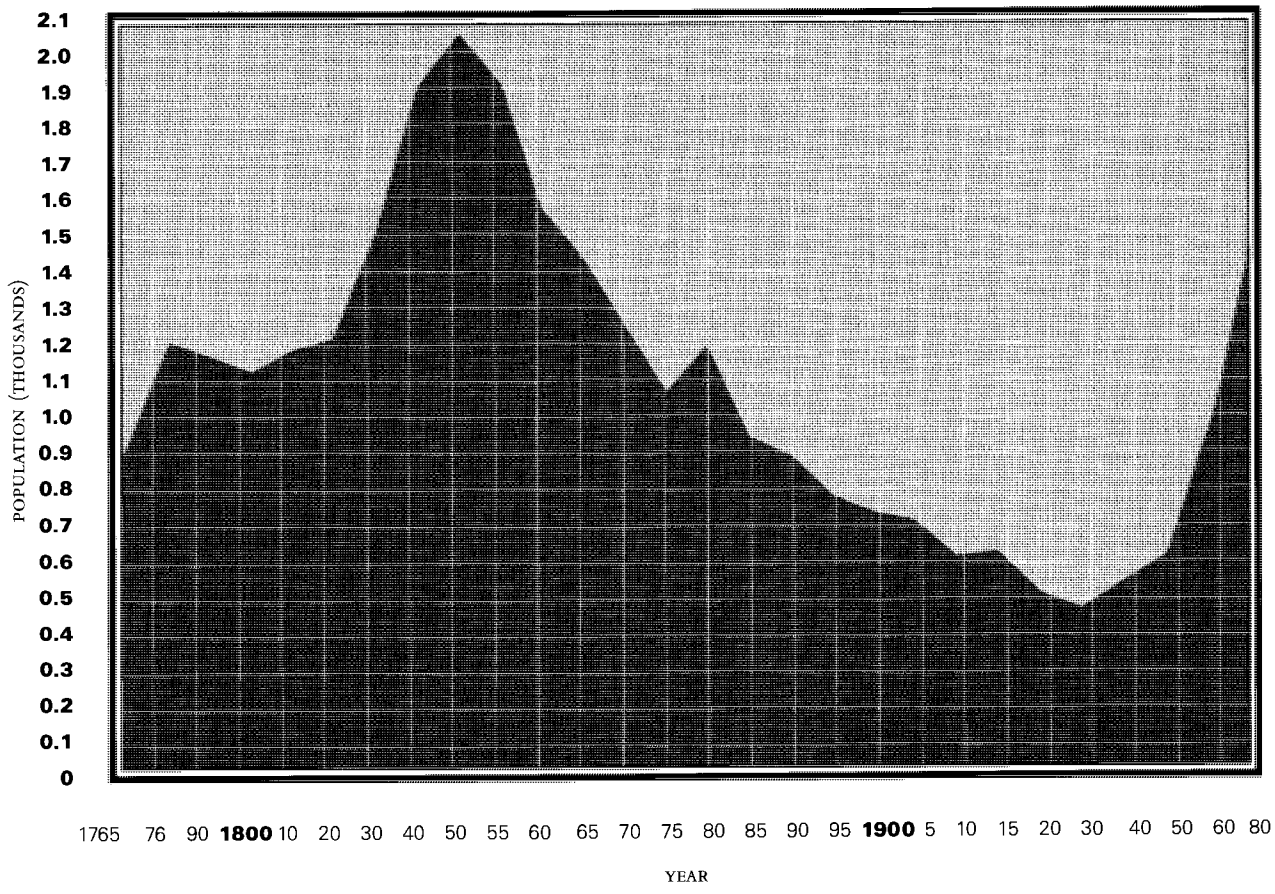
EASTHAM, MASSACHUSETTS. POPULATION. 1765–1980.



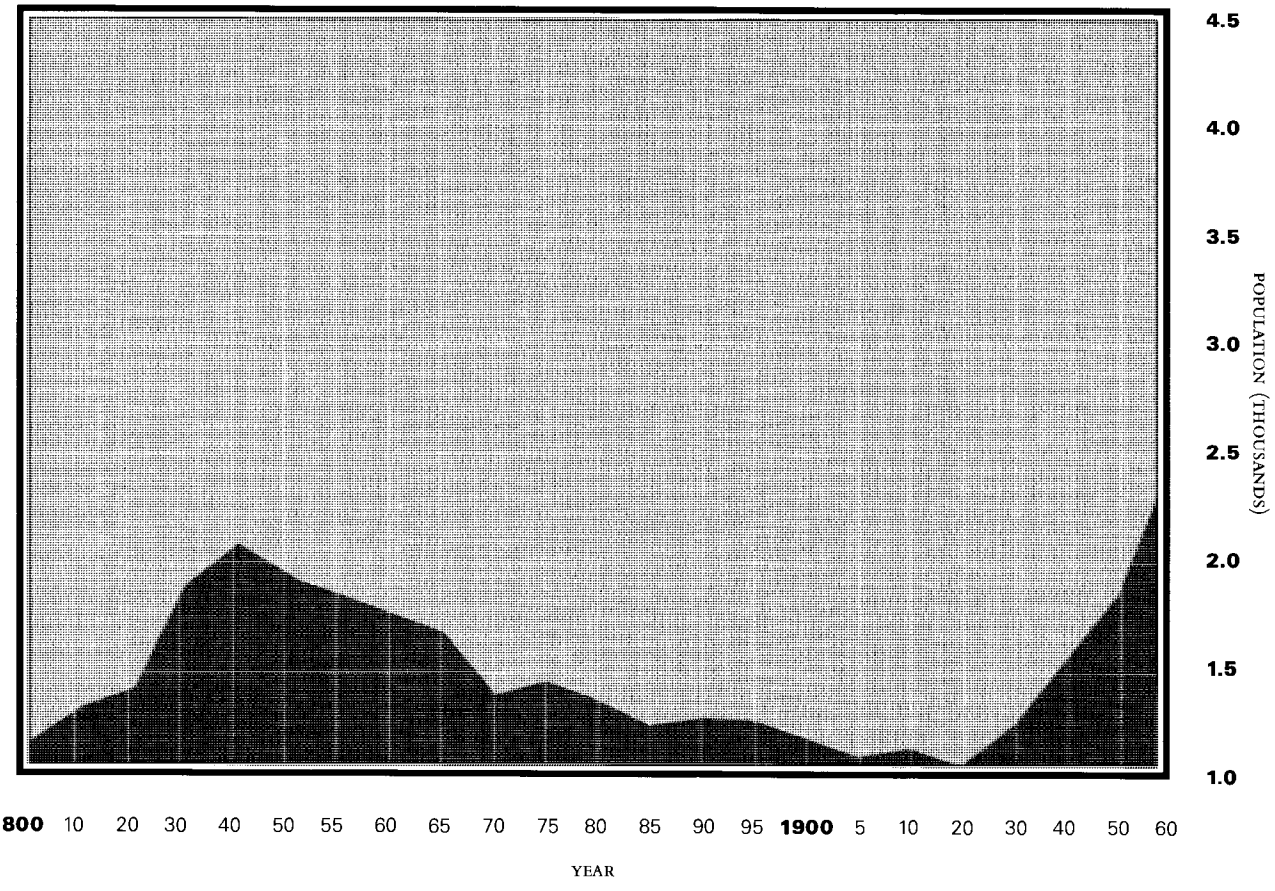
CHATHAM, MASSACHUSETTS. POPULATION. 1765–1980.



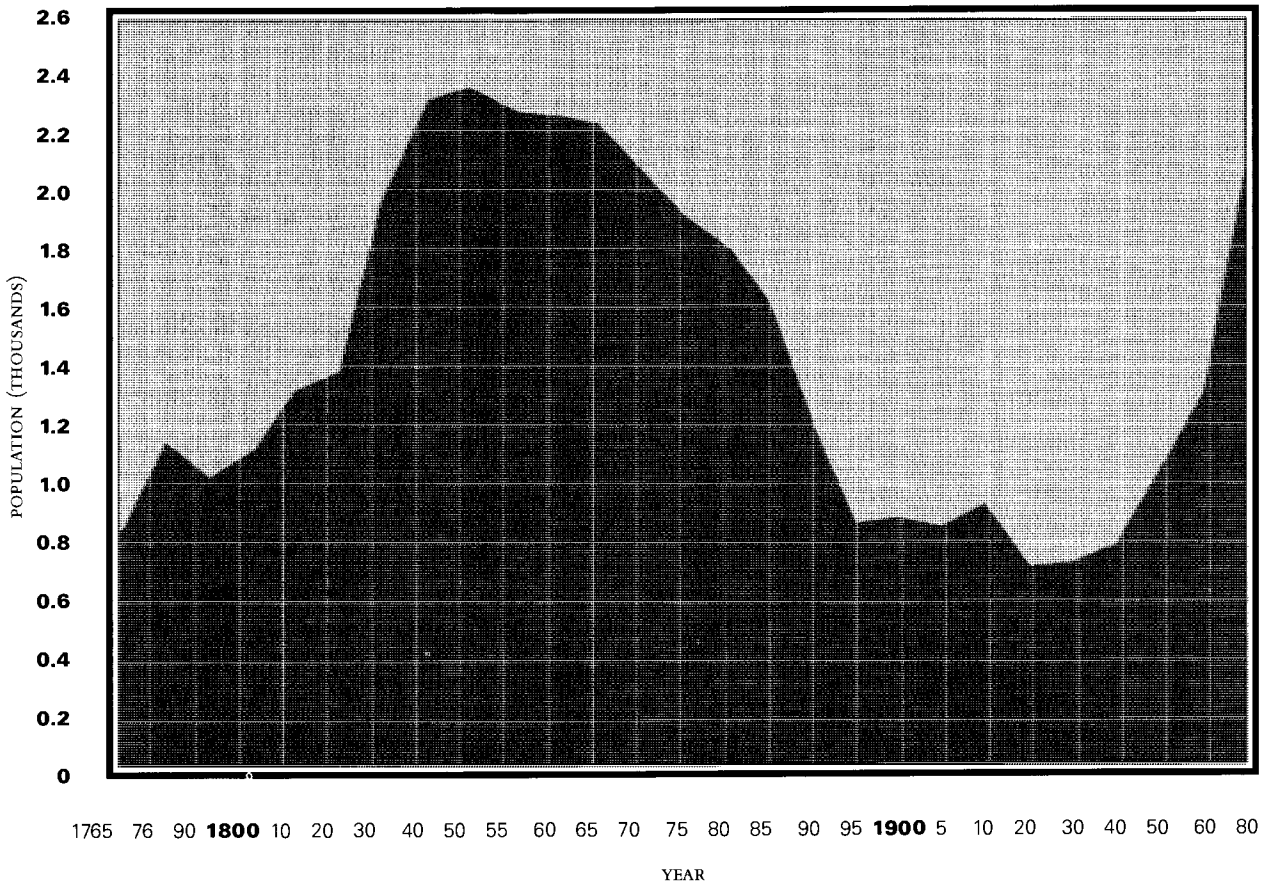
TRURO, MASSACHUSETTS. POPULATION. 1765–1980.



ORLEANS, MASSACHUSETTS. POPULATION. 1800-1960.



WELLFLEET, MASSACHUSETTS. POPULATION. 1765–1980.



PROVINCETOWN, MASSACHUSETTS. POPULATION. 1776–1980.

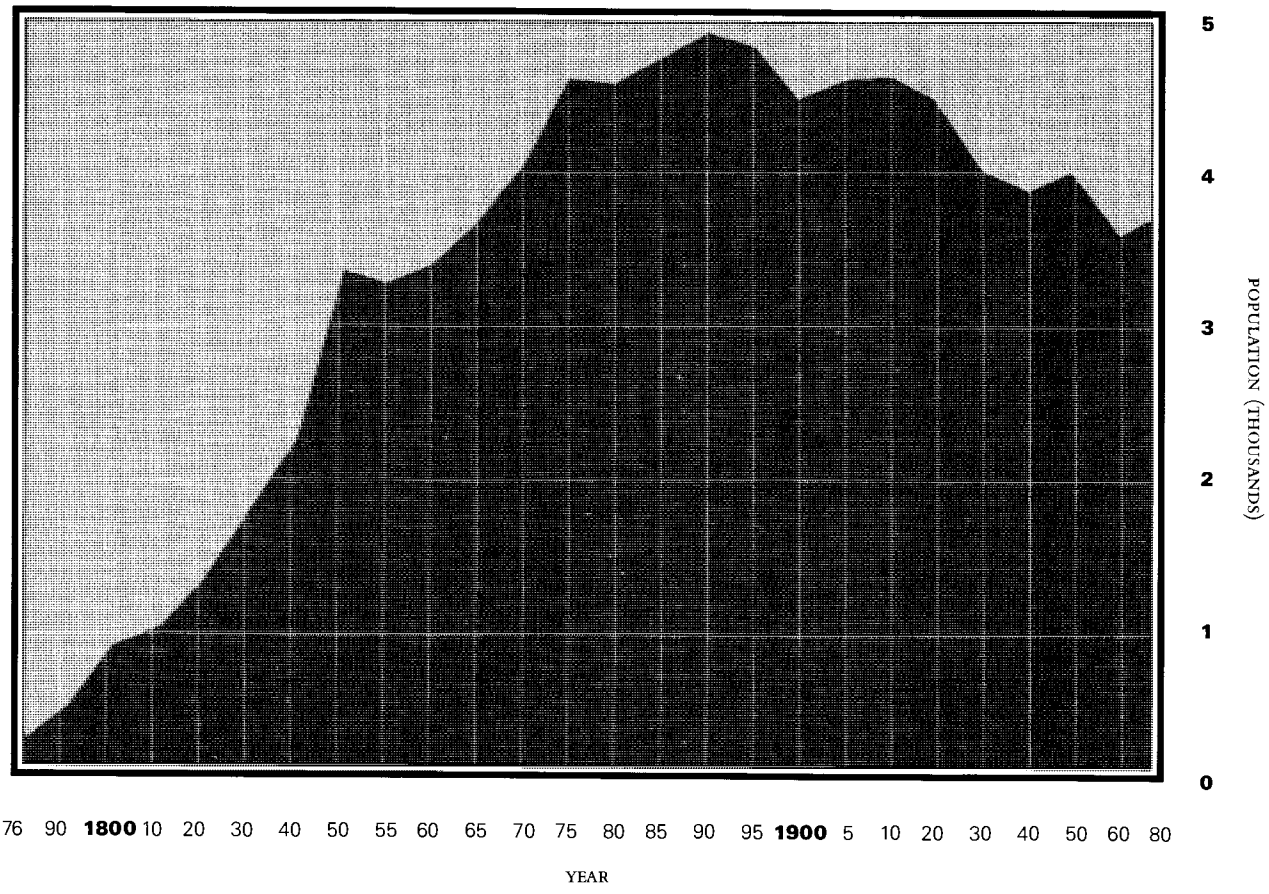


Table 1. SHEEP AND WOOL PRODUCTION FOR 1837
(COMMONWEALTH OF MASSACHUSETTS 1838)

TOWN	NUMBER OF COMMON SHEEP	POUNDS OF WOOL	VALUE OF WOOL
CHATHAM	300	900	$450
ORLEANS	362	950	380
EASTHAM	55	138	142.50
WELLFLEET	–	–	–
TRURO	400	800	360
PROVINCETOWN	–	–	–
TOTALS FOR THE LOWER CAPE	**1,117**	**2,788**	**$1,332.50**

Table 2. SHEEP AND WOOL PRODUCTION FOR 1845
(COMMONWEALTH OF MASSACHUSETTS 1846)

TOWN	NUMBER OF COMMON SHEEP	POUNDS OF WOOL	VALUE OF WOOL
CHATHAM	300	600	$200
ORLEANS	342	1,000	370
EASTHAM	–	–	–
WELLFLEET	50	100	40
TRURO	83	196	66
PROVINCETOWN	–	–	–
TOTALS FOR THE LOWER CAPE	**775**	**1,896**	**$676**

Table 3. SHEEP AND WOOL PRODUCTION FOR 1855
(COMMONWEALTH OF MASSACHUSETTS 1856)

TOWN	NUMBER OF COMMON SHEEP	POUNDS OF WOOL	VALUE OF WOOL
CHATHAM	60	150	NO VALUES GIVEN
ORLEANS	91	200	NO VALUES GIVEN
EASTHAM	–	–	–
WELLFLEET	–	–	–
TRURO	10	25	NO VALUES GIVEN
PROVINCETOWN	–	–	–
TOTALS FOR THE LOWER CAPE	**161**	**375**	NO VALUES GIVEN

Table 4. SHEEP AND WOOL PRODUCTION FOR 1865
(COMMONWEALTH OF MASSACHUSETTS 1856)

TOWN	NUMBER OF COMMON SHEEP	POUNDS OF WOOL	VALUE OF WOOL
CHATHAM	75	200	$150
ORLEANS	283	896	896
EASTHAM	17	55	33
WELLFLEET	–	–	–
TRURO	–	–	–
PROVINCETOWN	–	–	–
TOTALS FOR THE LOWER CAPE	**375**	**1,151**	**$1,079**

Table 5. AMOUNT AND VALUE OF BUTTER AND EGG PRODUCTION FOR 1845
Butter in pounds; eggs in dozens
(COMMONWEALTH OF MASSACHUSETTS 1846)

	BUTTER		EGGS	
TOWN	POUNDS	VALUE	DOZENS	VALUE
CHATHAM	30,000	$5,000	–	–
ORLEANS	23,715	3,083	37,941	$4,000
EASTHAM	7,193	1,096	–	–
WELLFLEET	4,000	480	–	–
TRURO	4,034	672	–	–
PROVINCETOWN	–	–	–	–
TOTALS FOR THE LOWER CAPE	**68,942**	**$10,331**	**37,941**	**$4,000**

Table 6. AMOUNT AND VALUE OF BUTTER/CHEESE AND EGG PRODUCTION FOR 1855
Butter and cheese in pounds; eggs in dozens
(COMMONWEALTH OF MASSACHUSETTS 1856)

	BUTTER		EGGS	
TOWN	POUNDS	VALUE	DOZENS	VALUE
CHATHAM	12,200	$2,800	–	–
ORLEANS	21,98550	4,500	40,000	$6,000
CHEESE	50	5		
EASTHAM	20,000	5,000	50,600	8,096
WELLFLEET	9,800	1,960	–	–
[TYPOGRAPHICAL ERROR IN ORIGINAL]				
TRURO	9,176	2,294	–	–
PROVINCETOWN	–	–	–	–
TOTALS FOR THE LOWER CAPE	**73,161**	**$16,554**	**90,600**	**$14,096**

Table 7. AMOUNT AND VALUE OF MILK, BUTTER, AND EGG PRODUCTION FOR 1865
Milk in gallons and butter in pounds
Values rounded off to nearest dollar
(COMMONWEALTH OF MASSACHUSETTS 1868)

	MILK		BUTTER		EGGS
TOWN	GALLONS	VALUE	POUNDS	VALUE	VALUE
CHATHAM	16,500	$3,630	5,296	$2,383	$3,652
ORLEANS	567	113	3,560	1,424	12,594
EASTHAM	–	–	611	154	5,386
WELLFLEET	5,540	1,329	1,750	525	5,425
TRURO	32,850	8,212	1,032	412	2,840
PROVINCETOWN	–	–	–	–	–
TOTALS FOR THE LOWER CAPE	**55,457**	**$13,284**	**12,249**	**$4,898**	**$29,897**

Table 8. AMOUNT AND VALUE OF MEAT PRODUCTION FOR 1865

Amounts in pounds

No amounts for poultry given

Values rounded off to the nearest dollar

(COMMONWEALTH OF MASSACHUSETTS 1868)

	BEEF		PORK		VEAL		MUTTON		POULTRY	
TOWN	POUNDS	VALUE	POUNDS	VALUE	POUNDS	VALUE	POUNDS	VALUE	POUNDS	VALUE
CHATHAM	20,000	$2,100	49,500	$10,400	8,750	$10,050	–	–	–	
ORLEANS	82,634	9,916	42,136	7,584	4,660	466	600	$90	$150	
EASTHAM	–	–	–	–	–	–	–	–	128	
WELLFLEET	16,000	1,600	16,900	3,040	4,600	460	–	–	–	
TRURO	11,181	1,006	22,500	2,250	1,570	141	–	–	150	
PROVINCETOWN	–	–	–	–	–	–	–	–	–	
TOTALS FOR THE LOWER CAPE	**129,815**	**$14,622**	**131,026**	**$23,274**	**19,640**	**$11,117**	**600**	**$90**	**$428**	

Table 9. PRODUCTION OF OATS, WHEAT, RYE, BARLEY, AND CORN IN 1865

In bushels

(COMMONWEALTH OF MASSACHUSETTS 1868)

TOWN	OATS	WHEAT	RYE	BARLEY	CORN
CHATHAM	120	–	259	55	1,925
ORLEANS	1,253	60	1,184	670	7,808
EASTHAM	–	–	1,278	–	4,879
WELLFLEET	–	–	322	–	1,005
TRURO	–	–	577	21	2,170
PROVINCETOWN	–	–	–	–	–
TOTALS FOR THE LOWER CAPE	**1,373**	**60**	**3,620**	**746**	**17,787**

Table 10. PRODUCTION OF OATS, WHEAT, RYE, BARLEY, AND CORN IN 1885
In bushels
(COMMONWEALTH OF MASSACHUSETTS 1868)

TOWN	OATS	WHEAT	RYE	BARLEY	CORN
CHATHAM	–	–	13	–	711
ORLEANS	289	2.5	914	42	3,804
EASTHAM	192	150	320	10	1,284
WELLFLEET	55	–	–	–	162
TRURO	–	–	45	–	55
PROVINCETOWN	–	–	–	–	–
TOTALS FOR THE LOWER CAPE	**536**	**152.5**	**1,292**	**52**	**6,016**

Table 11. AMOUNT AND VALUE OF MILK, BUTTER, AND EGG PRODUCTION FOR 1885
Milk and cream in gallons; butter in pounds; eggs in dozens
(COMMONWEALTH OF MASSACHUSETTS 1887)

	MILK AND CREAM		BUTTER		EGGS	
TOWN	GALLONS	VALUE	POUNDS	VALUE	DOZENS	VALUE
CHATHAM	20,600	$4,160	1,700[1] 625[2]	$426[1] 176[2]	6,375	$1,288
ORLEANS	71,122 622[3]	17,369 622[3]	12,470[1] 10,578[2]	3,710[1] 3,219[2]	88,526	17,108
EASTHAM	52,935 30[3]	9,523 38[3]	3,935[1] 992[2]	1,184[1] 300[2]	46,080	8,407
WELLFLEET	36,394 571[3]	7,871 598[3]	1,610[1] 1,267[2]	483[1] 374[2]	52,287 497[4]	11,619 448[4]
TRURO	47,150	8,869	1,215[1] 420[2]	364[1] 121[2]	20,357 25[4]	4,120 25[4]
PROVINCETOWN	23,440	5,567	–	–	1,975	395
TOTALS FOR THE LOWER CAPE	**252,864[5]**	**$54,617[5]**	**34,812**	**$10,357**	**174,747**	**$43,385**

[1] BUTTER USED
[2] BUTTER SOLD
[3] CREAM
[4] FANCY EGGS
[5] TOTAL MILK AND CREAM

Table 12 AMOUNT AND VALUE OF MEAT PRODUCTION FOR 1885
Amounts in pounds
(COMMONWEALTH OF MASSACHUSETTS 1887)

	PORK		POULTRY		BEEF		VEAL		OTHER MEAT	
TOWN	LBS	VALUE	LBS	VALUE	LBS	VALUE	LBS	VALUE	LBS	VALUE
CHATHAM	6250	$605	125	$24	–	–	–	–	–	–
ORLEANS	31,505	2,245	19,564	2,357	26,275	$1,825	530	$31	700 (WILD GAME)	$88
EASTHAM	14,660	1,034	1,536	240	–	–	501	41	–	–
WELLFLEET	12,027	877	3,593	657	–	–	710	63	160 (TRIPE)	14
TRURO	14,321	1,072	3,439	583	2,750	201	510	47	–	–
PROVINCETOWN	2,500	175	100	18	–	–	–	–	–	–
TOTALS FOR THE LOWER CAPE	**81,263**	**$6,008**	**28,357**	**$3879**	**29,025**	**$2026**	**2,251**	**$182**	**860**	**$102**

Table 13. SELECTED VEGETABLE CROP PRODUCTION IN 1875
(COMMONWEALTH OF MASSACHUSETTS 1876C)

TOWN	PUMPKINS (LBS)	SQUASH (LBS)	CABBAGE (HEADS)	CUCUMBERS (BUSHELS)
CHATHAM	62,000	–	–	5
ORLEANS	177,015	4,145	–	37
EASTHAM	8,800	7,290	2,150	29
WELLFLEET	–	2,000	–	–
TRURO	17,000	10,950	12,626	7,450
PROVINCETOWN	–	–	–	–

Table 14. STRAWBERRY PRODUCTION BY TOWN, 1875 TO 1885
In quarts
(COMMONWEALTH OF MASSACHUSETTS 1876C, 1887B)

TOWN	1875	1885
CHATHAM	–	–
ORLEANS	350	430
EASTHAM	1,991	476
WELLFLEET	–	274
TRURO	50	281
PROVINCETOWN	–	–
TOTALS FOR THE LOWER CAPE	**2,391**	**1,461**

Table 15. TURNIP, BEET, AND POTATO PRODUCTION IN 1865
In bushels
(COMMONWEALTH OF MASSACHUSETTS 1868)

TOWN	TURNIPS	BEETS	POTATOES
CHATHAM	750	–	800
ORLEANS	1,600	–	2,108
EASTHAM	–	–	1,651
WELLFLEET	700	300	1,850
TRURO	2,213	700	2,082
PROVINCETOWN	–	–	–
TOTALS FOR THE LOWER CAPE	**4,563**	**1,000**	**8,491**

Table 16. TURNIP, BEET, AND POTATO PRODUCTION IN 1885
In bushels
(COMMONWEALTH OF MASSACHUSETTS 1887B)

TOWN	TURNIPS	BEETS	POTATOES
CHATHAM	60	–	825
ORLEANS	665	30	2,274
EASTHAM	5,648	70	2,022
WELLFLEET	183	133	746
TRURO	2,310	506	1,301
PROVINCETOWN	–	26	121
TOTALS FOR THE LOWER CAPE	**8,866**	**765**	**7,289**

Table 17. CRANBERRY PRODUCTION 1875 TO 1905
In bushels (1875 and 1885)
In barrels (1895 and 1905)
(COMMONWEALTH OF MASSACHUSETTS 1876C, 1887B, 1899B, AND 1909B)

TOWN	1875	1885	1895	1905
CHATHAM	322	1,000	2,056	3,604
ORLEANS	1,528	1,067	187	2,174
EASTHAM	532	471	43	280
WELLFLEET	375	143	71	818
TRURO	114	479	1,174	672
PROVINCETOWN	750	1,472	265	158
TOTALS FOR THE LOWER CAPE	**3,621**	**4,632**	**3,796**	**7,706**

Table 18. THE MACKEREL AND COD FISHERIES: SHIPS, HANDS EMPLOYED, AND CATCH FOR 1837

Mackerel in barrels, cod in quintals (100 kilos)

(COMMONWEALTH OF MASSACHUSETTS 1838)

	VESSELS		HANDS	MACKERAL		COD	
TOWN	NO.	TONNAGE	EMPLOYED	AMOUNT	VALUE	AMOUNT	VALUE
CHATHAM	22	1,450	198	1,200	$9,600	15,000	$46,500
ORLEANS	33	2,310	264	6,000	36,000	20,000	55,100
EASTHAM	13	520	91	4,550	27,300	1,200	3,600
WELLFLEET	62	3,228	496	17,500	122,500	3,100	6,200
TRURO	63	3,437	512	15,750	94,500	16,950	50,850
PROVINCETOWN	98	6,200	1,078	18,000	126,000	51,400	154,200
TOTALS FOR THE LOWER CAPE	**291**	**17,145**	**2,639**	**63,000**	**$415,900**	**107,650**	**$316,450**

Table 19. THE MACKEREL AND COD FISHERIES: SHIPS, HANDS EMPLOYED, AND CATCH FOR 1845

Mackerel in barrels, cod in quintals (100 kilos)

(COMMONWEALTH OF MASSACHUSETTS 1846)

	VESSELS		HANDS	MACKERAL		COD	
TOWN	NO.	TONNAGE	EMPLOYED	AMOUNT	VALUE	AMOUNT	VALUE
CHATHAM	13	777	117	400	$2,000	7,600	$17,000
ORLEANS	9	490	75	1,000	6,000	35,000	7,000
EASTHAM	5	200	41	500	5,000	2,000	5,000
WELLFLEET	60	2,600	480	9,700	67,900	2,000	4,500
TRURO	40	2,050	350	6,740	49,925	6,250	14,062
PROVINCETOWN	50	3,000	400	1,000	9,000	20,000	45,000
TOTALS FOR THE LOWER CAPE	**177**	**9,117**	**1,463**	**19,340**	**$139,825**	**72,850**	**$92,562**

Table 20. THE MACKEREL AND COD FISHERIES: SHIPS, HANDS EMPLOYED, AND CATCH FOR 1855
Mackerel in barrels, cod in quintals (100 kilos)
(COMMONWEALTH OF MASSACHUSETTS 1856)

	VESSELS		HANDS	MACKERAL		COD	
TOWN	NO.	TONNAGE	EMPLOYED	AMOUNT	VALUE	AMOUNT	VALUE
CHATHAM	27	1,880	230	3,000	$24,000	15,000	$45,000
ORLEANS	8	670	72	800	6,000	4,365	11,728
EASTHAM	3	168	30	750	7,500	300	800
WELLFLEET	80	5,935	824	12,000	129,150	8,528	27,716
TRURO	49	2,843	442	NOT RECORDED		NOT RECORDED	
PROVINCETOWN	97	8,495	873	6,000	60,000	79,000	246,875
TOTALS FOR THE LOWER CAPE	**264**	**19,991**	**2,471**	**>22,550**	**>$226,650**	**>107,193**	**>$332,119**

Table 21. THE MACKEREL AND COD FISHERIES: SHIPS, HANDS EMPLOYED, AND CATCH FOR 1865
Mackerel in barrels, cod in quintals (100 kilos)
(COMMONWEALTH OF MASSACHUSETTS 1868)

	VESSELS		HANDS	MACKERAL		COD	
TOWN	NO.	TONNAGE	EMPLOYED	AMOUNT	VALUE	AMOUNT	VALUE
CHATHAM	39	2,659	381	6,746	$93,835	25,361	$171,000
ORLEANS	4	307	60	2,000	30,000	1,350	10,800
EASTHAM	NOT RECORDED		8	–	–	130	650
WELLFLEET	68	4,004	740	26,900	385,000	1,200	7,200
TRURO	10	703	150	7,955	118,125	650	4,550
PROVINCETOWN	105	9,438	1,260	19,395	296,681	65,411	566,264
TOTALS FOR THE LOWER CAPE	**>226**	**>17,111**	**2,599**	**62,996**	**$923,641**	**94,102**	**$760,775**

Table 22. PROVINCETOWN WHALING 1837–1865
(COMMONWEALTH OF MASSACHUSETTS 1838, 1846, 1856, 1868)

YEAR	VESSELS	TONNAGE	MEN EMPLOYED
1837	2	275	35
1845	26	3,255	520
1855	17	1,885	310
1865	28	2,362	498

Table 23. THE MACKEREL AND COD FISHERIES: SHIPS AND CATCH FOR 1875

Mackerel in barrels, cod in quintals (100 kilos)
(unless otherwise noted)
(COMMONWEALTH OF MASSACHUSETTS 1877)

	VESSELS		MACKEREL		COD	
TOWN	NO.	TONNAGE	AMOUNT	VALUE	AMOUNT	VALUE
CHATHAM	69	1,887	583,650	$76,543	16,744	$69,440
ORLEANS	1	55	511	4,088	–	–
EASTHAM	–	–	65,357	5,691	25 (LBS)	1
WELLFLEET	50	2,280	35,817	332,688	–	–
TRURO	–	–	–	–	–	–
PROVINCETOWN	222	14,311	938,856 (LBS)	39,390	2,993,600 (LBS)	593,018
				41,433 (BBLS)	344,123	
TOTALS FOR THE LOWER CAPE	**342**	**18,533**		**$802,523**		**$662,459**

Table 24. THE MACKEREL AND COD FISHERIES: SHIPS AND CATCH FOR 1885

Mackerel in barrels, cod in pounds
(COMMONWEALTH OF MASSACHUSETTS 1888)

	MACKEREL		COD	
TOWN	AMOUNT	VALUE	AMOUNT	VALUE
CHATHAM	10,765	$47,885	775,009	$15,152
ORLEANS	166	692	28,560	788
EASTHAM	1,762.5	8,679	–	–
WELLFLEET	38,736	160,627	–	–
TRURO	9,527.5	43,789	112,050	1,742
PROVINCETOWN	32,066	110,770	16,801,060	353,845
TOTALS FOR THE LOWER CAPE	**93,023**	**$372,442**	**17,716,679**	**$371,527**

Table 25. THE MACKEREL AND COD FISHERIES: CATCH FOR 1895
Fresh mackerel–value only
Salted mackerel in barrels, cod in pounds
(COMMONWEALTH OF MASSACHUSETTS 1899B)

TOWN	MACKEREL (FRESH)	MACKEREL (SALTED) AMOUNT	MACKEREL (SALTED) VALUE	COD (FRESH) AMOUNT	COD (FRESH) VALUE	COD (SALTED) AMOUNT	COD (SALTED) VALUE
CHATHAM	$7,907	990	$11,540	72,441	$1,470	501,742	$18,333
ORLEANS	10	–	–	–	–	–	–
EASTHAM	1,585	–	–	–	–	1,200	60
WELLFLEET	862	200	2,060	15,450	325	5,588	142
TRURO	14,258	–	–	146,050	2,026	–	–
PROVINCETOWN	30,846	–	–	12,427,050	125,567	1,074,560	28,190
TOTALS FOR THE LOWER CAPE	**55,468**	**1,190**	**$13,600**	**12,660,991**	**$129,388**	**1,583,090**	**$46,725**

Table 26. VALUE OF WHALE PRODUCTS FROM PROVINCETOWN 1905 AND 1915
(COMMONWEALTH OF MASSACHUSETTS 1909B, 1918)

PRODUCT	1905	1915
AMBERGRIS	$2,800	–
WHALE OIL	$18,765	$4,500

Table 27. LOCATIONS OF THE CAPE COD LIFESAVING STATIONS
(CLEMENSEN 1979; DALTON 1991; SEE ALSO FIGURE 55)

MONOMOY POINT	THREE-QUARTERS OF A MILE SOUTHWEST OF THE MONOMOY LIGHTHOUSE
MONOMOY	TWO AND A QUARTER MILES NORTH OF THE MONOMOY LIGHTHOUSE
CHATHAM	ONE AND A QUARTER MILES SOUTH-SOUTHEAST OF CHATHAM LIGHTHOUSE
OLD HARBOR	A HALF MILE NORTH OF THE CHATHAM INLET
ORLEANS	IN LINE WITH POCKET ISLAND
NAUSET	ONE AND A QUARTER MILES SOUTH OF THE NAUSET LIGHT
CAHOON'S HOLLOW	TWO AND A HALF MILES EAST OF WELLFLEET
PAMET RIVER	THREE AND A HALF MILES SOUTH OF HIGHLAND LIGHTHOUSE
HIGHLAND	SEVEN-EIGHTHS OF A MILE NORTHWEST OF HIGHLAND LIGHTHOUSE
HIGH HEAD	THREE AND A HALF MILES NORTHWEST OF HIGHLAND LIGHTHOUSE
PEAKED HILL BARS	TWO AND A HALF MILES NORTHEAST OF PROVINCETOWN
RACE POINT	ONE AND FIVE-EIGHTHS MILES NORTHEAST OF RACE POINT LIGHTHOUSE
WOOD END	ONE-EIGHTH MILE EAST OF WOOD END LIGHTHOUSE

Table 28. THE MACKEREL AND COD FISHERIES: CATCH FOR 1905
Various units as noted
Fresh fish not distinguished from salted
(COMMONWEALTH OF MASSACHUSETTS 1909B)

	MACKEREL		COD	
TOWN	AMOUNT	VALUE	AMOUNT	VALUE
CHATHAM	1,146 BBLS.	$9,312	4 BBLS.	$27
	17,074 NO.	1,620	81,172 LBS.	3,604
ORLEANS	–	–	1,100 LBS.	42
EASTHAM	15 NO.	45	–	–
WELLFLEET	–	–	–	–
TRURO	6 BBLS.	60	40 BBLS.	65
	3 NO.	5,702	70,000 LBS.	1,810
PROVINCETOWN	415 BBLS.	4,109		
	497,373 NO.	47,518	7,568,406 LBS.	221,914
TOTALS FOR THE LOWER CAPE	**$68,366**		**$227,462**	

Table 29. THE MACKEREL AND COD FISHERIES: CATCH FOR 1915
Mackeral and cod in pounds
(COMMONWEALTH OF MASSACHUSETTS 1918)

	MACKEREL		COD	
TOWN	AMOUNT	VALUE	AMOUNT	VALUE
CHATHAM	191,815	$7,080	471,498	$21,464
ORLEANS	35,200	1,320	7,800	465
EASTHAM	38,700	2,260	–	–
WELLFLEET	40,400	2,000	–	–
TRURO	560,863	20,984	2,000	60
PROVINCETOWN	1,950,755	80,604	6,019,320	184,171
TOTALS FOR THE LOWER CAPE	**2,817,733**	**$114,248**	**6,500,618**	**$206,160**

Table 30. SALTWORKS ON THE LOWER CAPE IN 1802, 1809, AND 1831
(STOTT 1987:292)

	1802		1809	1831	
TOWN	NUMBER	CAPACITY	ADJUSTED CAPACITY	NUMBER	CAPACITY
CHATHAM	6	11,500	40,836	93	147,201
ORLEANS	11	3,080	14,650	78	88,558
EASTHAM	12	9,100	15,256	56	88,446
WELLFLEET	2	180	6,005	35	35,520
TRURO	1	700	9,850	50	66,450
PROVINCETOWN	10	11,404	15,961	76	147,895
TOTALS FOR THE LOWER CAPE	**42**	**35,964**	**102,558**	**388**	**574,070**

Table 31. SALT PRODUCTION ON THE LOWER CAPE IN 1837
In bushels
(COMMONWEALTH OF MASSACHUSETTS 1838)

TOWN	NUMBER OF SALTWORKS	AMOUNT PRODUCED	VALUE	NUMBER OF EMPLOYEES	CAPITAL INVESTED
CHATHAM	80	27,400	$8,220	34	$55,200
ORLEANS	50	21,780	6,534	30	30,494
EASTHAM	54	22,370	6,711	54	22,250
WELLFLEET	39	10,000	3,300	39	25,000
TRURO	39	17,490	14,575	39	58,300
PROVINCETOWN	78	48,960	18,360	156	77,500
TOTALS FOR THE LOWER CAPE	**340**	**108,000**	**$57,700**	**352**	**$268,744**

Table 32. SALT PRODUCTION ON THE LOWER CAPE IN 1845
In bushels
(COMMONWEALTH OF MASSACHUSETTS 1846)

TOWN	NUMBER OF SALTWORKS	AMOUNT PRODUCED	VALUE	NUMBER OF EMPLOYEES	CAPITAL INVESTED
CHATHAM	54	18,000	$3,600	54	$19,600
ORLEANS	46	17,072	4,268	46	11,170
EASTHAM	35	17,320	4,330	35	14,180
WELLFLEET	28	6,000	1,680	28	32,000
TRURO	25	11,515	3,224	25	19,640
PROVINCETOWN	70	26,000	6,500	100	POSSIBLE ERROR IN TEXT
TOTALS FOR THE LOWER CAPE	**258**	**95,907**	**$23,602**	**288**	–

Table 33. SALT PRODUCTION ON THE LOWER CAPE IN 1855
In bushels
(COMMONWEALTH OF MASSACHUSETTS 1856)

TOWN	NUMBER OF SALTWORKS	AMOUNT PRODUCED	VALUE	NUMBER OF EMPLOYEES	CAPITAL INVESTED
CHATHAM	14	3,300	$1,320	14	$4,500
ORLEANS	19	10,125	3,037	19	10,000
EASTHAM	28	13,722	3,837	31	9,282
WELLFLEET	13	40,000	12,000	10	4,600
TRURO	15	5,078	1,904.25	13	3,500
PROVINCETOWN	5	2,304	702	2	200
TOTALS FOR THE LOWER CAPE	**94**	**74,529**	**$22,800.25**	**89**	**$32,082**

Table 34. SALT PRODUCTION ON THE LOWER CAPE IN 1865
In bushels
(COMMONWEALTH OF MASSACHUSETTS 1868)

TOWN	NUMBER OF SALTWORKS	AMOUNT PRODUCED	VALUE	NUMBER OF EMPLOYEES	CAPITAL INVESTED
CHATHAM	–	–	–	–	–
ORLEANS	15	4,740	$3,555	15	$6,030
EASTHAM	9	4,575	2,289	9	2,000
WELLFLEET	5	700	535	5	700
TRURO	–	–	–	–	–
PROVINCETOWN	1	200	125	1	150
TOTALS FOR THE LOWER CAPE	**30**	**10,215**	**$6,504**	**30**	**$8,880**

Table 35. PROVINCETOWN WHALE OIL PRODUCTION 1837–1865
Oil produced in gallons
(COMMONWEALTH OF MASSACHUSETTS 1838, 1846, 1856, 1868)

YEAR	TYPE OF OIL	AMOUNT	VALUE
1837	SPERM	21,420	$18,207
1845	SPERM	105,210	95,584
	"WHALE"	25,800	10,400
1855	SPERM	61,582	92,373
	"WHALE"	44,100	26,460
1865	SPERM	96,197	189,104
	"WHALE"	91,571	122,913

Table 36. SHIPBUILDING ON THE LOWER CAPE 1832–1837
(COMMONWEALTH OF MASSACHUSETTS 1838)

TOWN	VESSELS BUILT	TONNAGE	VALUE	NUMBER EMPLOYED
CHATHAM	5	387	$19,350	5
ORLEANS	–	–	–	–
EASTHAM	–	–	–	–
WELLFLEET	–	–	–	–
TRURO	–	–	–	–
PROVINCETOWN	–	–	–	–

Table 37. SHIPBUILDING ON THE LOWER CAPE 1845
(COMMONWEALTH OF MASSACHUSETTS 1846)

TOWN	VESSELS BUILT	TONNAGE	VALUE	NUMBER EMPLOYED
CHATHAM	6	–	$50	1
ORLEANS	6	–	240	2
EASTHAM	–	–	–	–
WELLFLEET	–	–	–	–
TRURO	–	–	–	–
PROVINCETOWN	150	–	7,500	9
TOTALS FOR THE LOWER CAPE	**162**	**–**	**$7,790**	**12**

Table 38. SAILMAKING ON THE LOWER CAPE 1855
(COMMONWEALTH OF MASSACHUSETTS 1856)

TOWN	SAIL LOFTS	SAILS MADE	VALUE	NUMBER EMPLOYED
CHATHAM	–	–	–	–
ORLEANS	–	–	–	–
EASTHAM	–	–	–	–
WELLFLEET	2	100	$4,000	4
TRURO	2	63	3,150	2
PROVINCETOWN	7	473	33,700	20
TOTALS FOR THE LOWER CAPE	**11**	**636**	**$40,850**	**26**

Table 39. SAILMAKING ON THE LOWER CAPE 1865
(COMMONWEALTH OF MASSACHUSETTS 1868)

TOWN	SAIL LOFTS	SAILS MADE	VALUE	NUMBER EMPLOYED
CHATHAM	2	48	$9,455	3
ORLEANS	–	–	–	–
EASTHAM	–	–	–	–
WELLFLEET	3	82	27,400	8
TRURO	1	19	6,605	2
PROVINCETOWN	8	193	32,715	16
TOTALS FOR THE LOWER CAPE	**14**	**342**	**$76,175**	**29**

Table 40. BOOT AND SHOE MANUFACTURE IN 1837, 1845, 1855, AND 1865
In pairs
(COMMONWEALTH OF MASSACHUSETTS 1838, 1846, 1856, 1868)

	1837				1845			
TOWN	BOOTS	SHOES	VALUE	NUMBER EMPLOYED	BOOTS	SHOES	VALUE	NUMBER EMPLOYED
CHATHAM	200	600	$1,500	3	150	400	$900	3
ORLEANS	450	2,000	2,850	14	207	1,525	1,765	11
EASTHAM	200	3,000	3,700	27	50	300	450	3
WELLFLEET	250	400	1,150	6	300	1,000	2,000	8
TRURO	200	800	1,700	7	–	–	–	–
PROVINCETOWN	–	–	–	–	800	2,500	4,000	14
TOTALS FOR THE LOWER CAPE	**1,300**	**6,800**	**$10,900**	**57**	**1,507**	**5,725**	**$9,115**	**39**

	1855				1865			
TOWN	BOOTS	SHOES	VALUE	NUMBER EMPLOYED	BOOTS	SHOES	VALUE	NUMBER EMPLOYED
CHATHAM	–	–	–	–	175	200	$2,000	3
ORLEANS	250	1,000	$1,150	2	70	24	521	1
EASTHAM	–	–	–	–	–	–	–	–
WELLFLEET	100	200	500	3	–	–	–	–
TRURO	–	–	–	–	140	175	1,102	5
PROVINCETOWN	2,200	3,800	5,600	10	–	–	–	–
TOTALS FOR THE LOWER CAPE	**2,550**	**5,000**	**$7,250**	**15**	**385**	**399**	**$3,623**	**9**

Table 41. SALT CONSUMED IN 1885, 1895, AND 1905
In barrels
(COMMONWEALTH OF MASSACHUSETTS 1888, 1899B, 1909B)

TOWN	1885	1895	1905
CHATHAM	4,772	1,750	197
ORLEANS	113	–	–
EASTHAM	30	4	–
WELLFLEET	17,000	192	200
TRURO	1,500	18	25
PROVINCETOWN	60,000	16,000	90*
TOTALS FOR THE LOWER CAPE	**83,415**	**17,964**	**>512**

* AMOUNT GIVEN IS FOR IMPORTED SALT; IN ADDITION, 10 TONS OF DOMESTIC SALT WERE CONSUMED. VALUES WERE $90 FOR THE IMPORTED SALT AND $80 FOR THE DOMESTIC.

Table 42. ICE CONSUMED IN 1885, 1895, AND 1905
In tons
(COMMONWEALTH OF MASSACHUSETTS 1888, 1897, 1909B)

TOWN	1885	1895	1905
CHATHAM	341	247	515.5
ORLEANS	104	4	–
EASTHAM	880	563	–
WELLFLEET	1	129	2
TRURO	751	705	275
PROVINCETOWN	1,619	4,628	6,111
TOTALS FOR THE LOWER CAPE	**3,696**	**6,276**	**6,903.5**

Table 43. PROVINCETOWN WHALE OIL PRODUCTION 1875-1905
In gallons; 1905 in barrels
(COMMONWEALTH OF MASSACHUSETTS 1877, 1888, 1899B, 1909B)

YEAR	TYPE OF OIL	AMOUNT	VALUE
1875	SPERM	74,234	$126,633
	"WHALE"	44,688	26,813
	HUMPBACK	27,168	14,671
1885	SPERM	44,885	36,271
	"COMMON"	39,431	14,175
1895	SPERM	108,994	42,340
	"COMMON"	8,173	1,726
1905	SPERM	1,180	18,765

Table 44. SAILMAKING ON THE LOWER CAPE IN 1875
(COMMONWEALTH OF MASSACHUSETTS 1877)

TOWN	SAIL LOFTS	VALUE
CHATHAM	1	$700
ORLEANS	–	–
EASTHAM	–	–
WELLFLEET	3	22,500
TRURO	–	–
PROVINCETOWN	7	25,716
TOTALS FOR THE LOWER CAPE	**11**	**$48,916**

Table 45. COLONIAL-PERIOD MAPS OF THE LOWER CAPE AND ROADS SHOWN ON THEM
(AFTER HERSHEY 1962:128)

DATE	DESCRIPTION
1690	Philip Lea, "A Map of New England, New York...and Virginia." No roads to the Cape are indicated; Monomoy, Eastham, East Harbor, and Cape Cod are identified. No copy was available for reproduction for this report.
1717	Cyprian Southack, "The Sea of New England," (Figure 16). No roads indicated on the Cape.
1729	Anonymous. Postal Map. No roads indicated on the Cape.

Table 46. FEDERAL-PERIOD MAPS OF THE LOWER CAPE AND ROADS SHOWN ON THEM (AFTER HERSHEY 1962:128-129)

DATE	DESCRIPTION
1770s	Anonymous, "A Plan of the Sea Coast from Boston Bay to the Light House of Rhode Island." No roads shown except in Orleans (part of Eastham at the time).
1779	J.F.W. Des Barres, "Chart of Coast of Massachusetts from Cape Cod to Narraganset Bay." Cape Cod is only a small part of this map; only one straight road is shown south of East Harbor.
1791	*Massachusetts Magazine*, (III:1, p.25), "Cape Cod." No roads shown on Cape.
1794	1794 Series Massachusetts Archives maps: Joseph Howes, Benjamin Godfrey, and Richard Sears, "A Map of Chatham," (1795), Massachusetts Archives Map 1026 (Figure 17). Roads shown from Harwich to The Neck (between Oyster Pond and Stage Harbor), around Mill Pond to Chatham Harbor, from Oyster Pond to North Chatham, and to Nickersons Neck on Pleasant Bay. Josiah Rogers, Elijah Knowles, and Simeon Kingman, "A Map of Eastham," (1795), Massachusetts Archives Map No. 1028 (Figures 18 and 19). Includes Orleans. A road is shown following the course of Route 28 along the shore of Pleasant Bay. It crosses a road that branches off of another road from Harwich (Brewster); the cross-road is near the route of the Eldredge Parkway, leading past the "South Meeting House" on the shore of Town Cove, and then east to Barley Neck and Nauset Heights. The road that enters from Harwich seems to follow the course of Route 6A through Orleans Center; it is the same route as that of the 1681 cartway (as presented by Hershey). This road joins that following Route 28 at the southwestern end of Town Cove; north of this point the road is labelled "County Road," and it passes a tavern north of Boat Meadow River, and the "North Meeting House" near Herring Pond; it continues to the Wellfleet line, probably east of the present Route 6. The maps accompanying Hershey's monograph show putative routes of the "Country Road" in relation to Route 6.

1794 | Samuel Waterman and Lewis Hamlin, "A Plan of the Town of Wellfleet," (1795), Massachusetts Archives Map No. 1035, (Figure 20).
A road enters the town from Eastham along West Road, joining the present Route 6 north of Silver Spring Brook; this road meets the Country Road near the intersection of today's Route 6 and Lieutenant Island Road. Hershey interprets the location of the "Publick Country Road" on this map as being east of Route 6 along its entire route in Wellfleet. Other roads branch off of it to the west, leading to Wellfleet Center and Chequesset Neck and to an area south of the Herring River and southeast of Bound Brook Island. As for ocean-front routes, the 1795 map shows no roads or paths on the shore, and the notation "Barren Sands 100 Rods from this Shore" appears.

Anonymous, "A Map of Truro," (1795). Massachusetts Archives Map No. 1034
(not reproduced because a quality copy was not available).

Joshua Atkins Mayo, Solomon Cook, and Samuel Rider, "A Plan of Provincetown in the County of Barnstable," (1795), Massachusetts Archives Map 1032 (Figure 21).
This map does not show any roads in town.

1796 | D.F. Stozmann, "Massachusetts," Hamburg.
Shows two roads that split at Yarmouth; one fork goes to Harwich and Chatham, and the other goes through Dennis to Orleans. One road goes "to Eastham meeting house around the Atlantic side of Blackfish [C]reek to Wellfleet meeting house through the Great Hollow, across the middle of the Pamet River, straight across Clay Pounds to the Atlantic side of Eastern [East] Harbor to the boundary of Provincetown. Bodies of water inland not accurately shown" (**Hershey 1962**:138).

1798 | Osgood Carleton, "An Accurate Map of the Commonwealth of Massachusetts Exclusive of the District of Maine," (Figure 22).
"Shows complexes of roads on Cape; shows, however, only one road north of Orleans. Road goes west of Town Cove and east of Eastham meeting house, directly north to Wellfleet, passing west of South Wellfleet meeting house. There is a fork to the west into Wellfleet. The main road continues on to the Cape Cod light, crosses on the Atlantic shore at the head of Pamet, makes a loop into Pond Village, then goes east and around Salt Meadow and north of East Harbor" (**Hershey 1962**:133-134).

Table 47. EARLY INDUSTRIAL-PERIOD MAPS OF THE LOWER CAPE AND ROADS SHOWN ON THEM (AFTER HERSHEY 1962:129-132)

DATE	DESCRIPTION
1830	1830 Series Massachusetts Archives maps: John G. Hales, "Plan of the Town of Chatham," (1831a), Massachusetts Archives Map No. 1836 (Figure 23). Shows the well-developed complex of roads that exists today. John G. Hales, "Plan of the Towns of Eastham and Orleans in the County of Barnstable," (1831b), Massachusetts Archives Map No. 1838 (Figure 24). The earlier roads also appear on this map. Route 6A is identified as "Brewster Road," and the 1795 "Country Road" is called "County Road." Roads are shown branching off, with dispersed houses along them. Saltworks appear on this map and those of other towns, but they are not all adjacent to roads; this suggests that smaller roads or paths were in existence at the time. John G. Hales, "Plan of the Town of Wellfleet in the County of Barnstable," (1831c), Massachusetts Archives Map No. 1847 (Figure 25). The main north-south road that follows the route of the 1795 map's "Publick Country Road" is to the east of Route 6, along the road known as "Old King's Highway," south of the Marconi Visitors' Center; another road parallels this one, further east. Other roads are shown leading to Wellfleet Center and to Bound Brook Island. John G. Hales, "Plan of the Town of Truro in the County of Barnstable," (1831d), Massachusetts Archives Map No. 1846 (Figure 26).
1830	Anonymous, "A Map of Provincetown," (1831), Massachusetts Archives Map No. 1843. This map does not show roads in town and is not reproduced here.
1833-1836	J.D. Graham, "A Map of the Extremity of Cape Cod Including the Townships of Provincetown and Truro." Mapped by U.S. Top. Engs., Bureau of Topographical Eng. T645, in *Doc. 121*, 25th Congress, 2nd Session. 1:10560 (Figures 27 and 28). The Truro section shows one road from High Head to Pond Village. The Provincetown section shows five roads from Provincetown Center radiating and disappearing; a road along the shore does not connect with all of these roads; no roads connect with roads off the Cape.
1834	S. Augustus Mitchell, "Map of Massachusetts, Connecticut and Rhode Island." This was characterized by Hershey as a "very inaccurate map" (**Hershey 1962**:129).
1841	Anonymous, "Plan of the Town of Wellfleet." Massachusetts Archive Map No. 1848 (Figure 29). Similar to Hales' 1831 map.

1841	Joshua Davis, "A Plan of Truro." Massachusetts Archive Map No. 1845 (Figures 30 and 31). Similar to Hales' 1831 map.
1848	Henry L. Whiting and Samuel L. Gilbert (A.D. Bache, Supt.), "Cape Cod from Cape Cod Light to Nausett Lt., U.S. Coast Survey." Mapped by U.S. Coast Survey (USCS). Register No. 260. Two sheets. 1:10,000. Hershey writes: "Gull Pond to Highland Light shows an absolute confusion of roads in pond area. There is a definite road at Atlantic side of Pamet river, looping around the end (as in 1802 description). Another main road runs up west side of cape inland over North Branch. Also a main road runs due east of North Branch (Longnook). The road north forks, one branch east to Highland Light (Tashmuit Highway?), one fork west to Pond Village. The "Old King's Highway" on the USGS map [i.e., 1958 North Truro USGS map] not on this map. There is no road on east side of cape just west of Highland Light" (**Hershey 1962**:130).
1848	Henry L. Whiting (A.D. Bache, Supt.), "Map of Cape Cod from Billingsgate to Pamet River." Register 259. Mapped by USCS. 1:10,000 (Figures 32-34). Section 1 shows no roads from Little Beach to the Herring River. Section 2, from Billingsgate to Pamet shows only scattered secondary roads.
1848	Henry L. Whiting (A.D. Bache, Supt.), "Map of the Extremity of Cape Cod including Provincetown and part of Truro." Register No. 616. Mapped by USCS. High water line resurveyed in 1857 by Henry L. Whiting. 1:10,000. Hershey comments: "Shows East Harbor bridge and a road along Provincetown Harbor. Also shows road along East Harbor in the East side, with a ford at low water allowing a road to west of Salt Meadows running south to Truro woods, as well as road exactly on west shore of Salt Meadows. Another road on east side of Salt Meadows goes just west of Highland Light. A main road runs east-west [from] Highland Light to Truro" (**Hershey 1962**:130).
1851	J.B. Gluck (A.D. Bache, Supt.), "Wellfleet Harbor, Cape Cod, Massachusetts." Register 368. Mapped by USCS. 1:10,000. This map shows a main road east of Cedar Pond and Boat Meadow; it crosses the Herring River. Another road is shown west of Herring Pond and Great Pond, running north.
1851-1653	J.B. Gluck (A.D. Bache, Supt.), "Southern Extremity of Cape Cod." Register 441. Mapped by USCS. 1:10,000. Mostly coast details; no definite roads; no roads shown on the Great Beach.
1853	S.A. Gilbert (A.D. Bache, Supt.), "Monomoy Island, Massachusetts," T-424. Mapped by USCS. Resurvey of shoreline in 1856 by C.T. Iardella. 1:20,000. No roads shown at all.

1856 C.T. Iardella (A.D. Bache, Supt.), "Nausett Harbor, Massachusetts." Register 579. Mapped by USCS. For revision of this sheet, see tracing with No. 1077. 1:10,000 (Figures 35-37).
Shows a main road west of Town Cove, running west of Salt Pond.

1858 Henry F. Walling, "Map of the Counties of Barnstable, Dukes and Nantucket, Massachusetts." This map has insets of Orleans, Truro, and Provincetown.
This map gives the names of property owners. It shows two roads to Provincetown, one across East Harbor, the other on the Atlantic side.
A set of photocopies of this wall map is on file at the Marconi Visitors' Center, South Wellfleet. Reproduction of this map is difficult as photocopies are too dark for legibility; it is not reproduced here. Nonetheless, this is an important source for the history of properties and is worth consulting for this purpose; individual sections of this map appear in the reconnaissance reports prepared by UMAS for the NPS.
A portion of the map is reprinted in Stowell (1970:20-21).

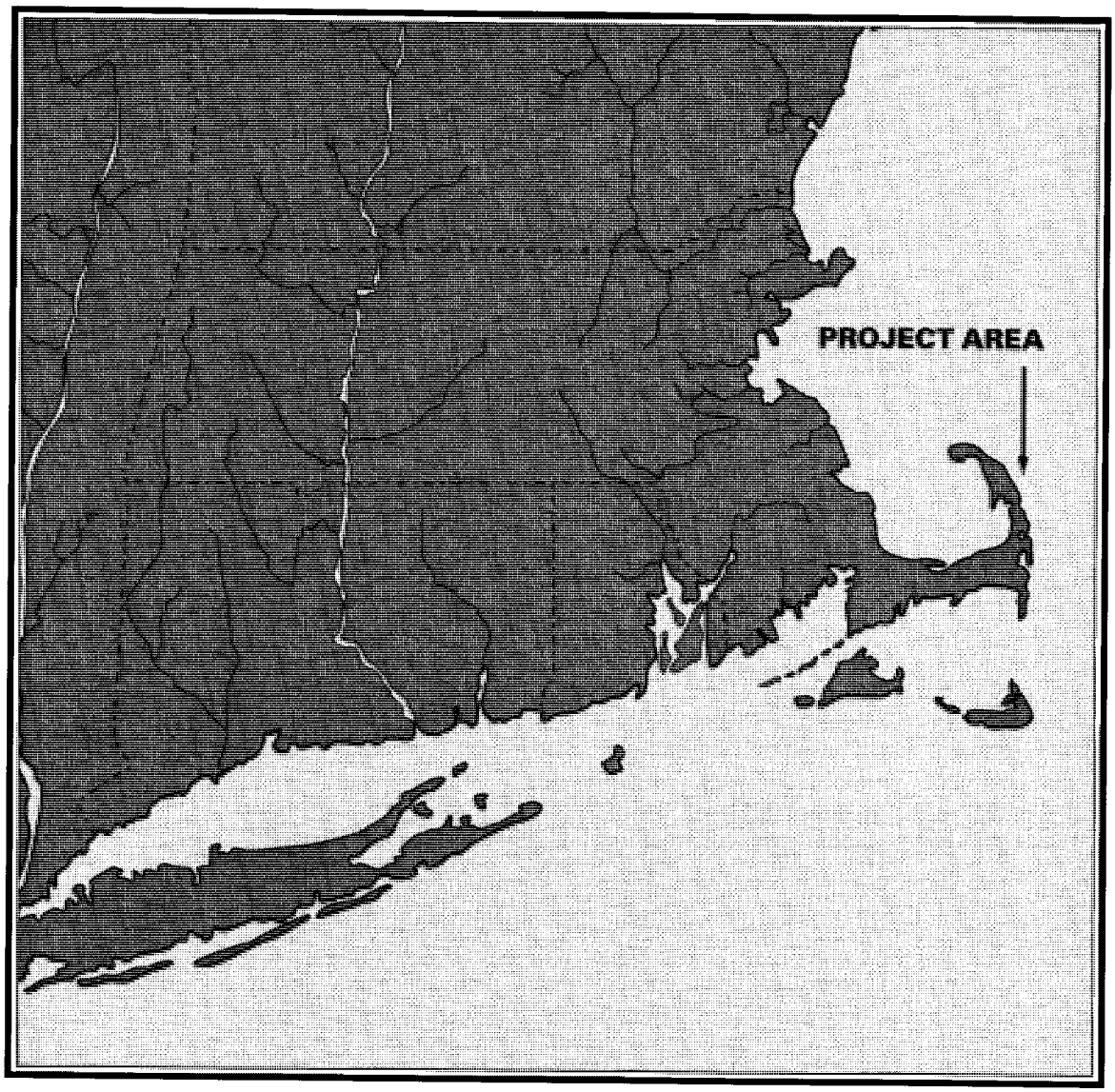
1868 H. Adams (Benjamin Peirce, Supt.), "Eastern Shore of Cape Cod from Pleasant Bay to Nausett Harbor." Register 1077. Mapped by the USCS. 1:10,000 (Figure 38).
Shows a road on the west side of Pleasant Bay, west of Round Pond and Deep Pond, labeled Road from Chatham to Orleans," (**Hershey 1962**:132). Many roads in the vicinity of Nauset Harbor.

1868 Preston C.F. West (Benjamin Peirce, Supt.), "Monomoy Point, Massachusetts." Register 1090. Mapped by the USCS. 1:20,000.
A trace of a road is shown on the western shore to the Monomoy Light and Life Boat Station (**Hershey 1962**:132).

1868 C. Boyd (Benjamin Peirce, Supt.), "Topography of the East Shore of Cape Cod Bay, Massachusetts, from Pleasant Bay to Monomoy Island." Register 1085. Mapped by the USCS. 1:10,000.
This is not discussed by Hershey (1962).

1868 C.N. Boyd and H. Wood-Bache (Benjamin Peirce, Supt.), "Southern Extremity of Cape Cod Including the Village of Chatham." Register 1085a. Mapped by the USCS. 1:10,000.
Main road on east side of Oyster Pond, and a fork of this north of Mill Pond (**Hershey 1962**:132).

Figure 1. PROJECT AREA LOCATION IN THE SOUTHERN NEW ENGLAND REGION



PROJECT AREA LOCATION IN THE CAPE COD REGION

Figure 2.

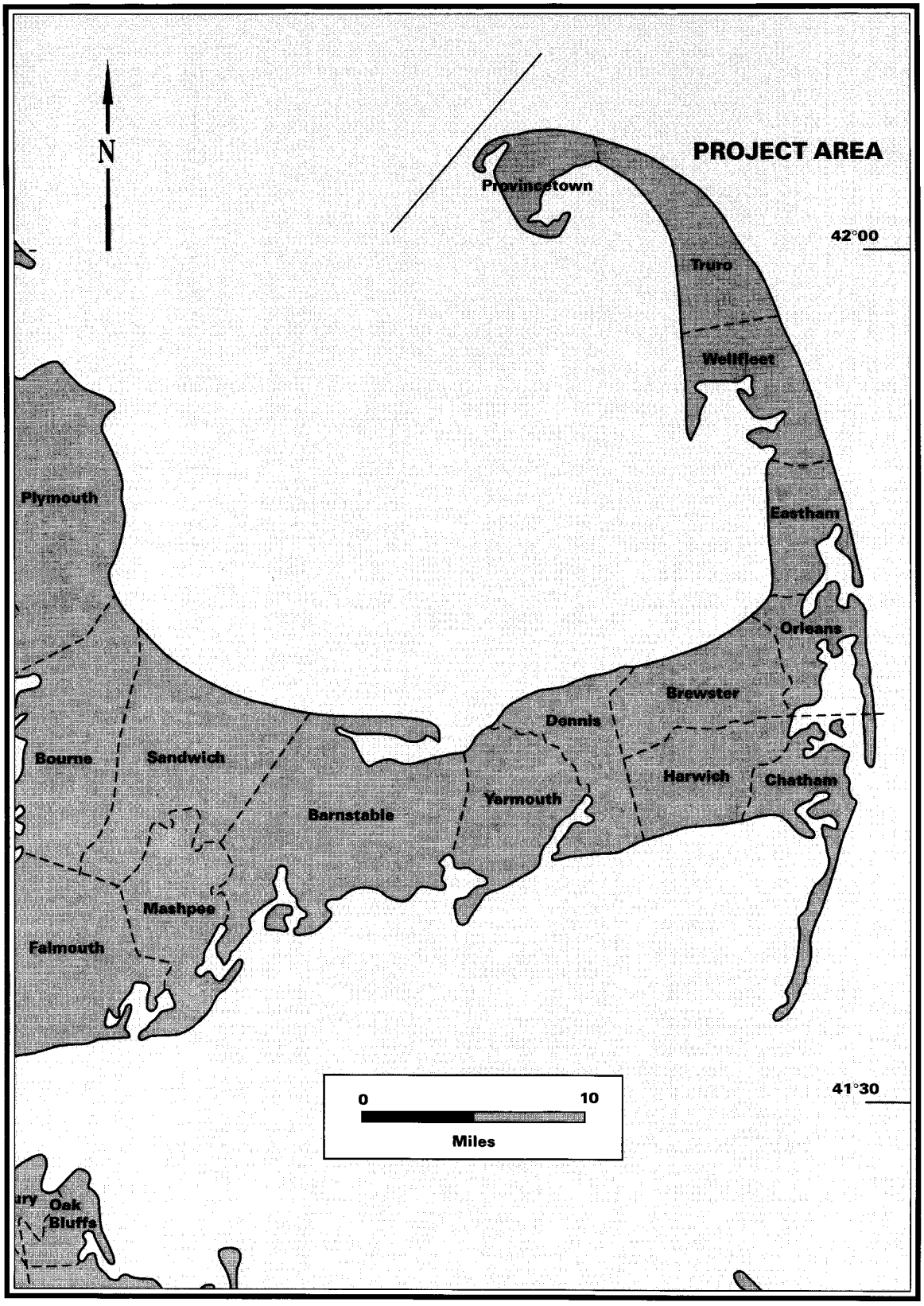
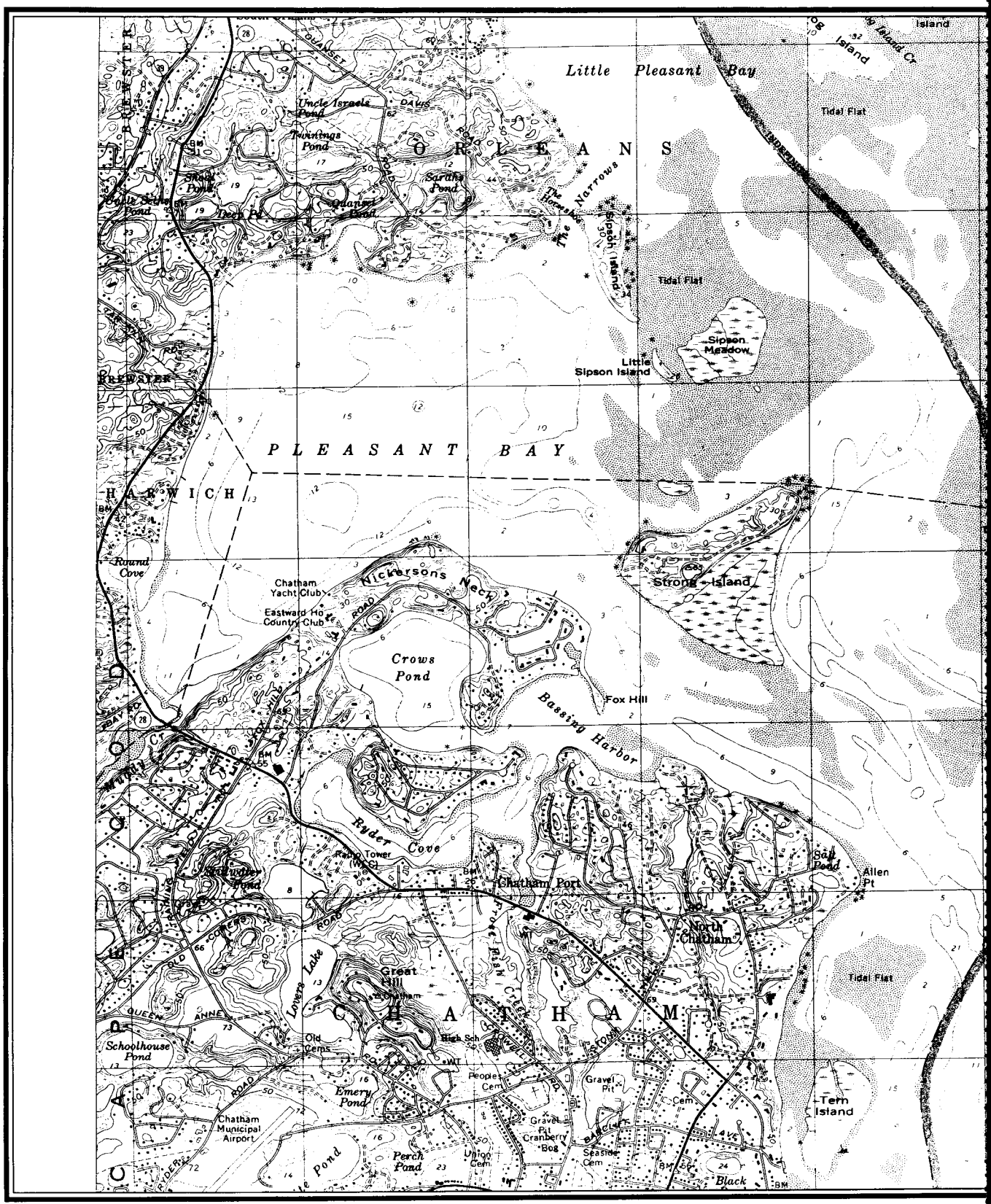
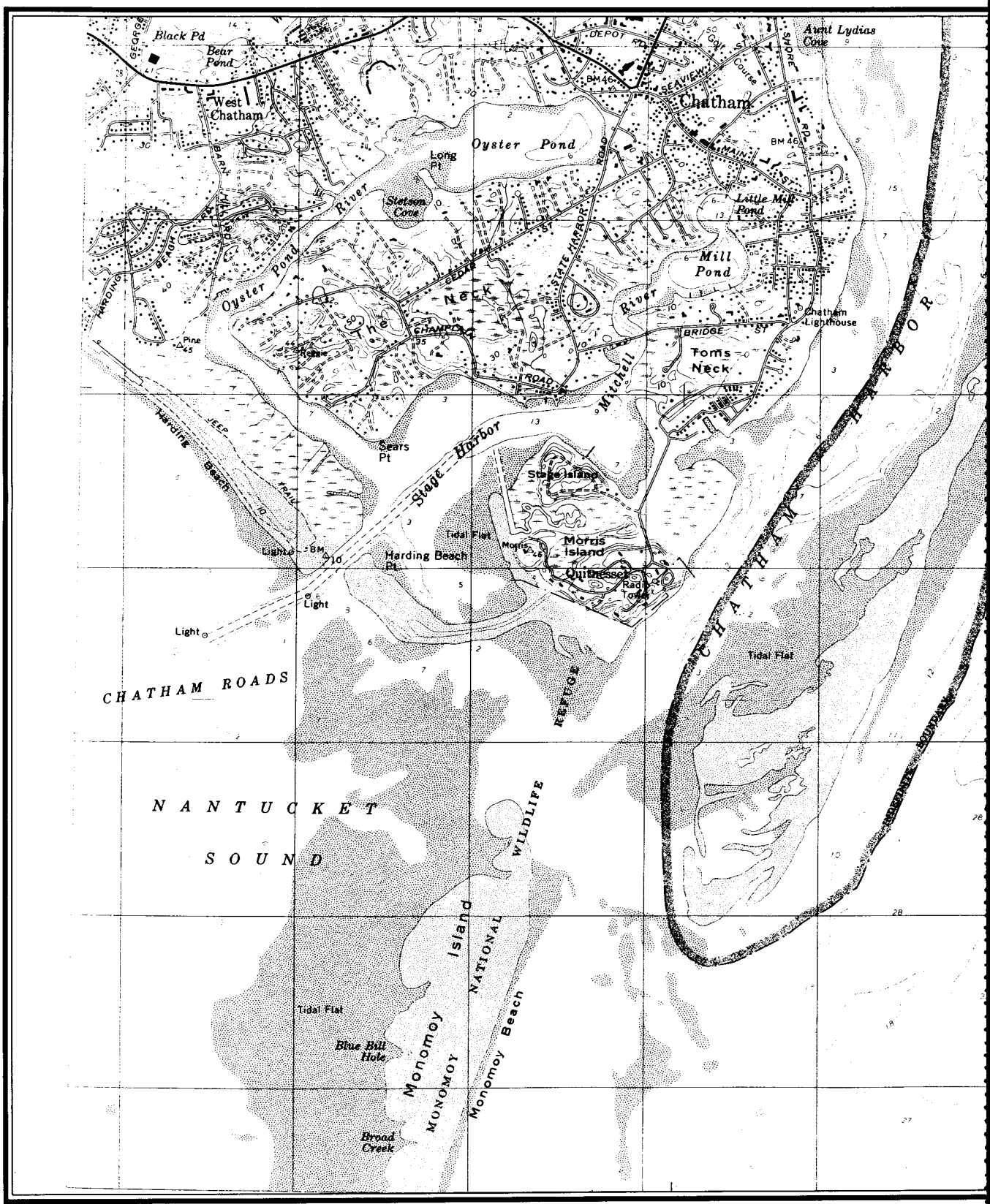


Figure 3. NORTH PORTION OF CHATHAM, MASS. USGS 7.5 MINUTE SERIES QUADRANGLE.
1:25,000 SCALE (REDUCED) TOPOGRAPHIC MAP (USGS 1974)



N
OCEAN
BEACH
NATIONAL SEASHORE
TRAIL
JEEP
Flat
SCALE 1:25 000
1 0 1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 5 0 1 KILOMETRE
CONTOUR INTERVAL 10 FEET

Figure 4. SOUTH PORTION OF CHATHAM, MASS. USGS 7.5 MINUTE SERIES QUADRANGLE. 1:25,000 SCALE (REDUCED) TOPOGRAPHIC MAP (USGS 1974)



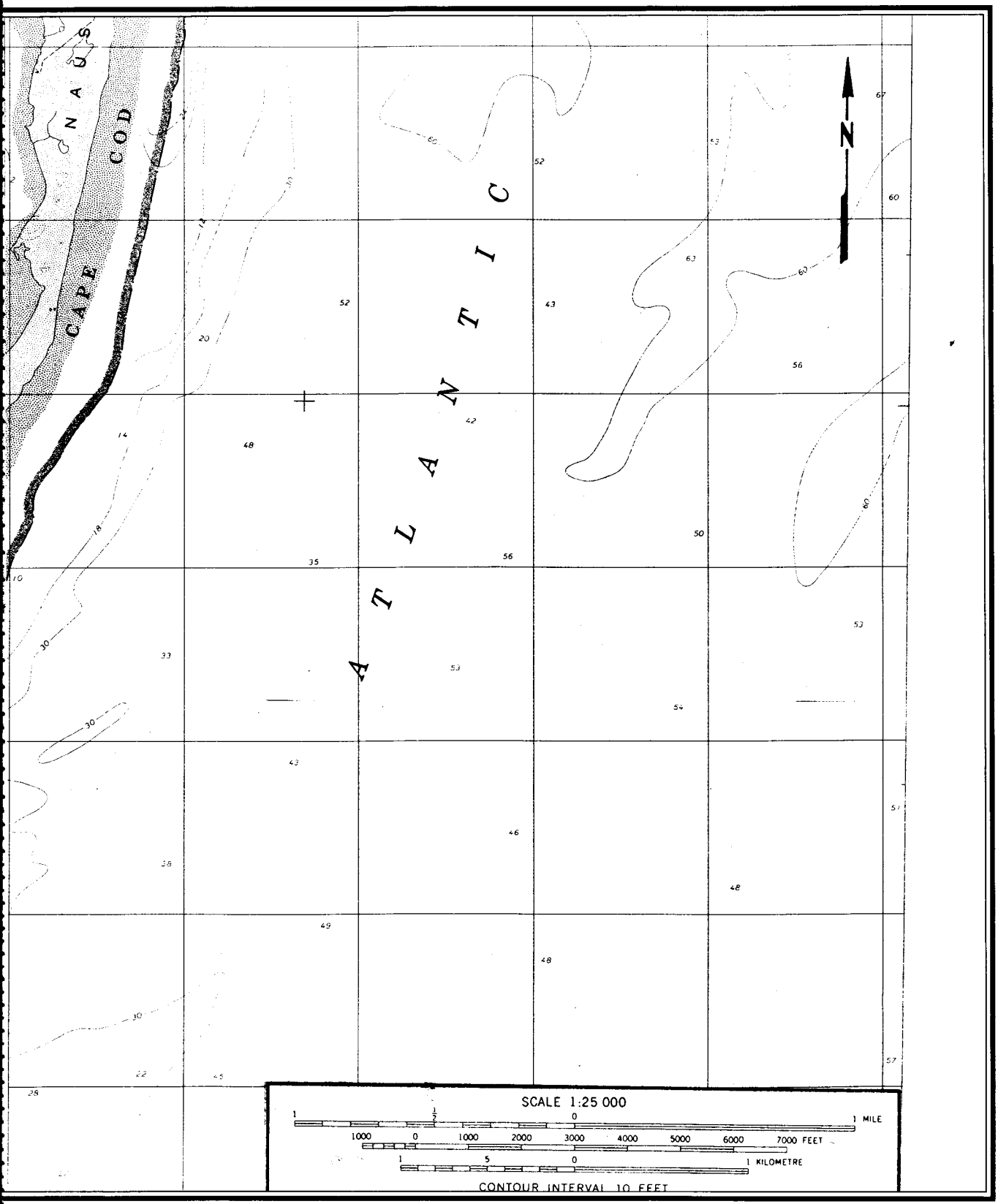

NAUS
CAPE COD
ATLANTIC
N
SCALE 1:25 000
1 0 1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 5 0 1 KILOMETRE
CONTOUR INTERVAL 10 FEET

Figure 5. NORTH PORTION OF ORLEANS, MASS. USGS 7.5 MINUTE SERIES QUADRANGLE. 1:25,000 SCALE (REDUCED) TOPOGRAPHIC MAP (USGS 1974 [REVISED 1977])

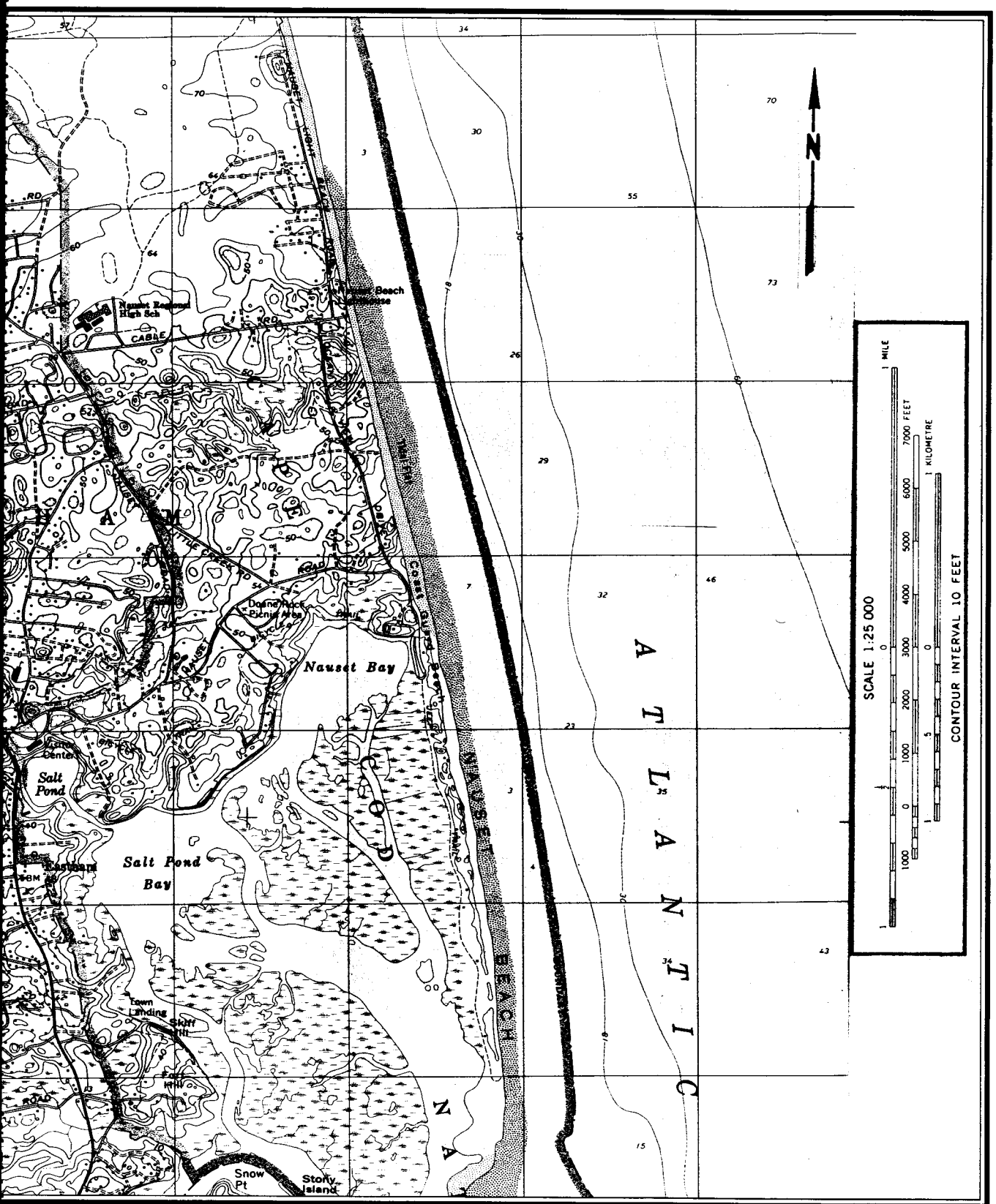
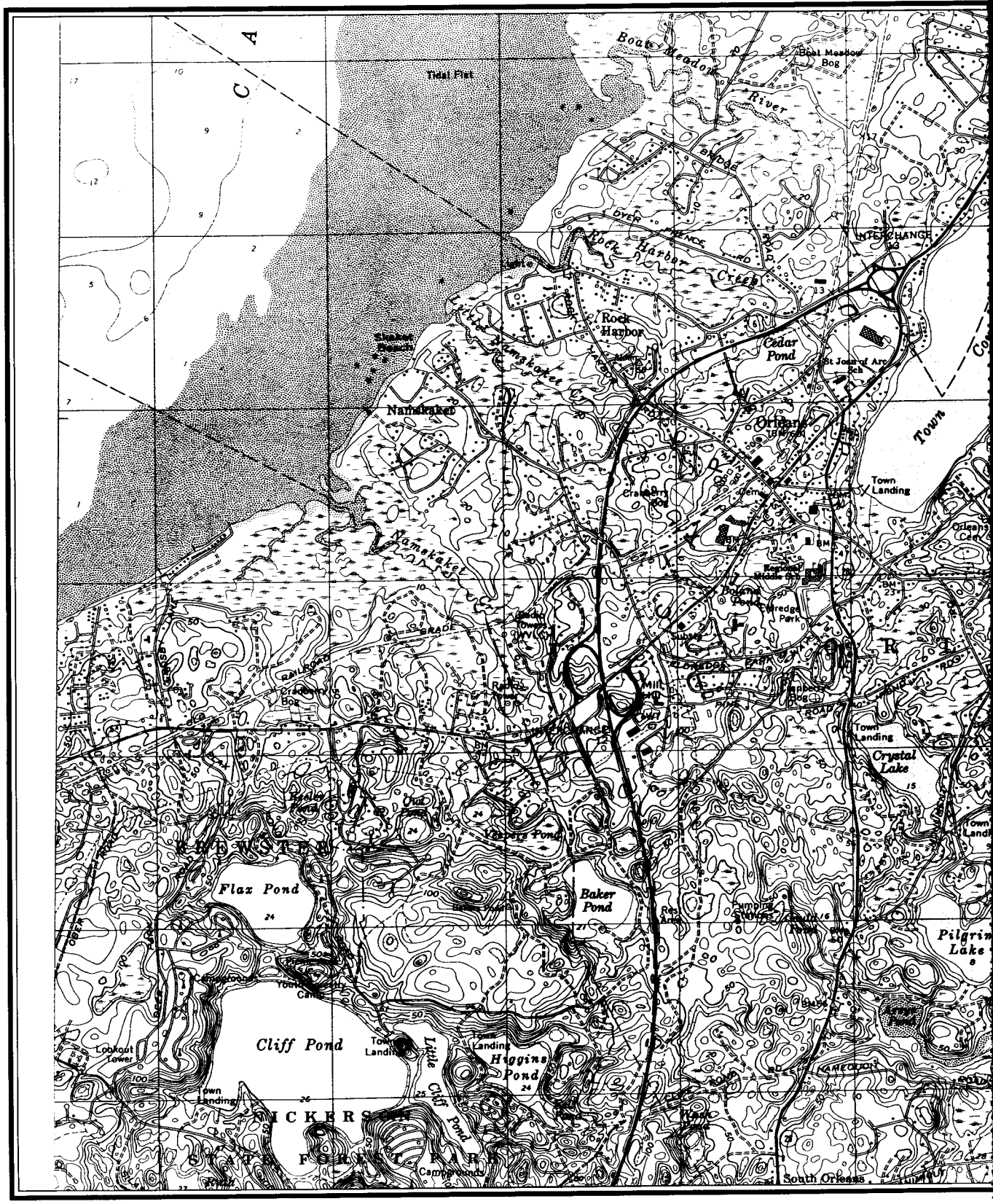
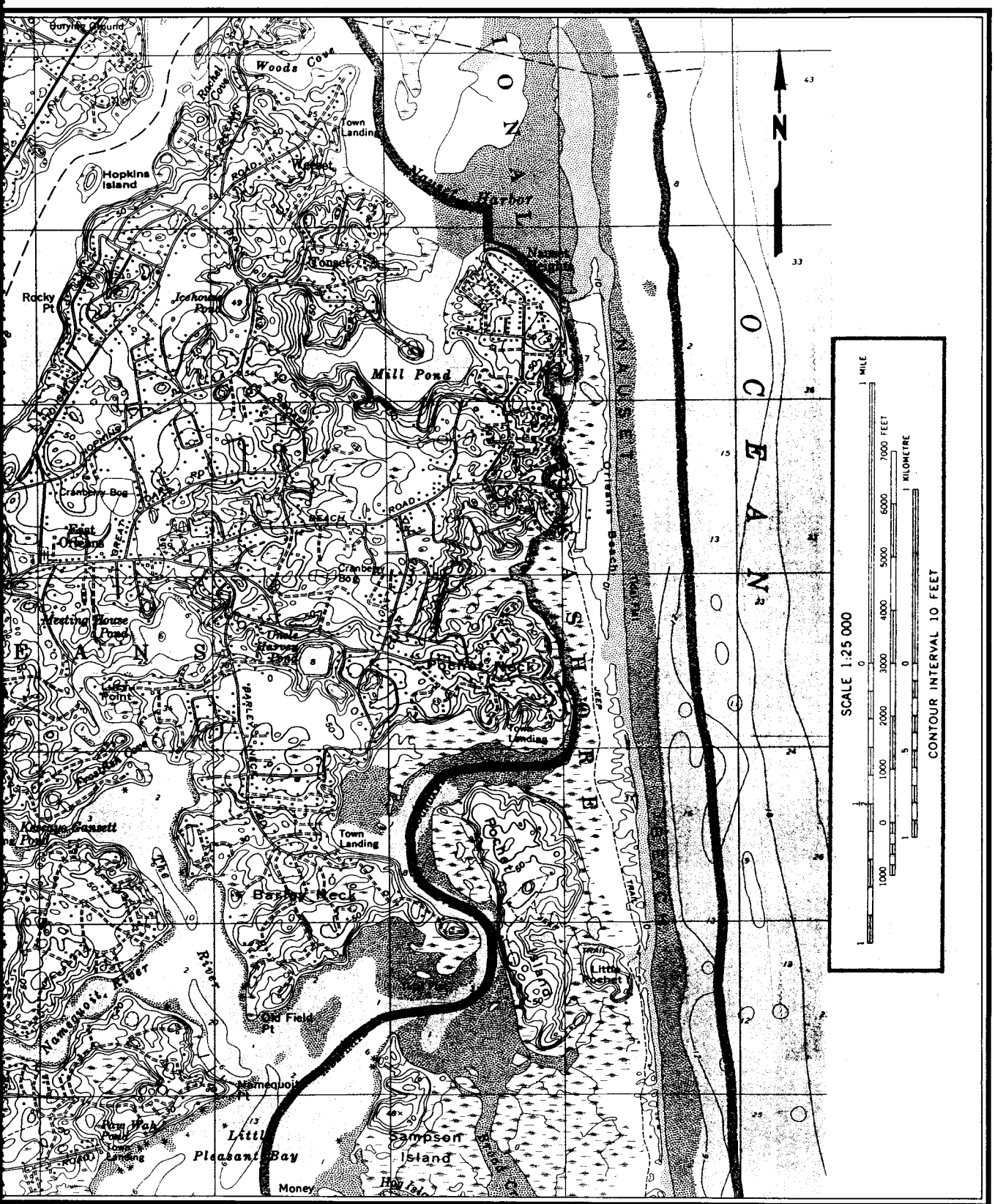

N
Nauset Regional High Sch
CABLE
Nauset Beach Lighthouse
Doane Rock Picnic Area
Nauset Bay
Salt Pond
Salt Pond Bay
Town Landing
Skiff Hill
Snow Pt
Stony Island
NAUSET BEACH
ATLANTIC
SCALE 1:25 000
1 MILE
7000 FEET
1 KILOMETRE
CONTOUR INTERVAL 10 FEET

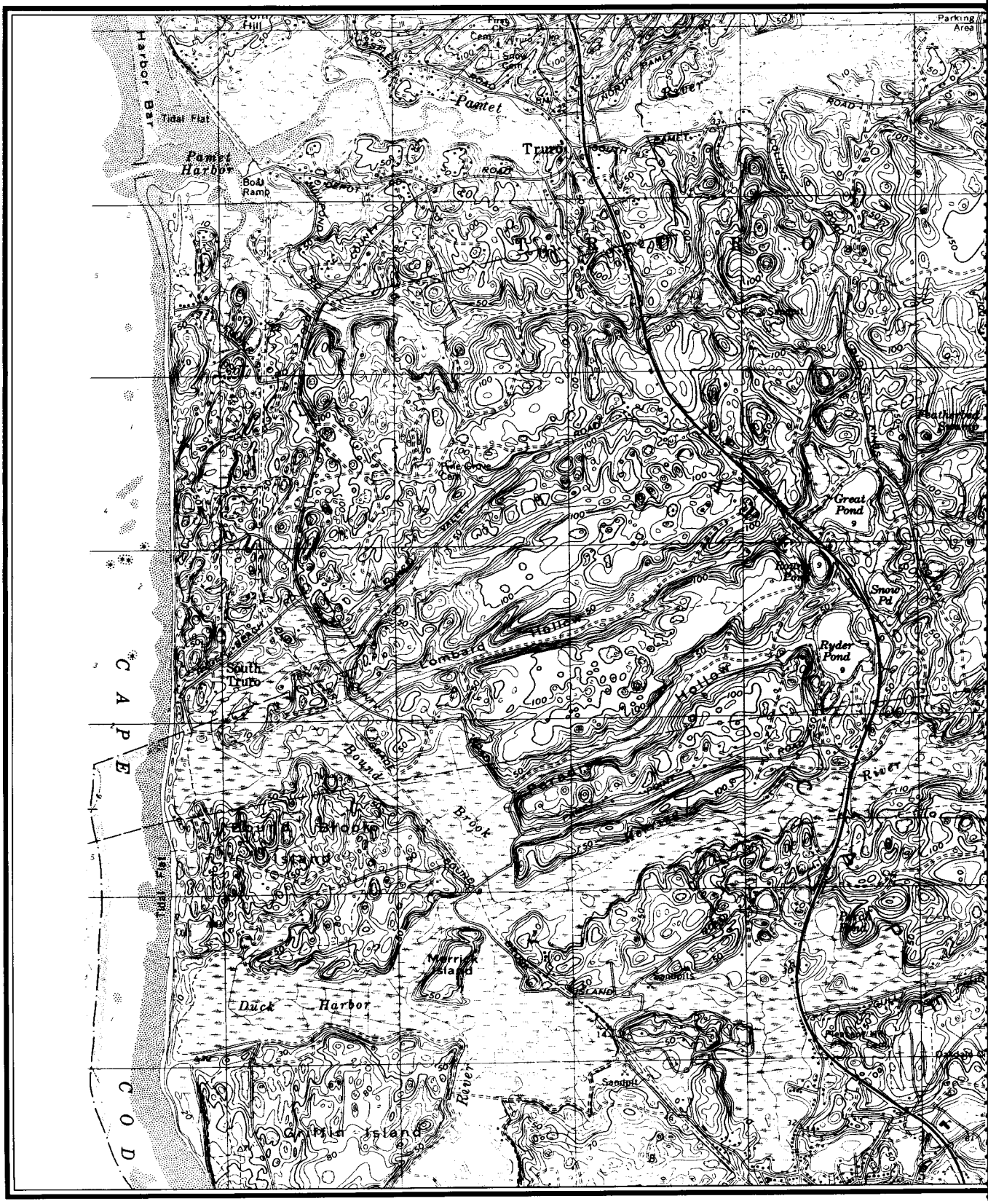
Figure 6. SOUTH PORTION OF ORLEANS, MASS. USGS 7.5 MINUTE SERIES QUADRANGLE. 1:25,000 SCALE (REDUCED) TOPOGRAPHIC MAP (USGS 1974 [REVISED 1977])





Burying Ground
Woods Cove
Rachel Cove
Town Landing
Hopkins Island
Nauset Harbor
Nauset Heights
Tonset
Rocky Pt
Icehouse Pond
Mill Pond
Cranberry Bog
East Orleans
Meeting House Pond
Uncle Harvey Pond
Pochet Neck
Town Landing
Barley Neck
Pochet Island
Little Pochet
Old Field Pt
Namequoit River
Namequoit Pt
Little Pleasant Bay
Sampson Island
Money
Orleans Beach
Tidal Flat
N
SCALE 1:25 000
1 MILE
7000 FEET
1 KILOMETRE
CONTOUR INTERVAL 10 FEET

Figure 7. NORTH PORTION OF WELLFLEET, MASS. USGS 7.5 MINUTE SERIES QUADRANGLE. 1:25,000 SCALE (REDUCED) TOPOGRAPHIC MAP (USGS 1972)



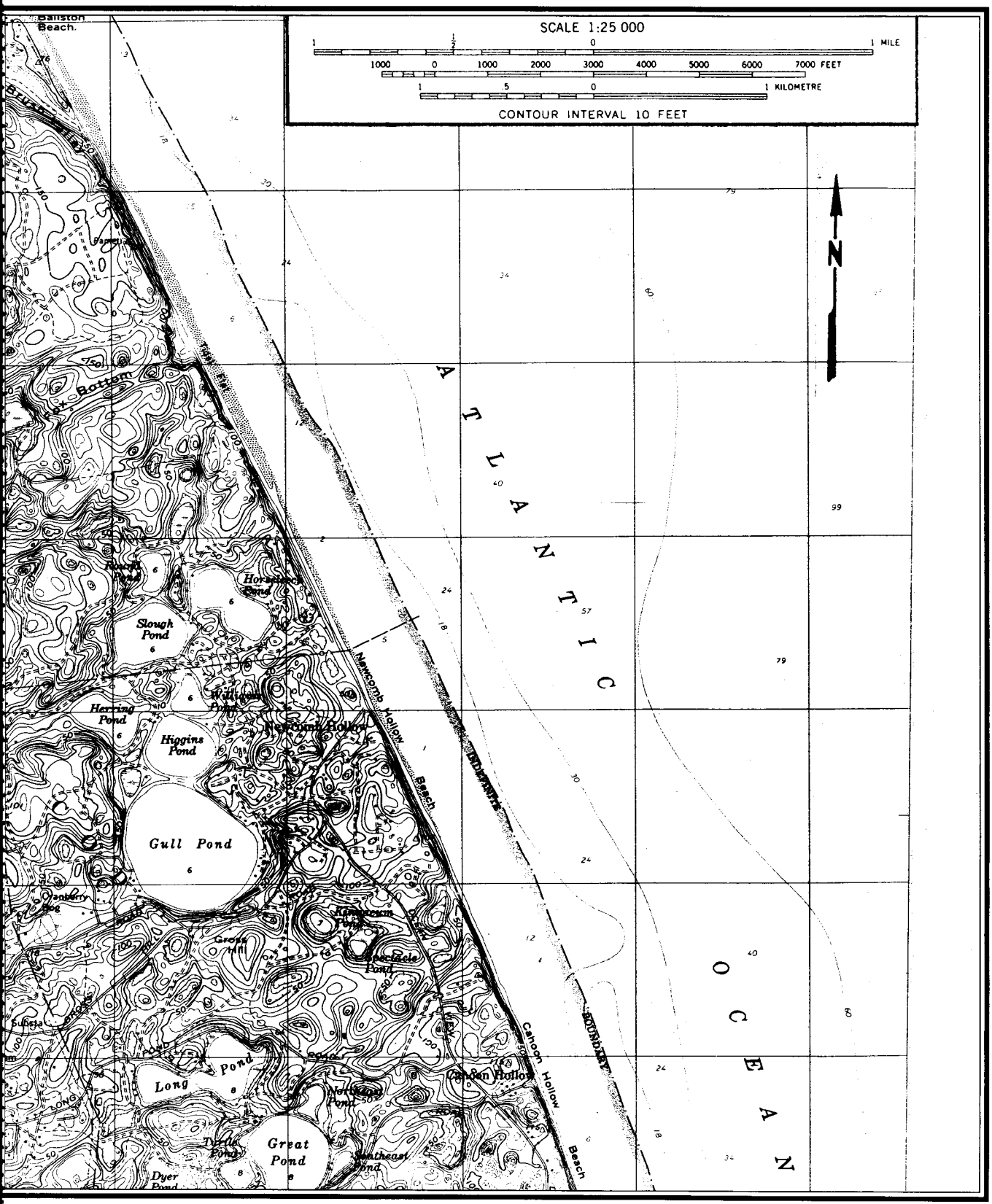
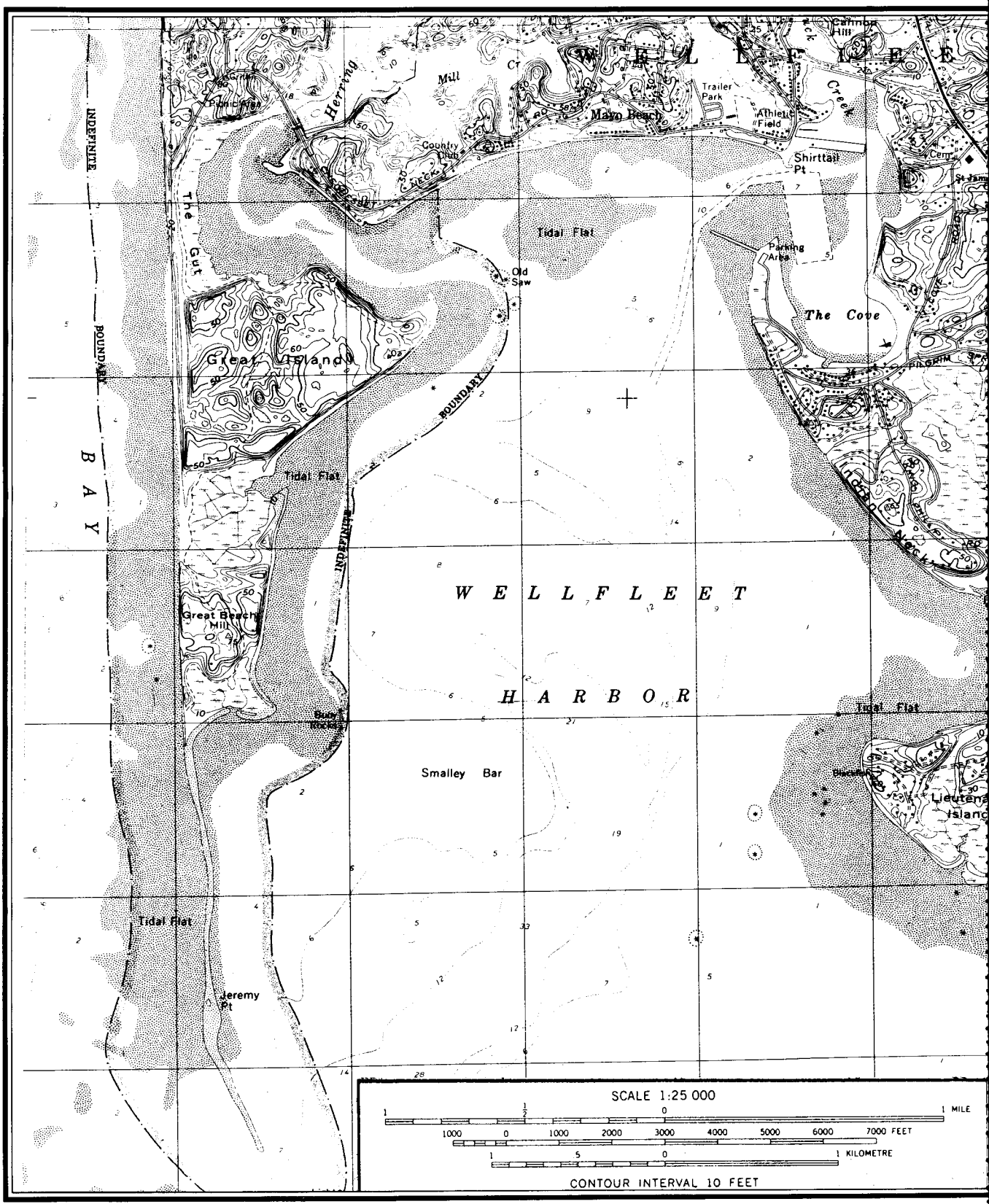

SCALE 1:25 000
1 MILE
7000 FEET
1 KILOMETRE
CONTOUR INTERVAL 10 FEET
N
Ballston Beach
Slough Pond
Herring Pond
Higgins Pond
Gull Pond
Newcomb Hollow
Newcomb Hollow Beach
Cahoon Hollow
Cahoon Hollow Beach
Long Pond
Great Pond
Northeast Pond
Southeast Pond
Dyer Pond
Cranberry Bog
Gross Hill
Spectacle Pond
ATLANTIC OCEAN

Figure 8. SOUTH PORTION OF WELLFLEET, MASS. USGS 7.5 MINUTE SERIES QUADRANGLE.
1:25,000 SCALE (REDUCED) TOPOGRAPHIC MAP (USGS 1972)



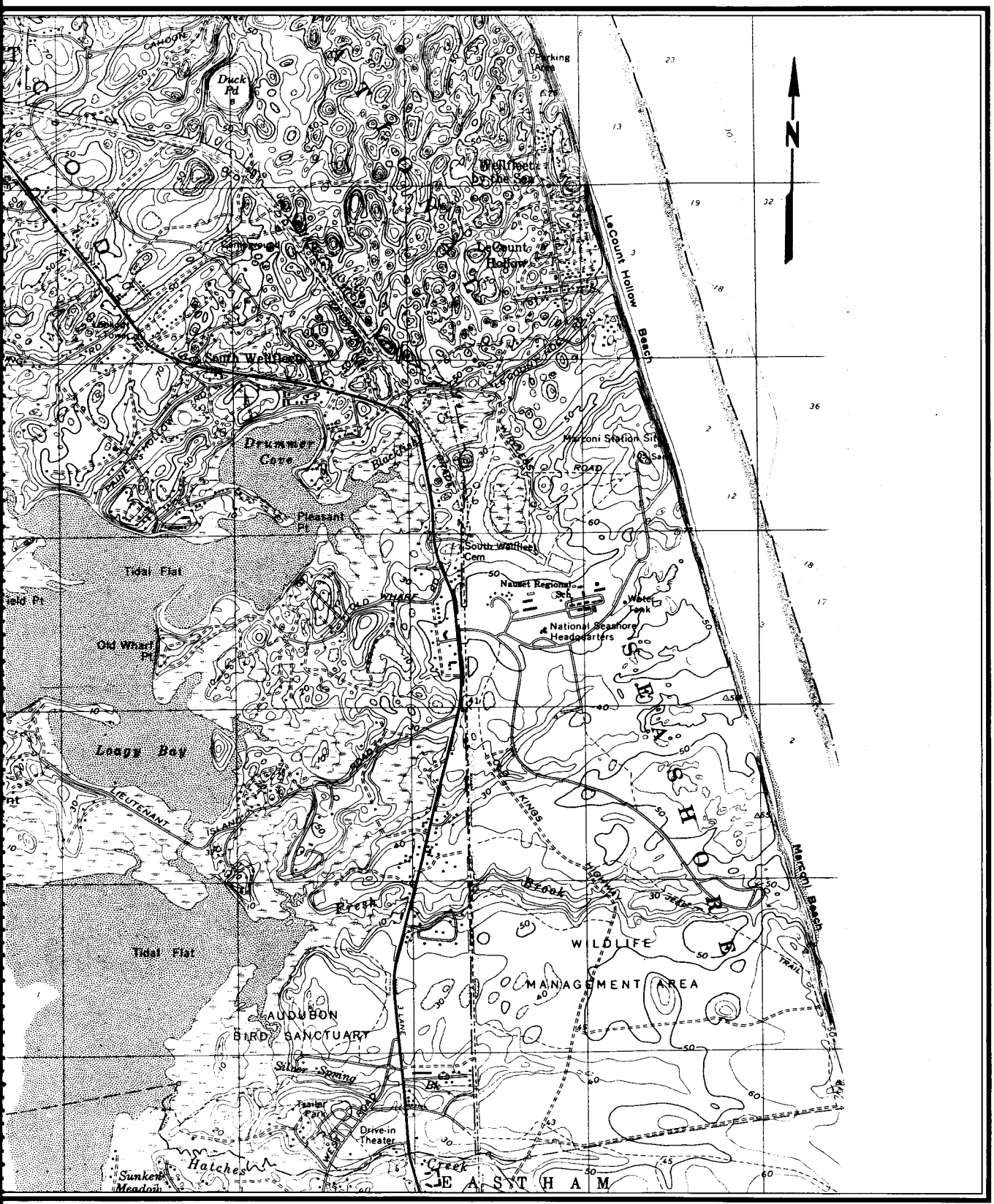
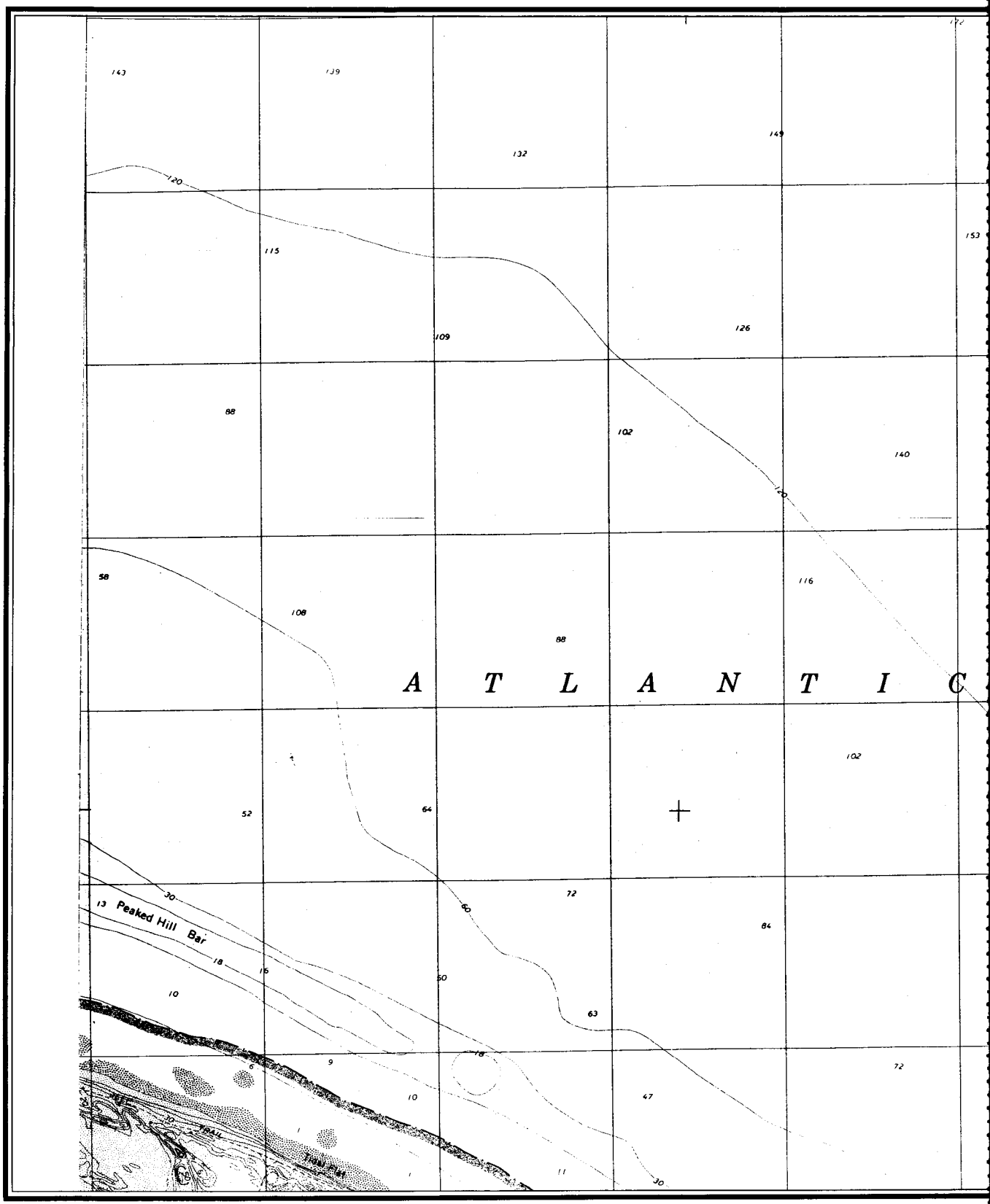

N
Duck Pd
Parking Area
Wellfleet by the Sea
LeCount Hollow
LeCount Hollow Beach
South Wellfleet
Drummer Cove
Blackfish
Marconi Station Site
ROAD
Pleasant Pt
South Wellfleet Cem
Tidal Flat
Nauset Regional Sch
Water Tank
National Seashore Headquarters
Old Wharf Pt
Loagy Bay
LIEUTENANT
ISLAND
KINGS
HIGHWAY
Fresh
Brook
Marconi Beach
Tidal Flat
WILDLIFE
MANAGEMENT AREA
TRAIL
AUDUBON
BIRD SANCTUARY
3 LANE
Silver Spring
Bk
Trailer Park
Drive-in Theater
Hatches
Creek
Sunken Meadow
EASTHAM

Figure 9. NORTH PORTION OF NORTH TRURO, MASS. USGS 7.5 MINUTE SERIES QUADRANGLE. 1:25,000 SCALE (REDUCED) TOPOGRAPHIC MAP (USGS 1972 [REVISED 1977])



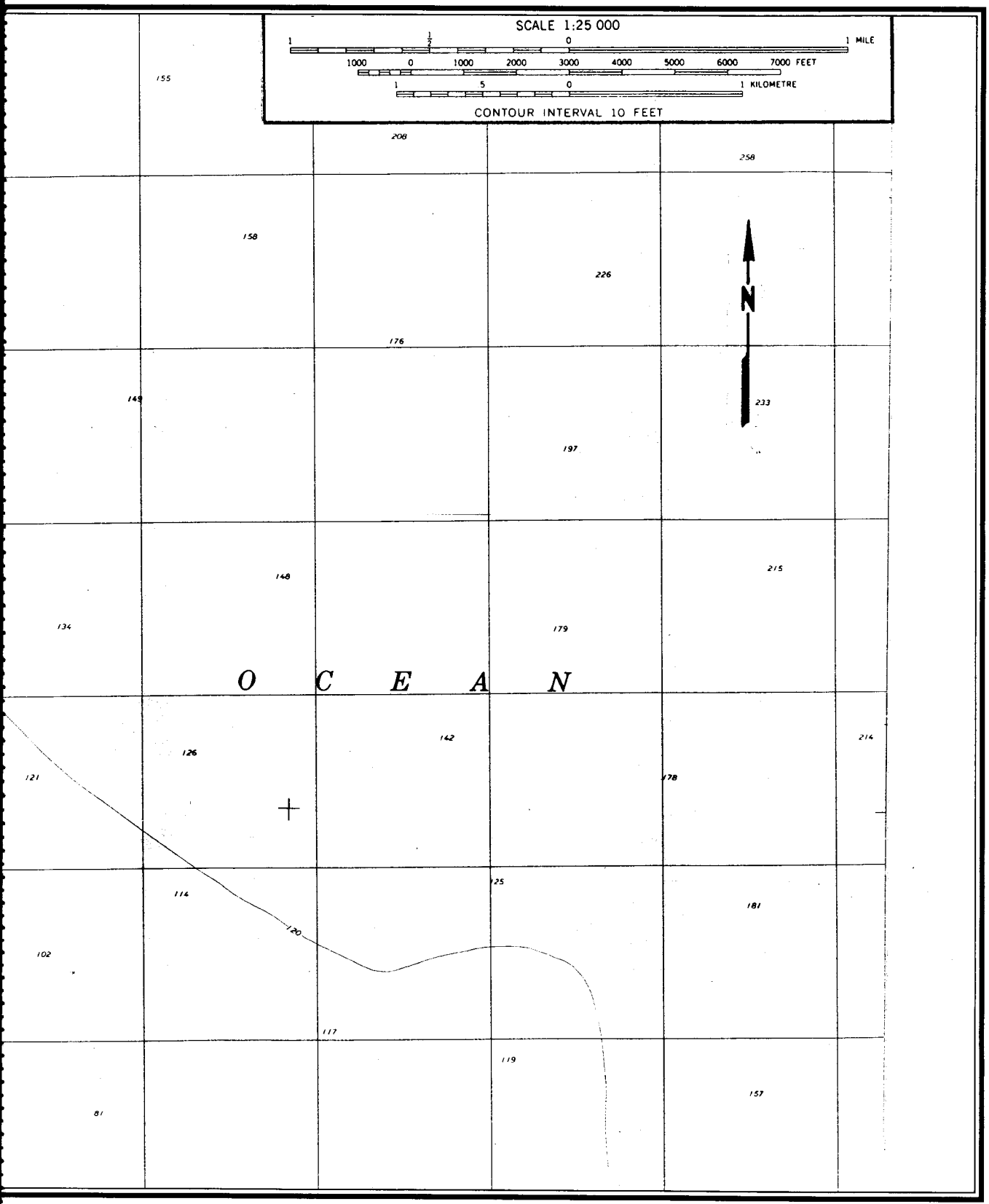
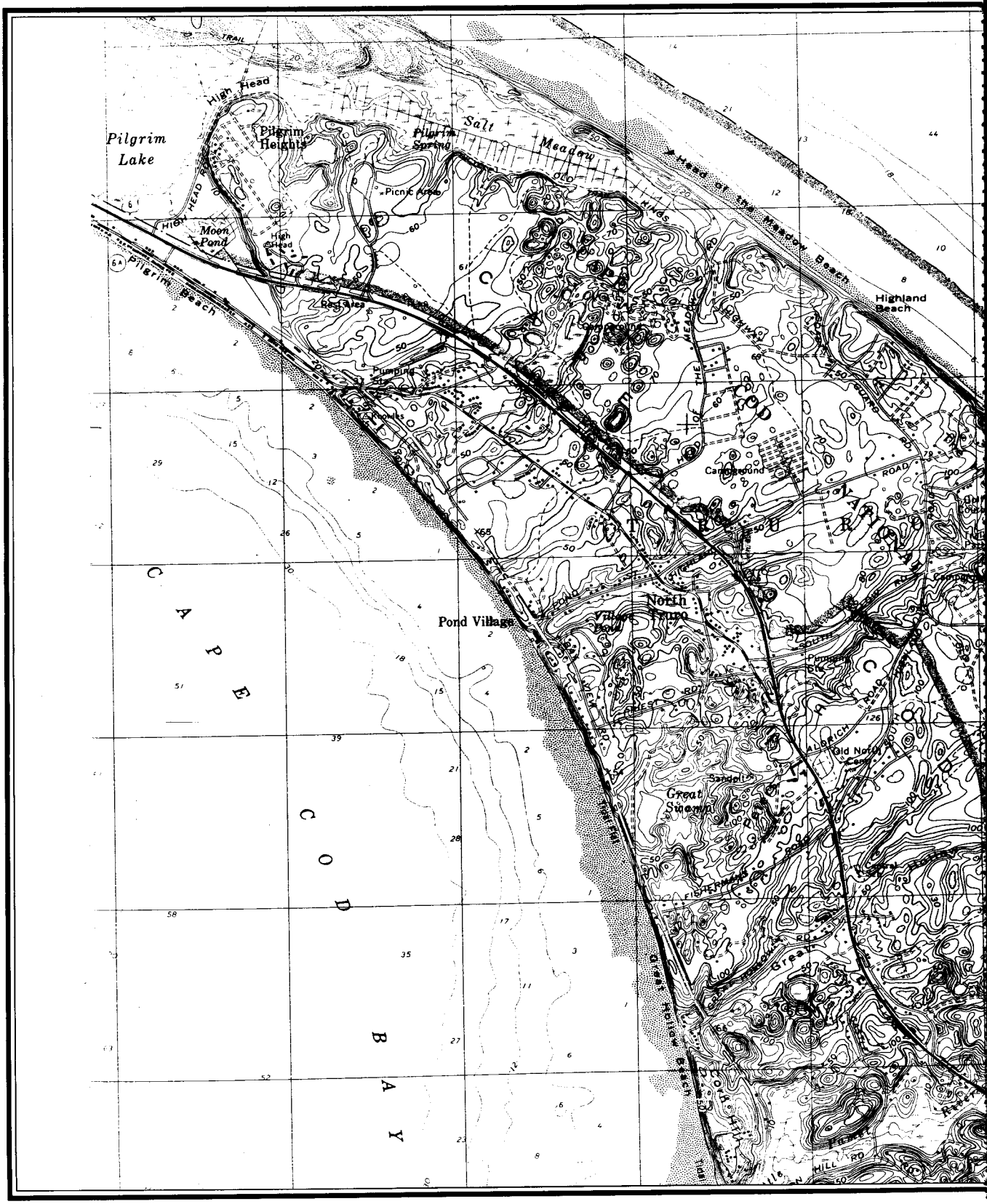

SCALE 1:25 000
1 ½ 0 1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 5 0 1 KILOMETRE
CONTOUR INTERVAL 10 FEET
N
OCEAN
155
208
258
158
226
176
149
233
197
148
215
134
179
126
142
214
121
178
114
125
181
120
102
117
119
157
81

Figure 10. SOUTH PORTION OF NORTH TRURO, MASS. USGS 7.5 MINUTE SERIES QUADRANGLE. 1:25,000 SCALE (REDUCED) TOPOGRAPHIC MAP (USGS 1972 [REVISED 1977])



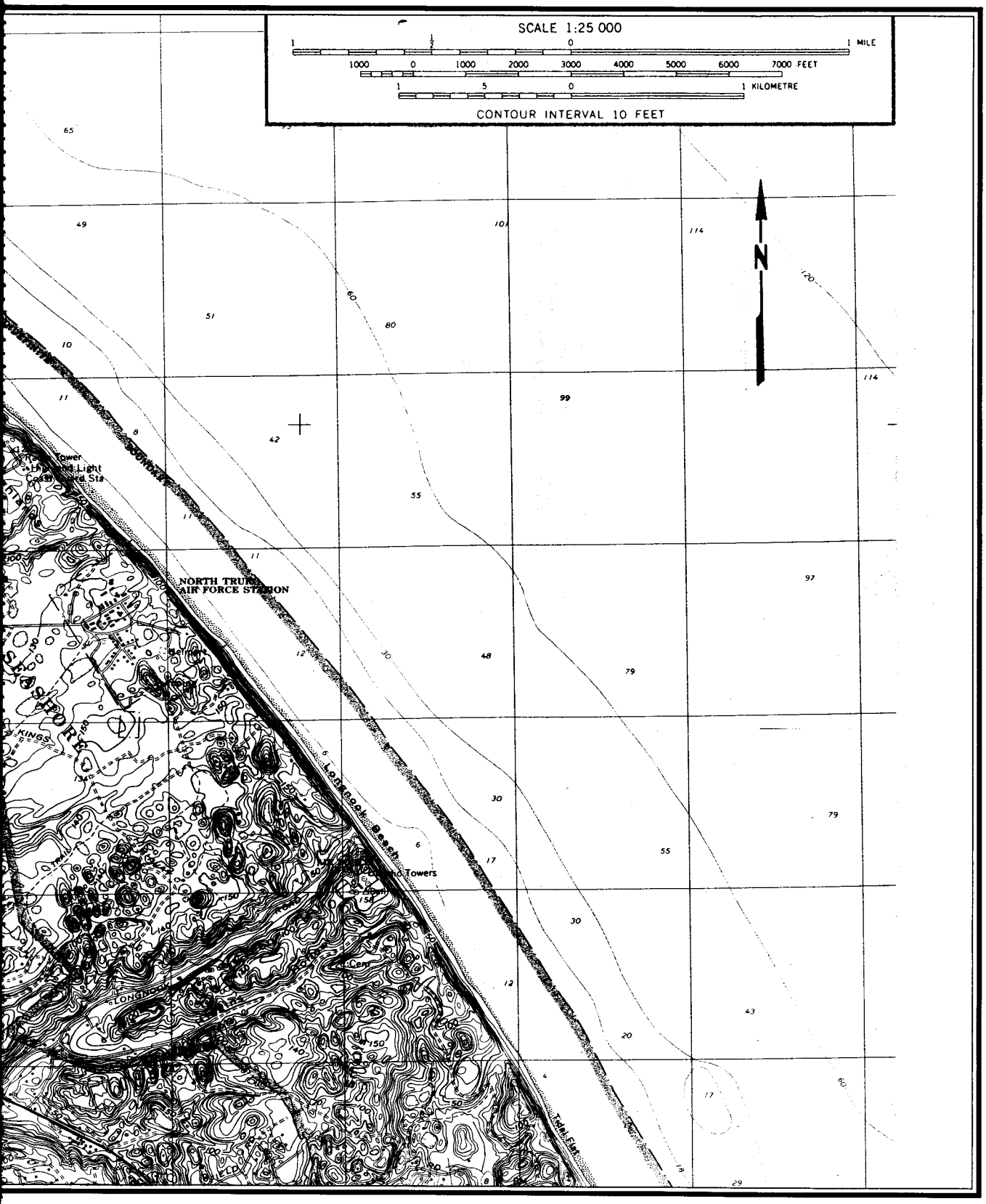
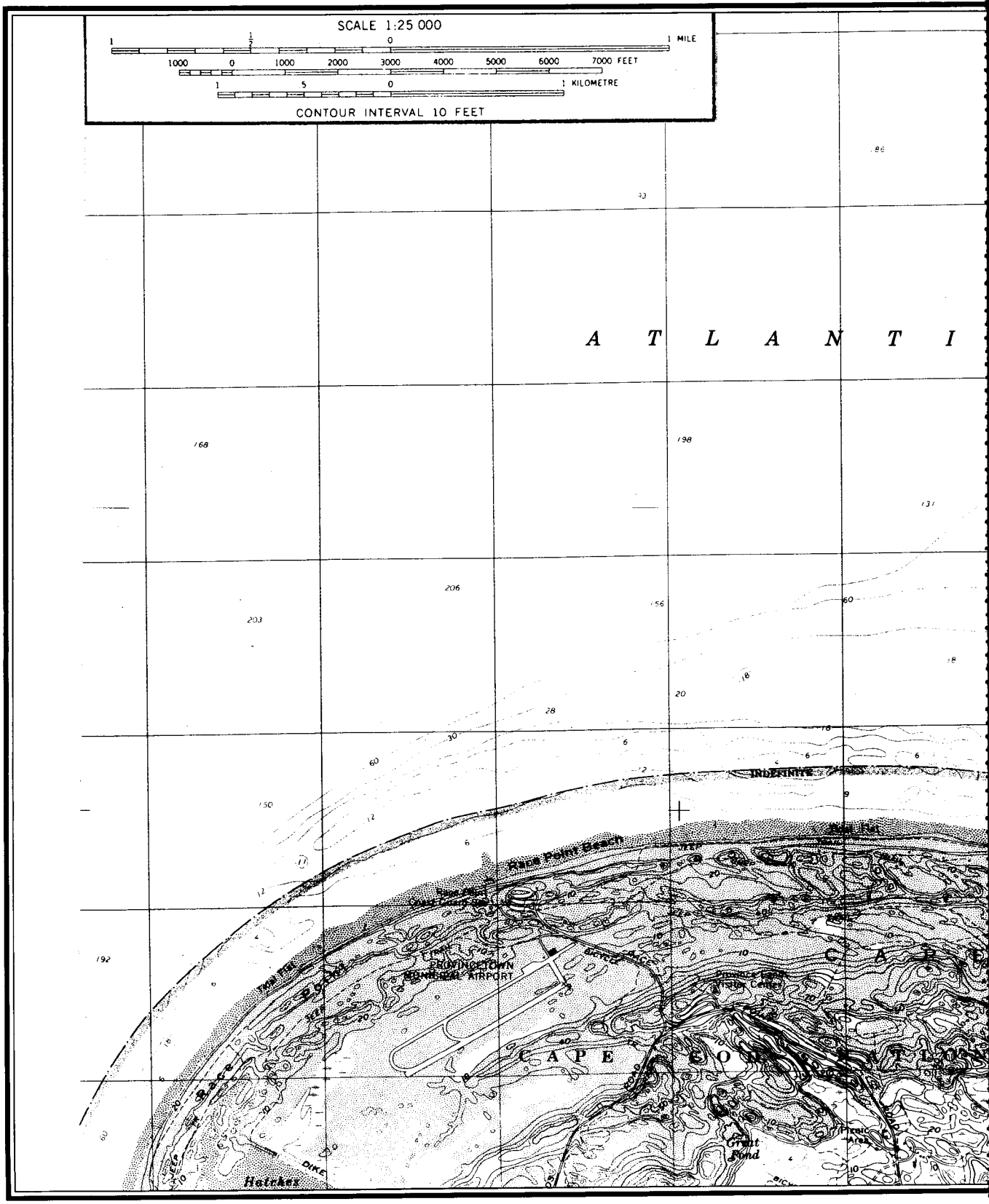

SCALE 1:25 000
1 MILE
7000 FEET
1 KILOMETRE
CONTOUR INTERVAL 10 FEET
N
NORTH TRUR
AIR FORCE STATION
Longnook Beach
Towers
Tidal Flat

Figure 11. NORTH PORTION OF PROVINCETOWN, MASS. USGS, 7.5 MINUTE SERIES QUADRANGLE. 1:25,000 SCALE (REDUCED) TOPOGRAPHIC MAP (USGS 1972)



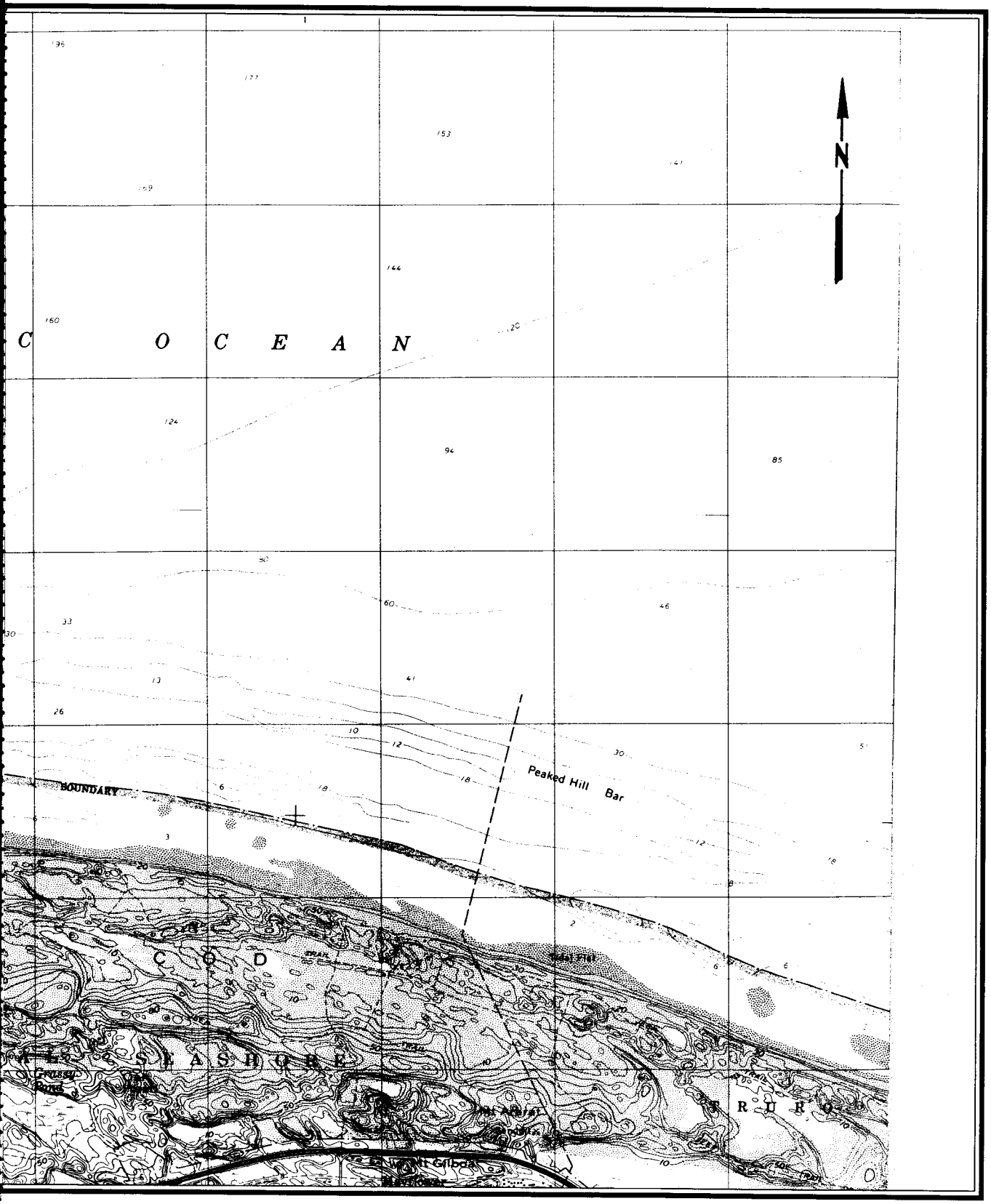
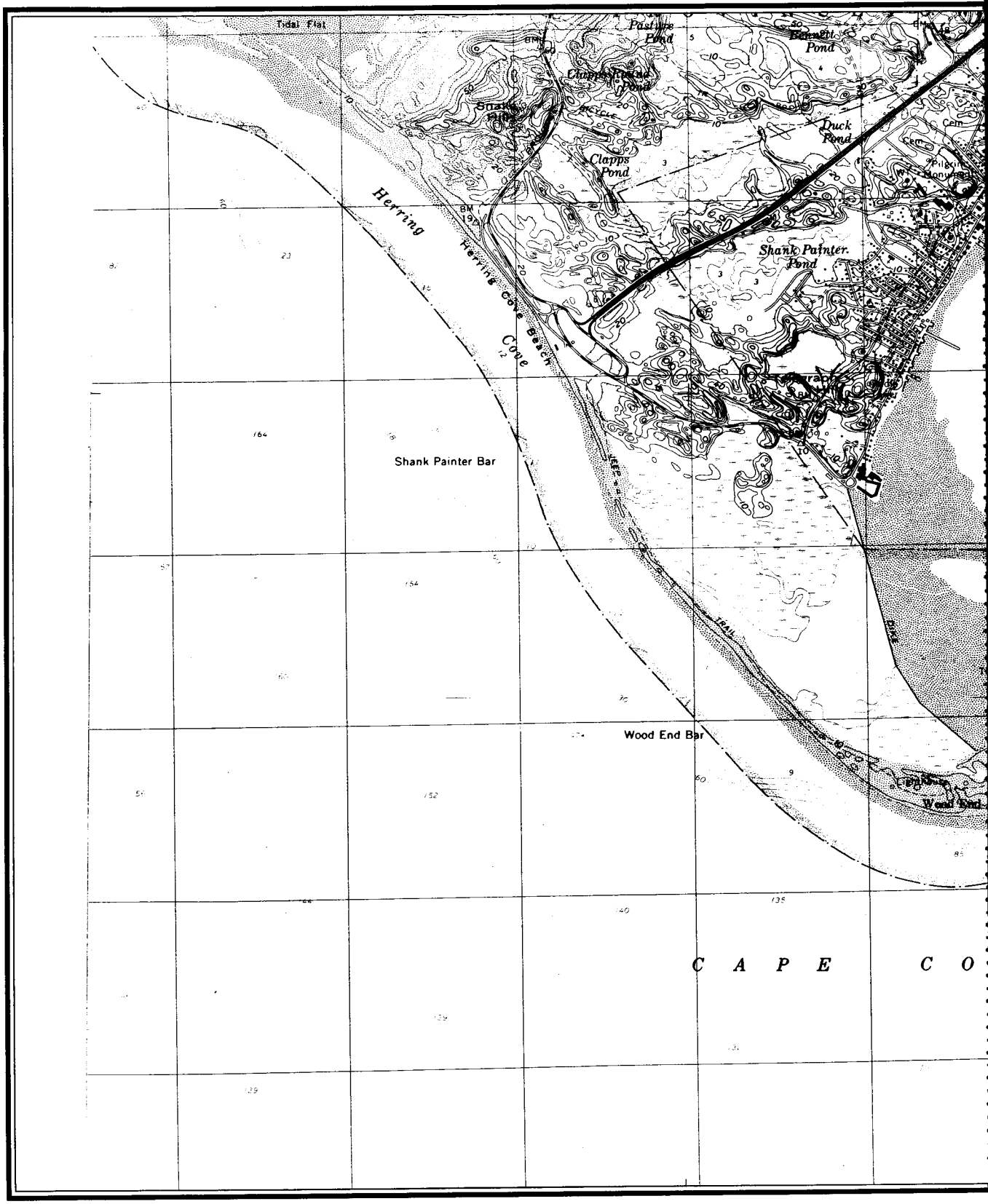

N
C O C E A N
Peaked Hill Bar
BOUNDARY
C O D
S E A S H O R E
T R U R O

Figure 12. SOUTH PORTION OF PROVINCETOWN, MASS. USGS, 7.5 MINUTE SERIES QUADRANGLE. 1:25,000 SCALE (REDUCED) TOPOGRAPHIC MAP (USGS 1972)



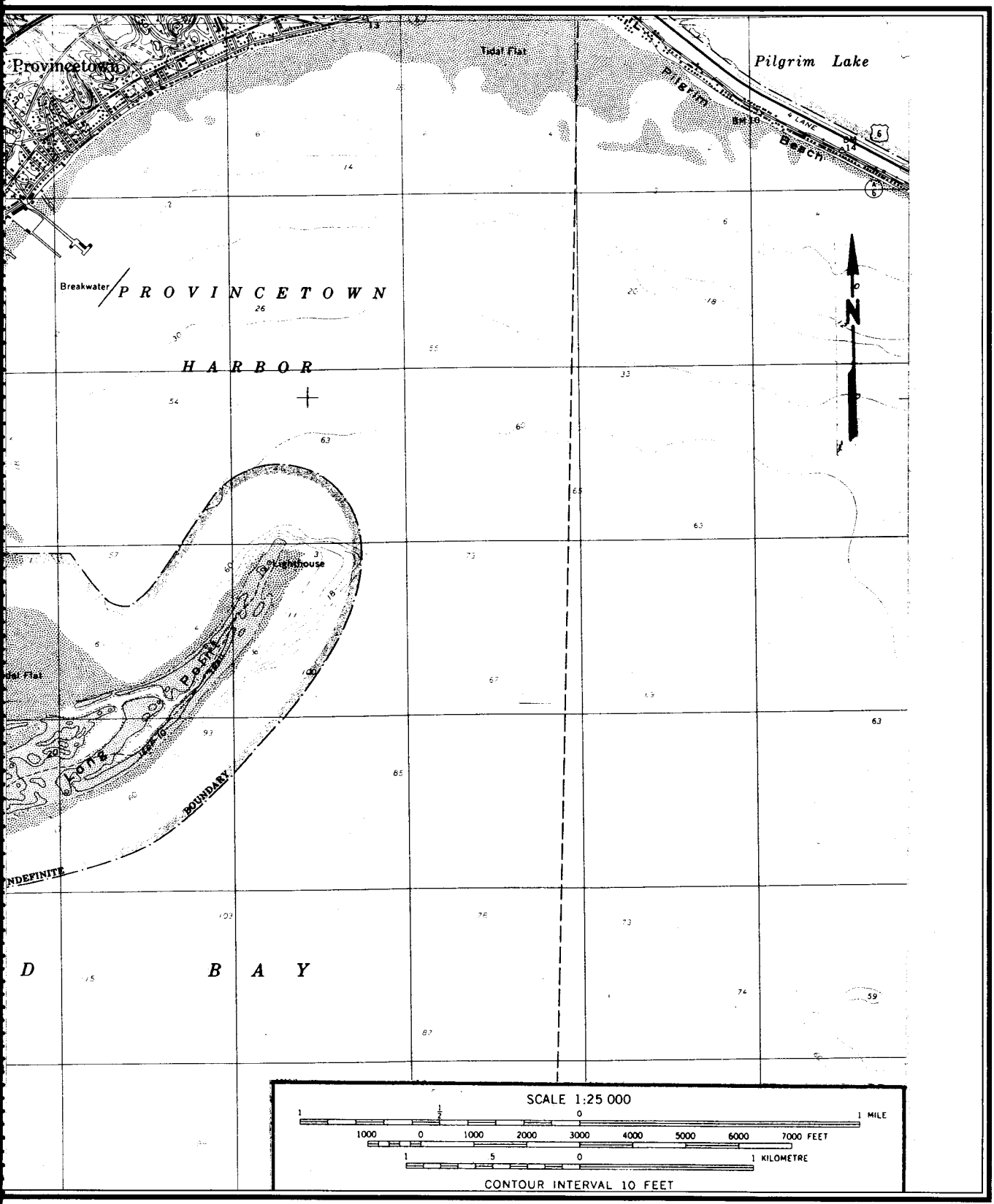

Provincetown
Tidal Flat
Pilgrim Lake
PILGRIM LANE
Beach
Breakwater
PROVINCETOWN
HARBOR
N
Lighthouse
POINT
LONG
BOUNDARY
NDEFINITE
D B A Y
SCALE 1:25 000
1 0 1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 5 0 1 KILOMETRE
CONTOUR INTERVAL 10 FEET

Figure 13. NATIVE PLACE NAMES OF THE LOWER CAPE

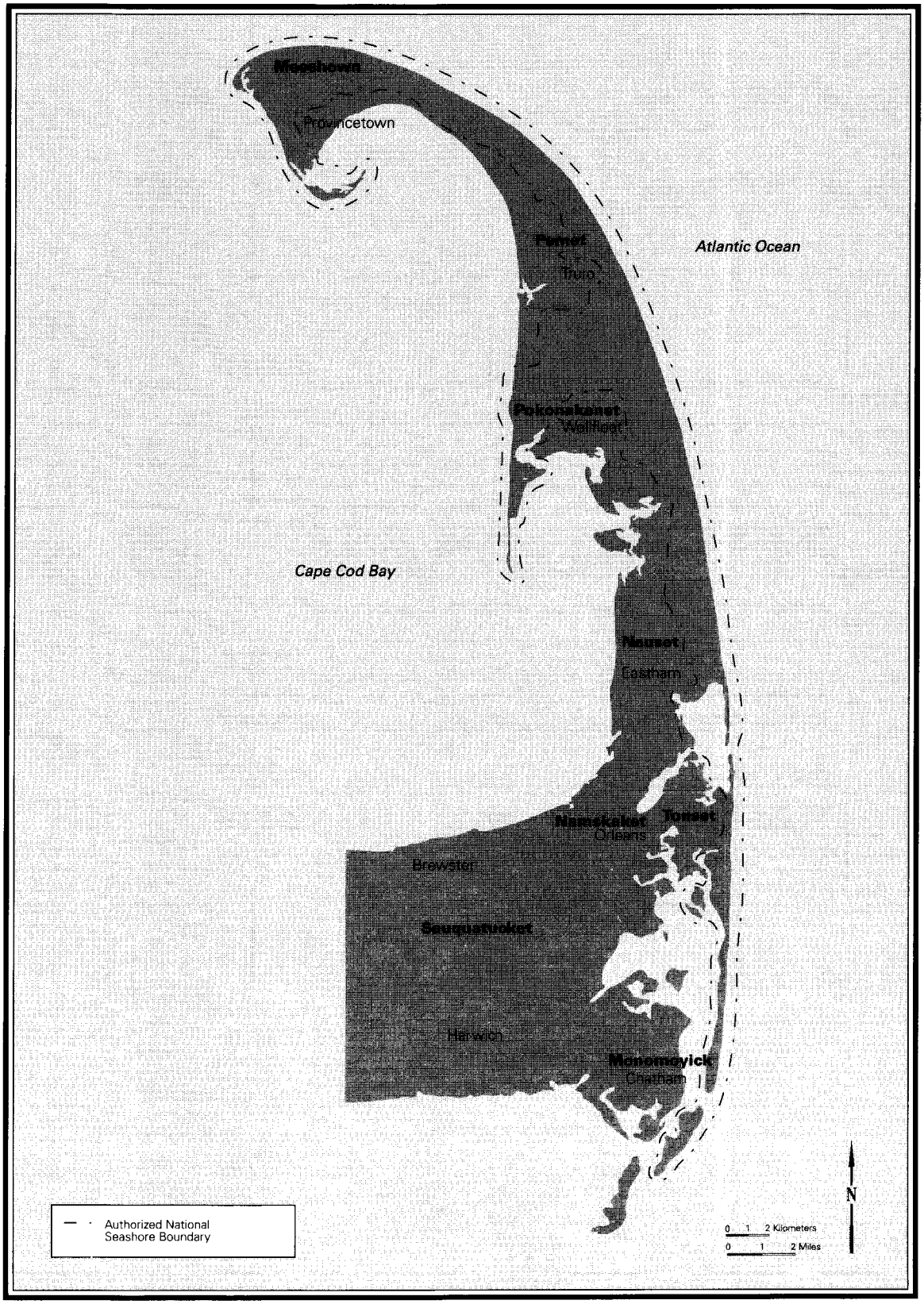
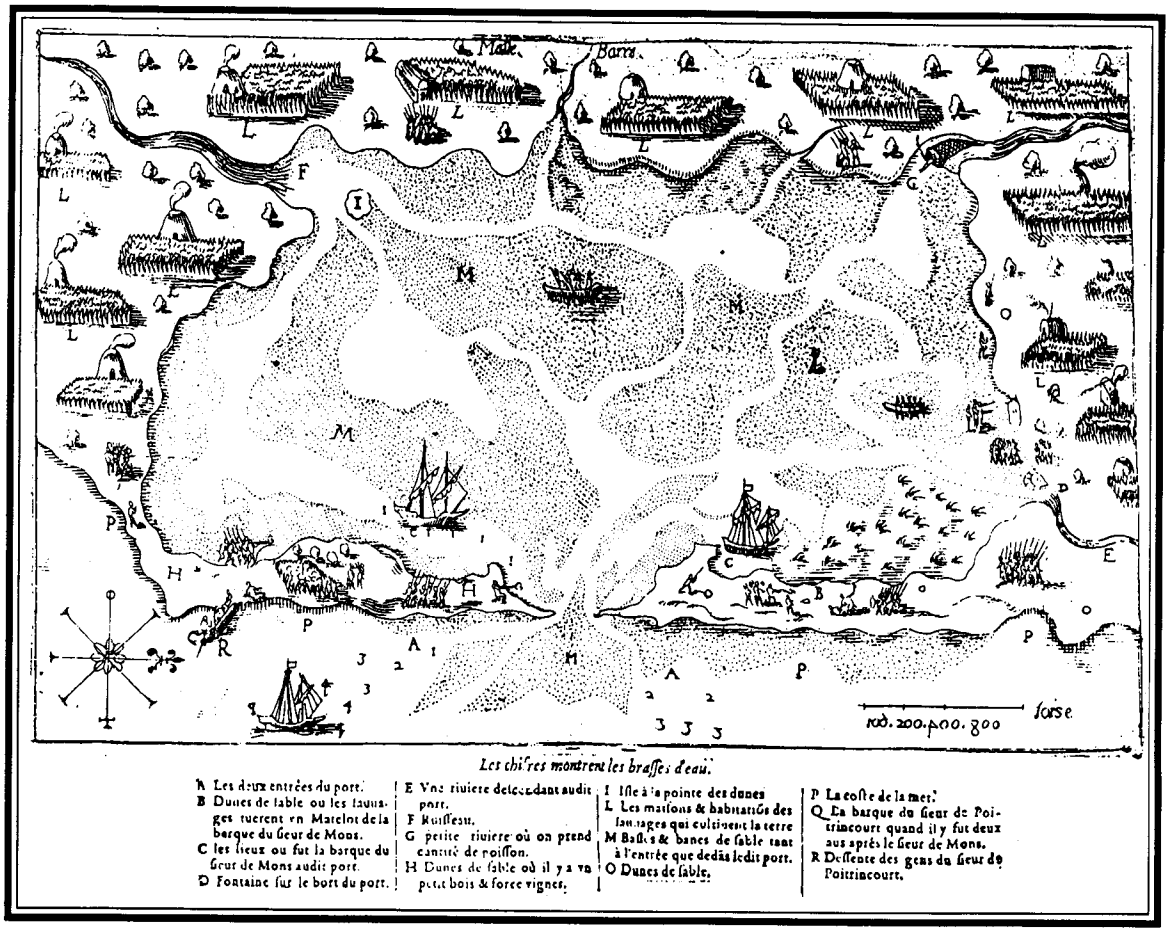


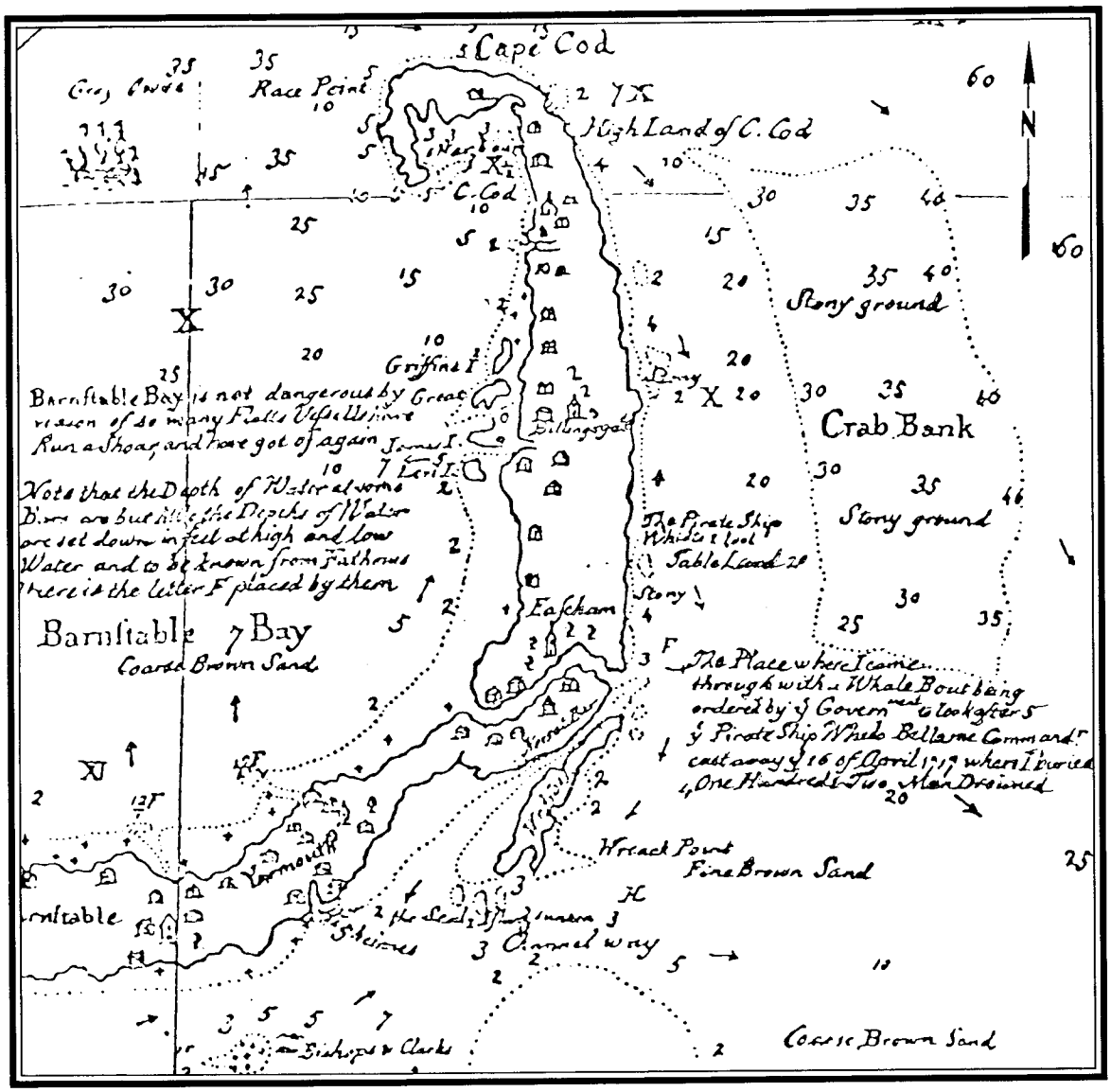
Figure 14.



Les chifres montrent les brasses d'eau.

A Les deux entrées du port.
B Dunes de sable ou les sauuages tuerent en Matelot de la barque du sieur de Mons.
C les lieux ou fut la barque du sieur de Mons audit port.
D Fontaine sur le bort du port.
E Vne riuiere descendant audit port.
F Ruisseau.
G petite riuiere où on prend quantité de poisson.
H Dunes de sable où il y a vn petit bois & force vignes.
I Isle à la pointe des dunes
L Les maisons & habitatiõs des sauuages qui cultiuent la terre
M Basses & bancs de sable tant à l'entrée que dedãs ledit port.
O Dunes de sable.
P La coste de la mer.
Q La barque du sieur de Poitrincourt quand il y fut deux ans après le sieur de Mons.
R Descente des gens du sieur de Poitrincourt.

Figure 15. 1717 MAP OF CAPE COD (SOUTHACK 1717)



1795 MAP OF CHATHAM (HOWES ET AL. 1795)

Figure 16.

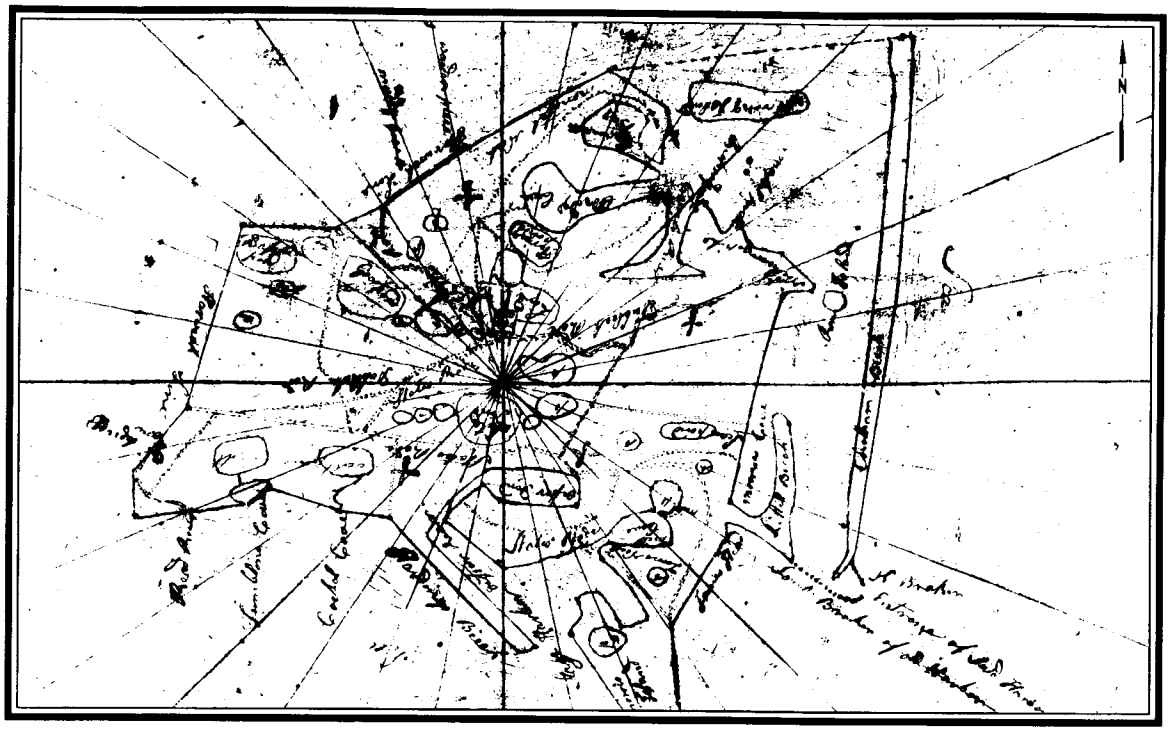
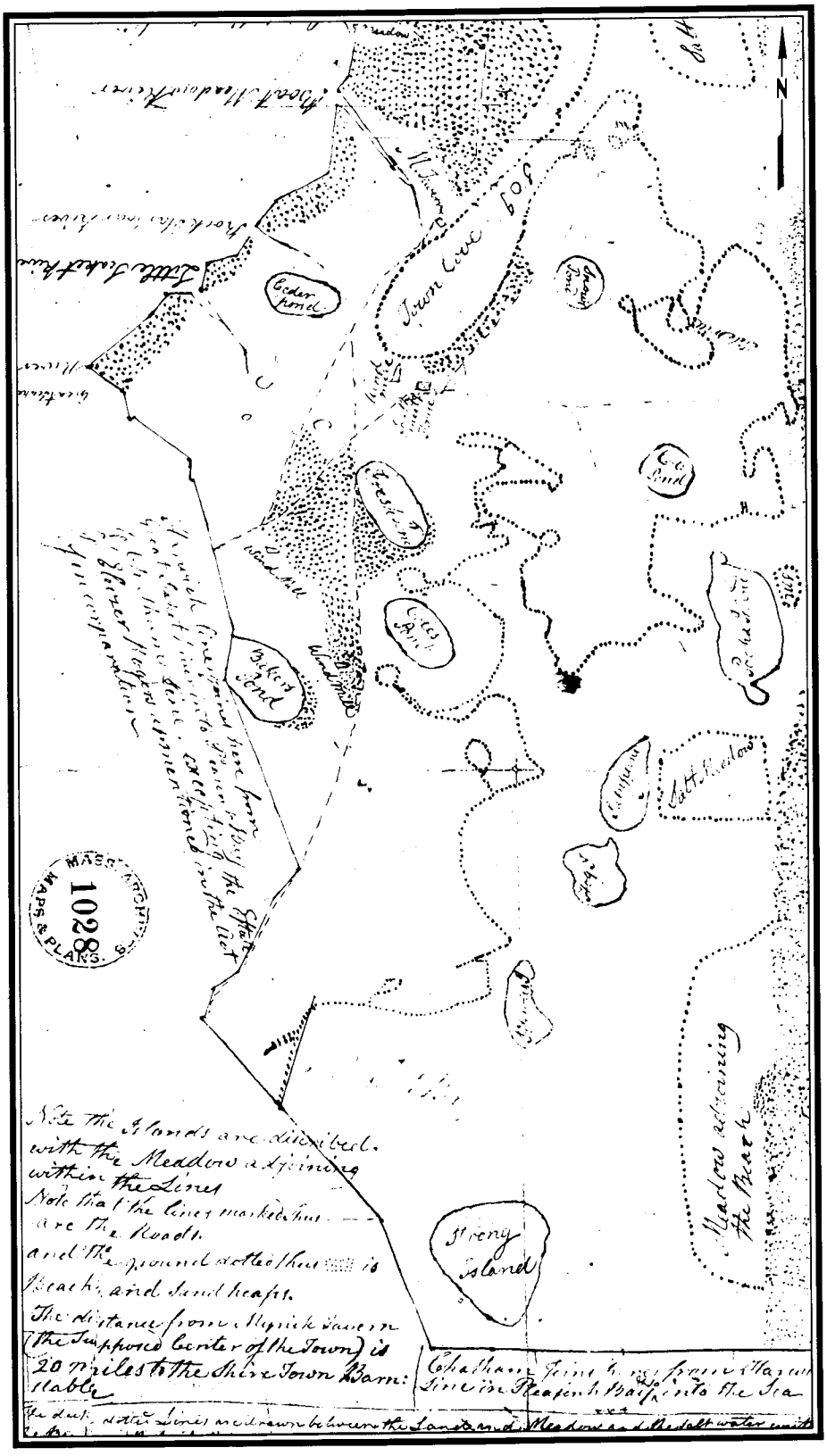


Figure 17. 1795 MAP OF EASTHAM (AND ORLEANS), SOUTHERN PART (ROGERS ET AL. 1795)



1795 MAP OF EASTHAM (AND ORLEANS), NORTHERN PART (ROGERS ET AL. 1795)

Figure 18.

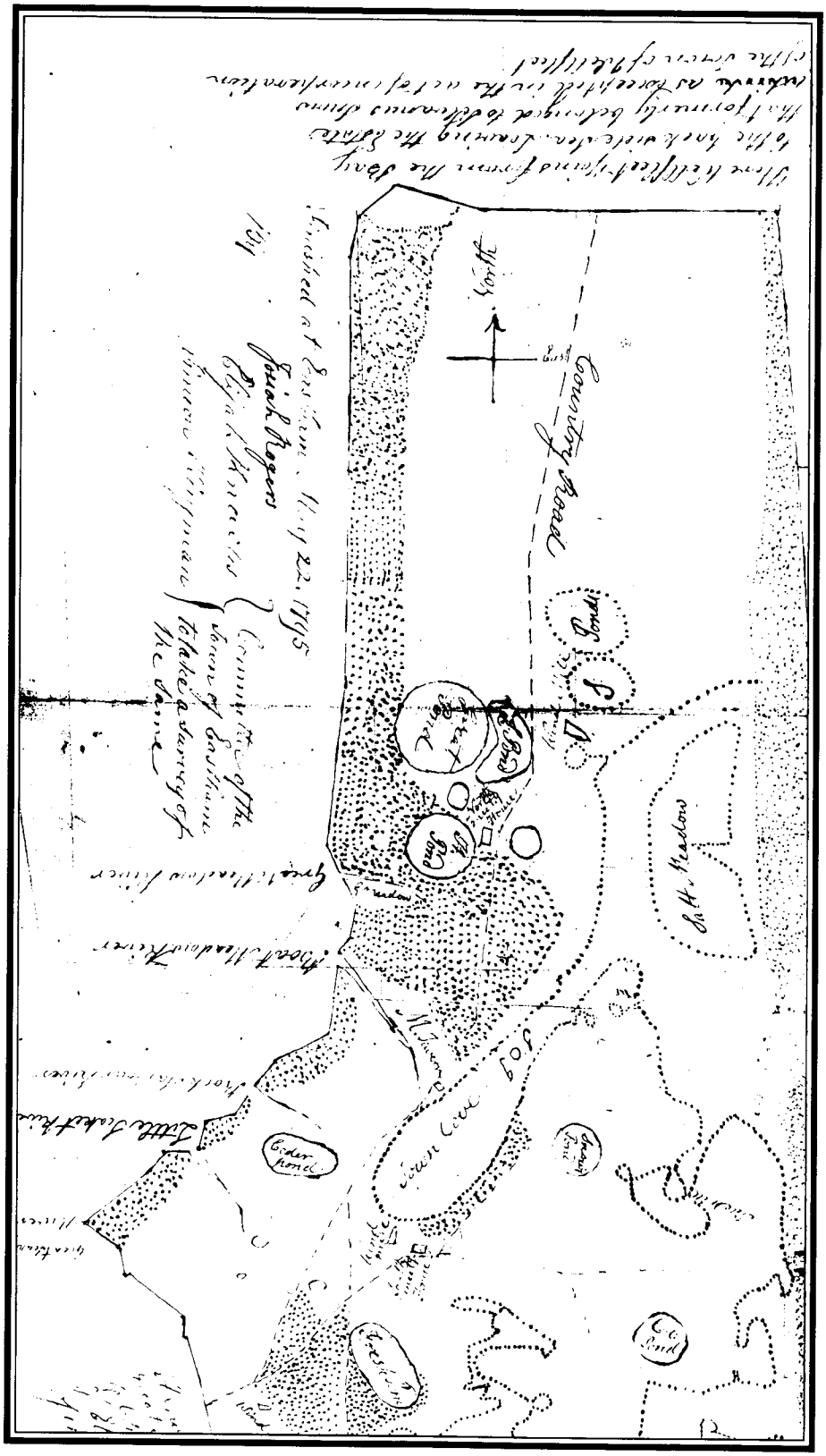


Figure 19. | 1795 MAP OF WELLFLEET (WATERMAN AND HAMLIN 1795)

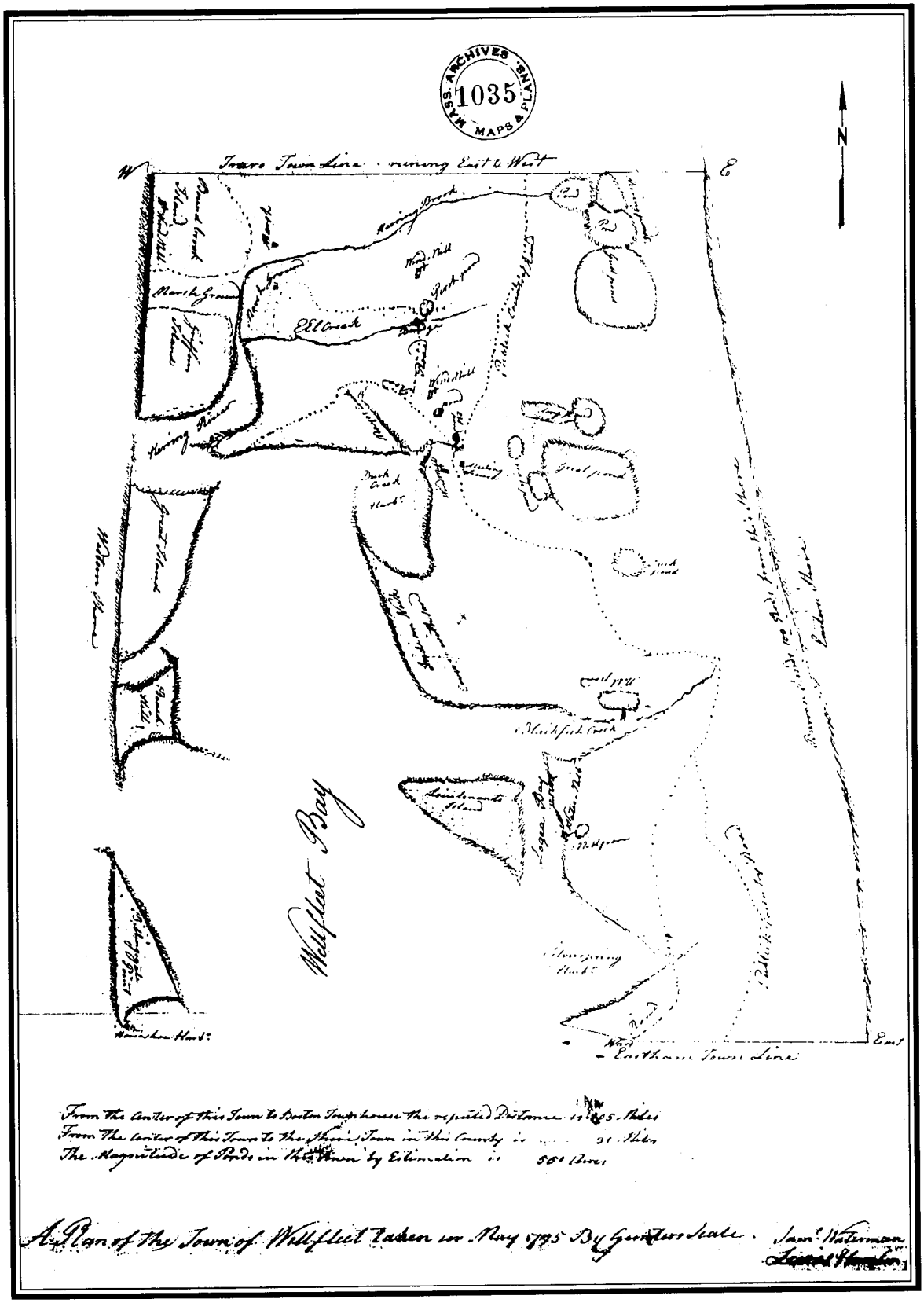


Figure 20.

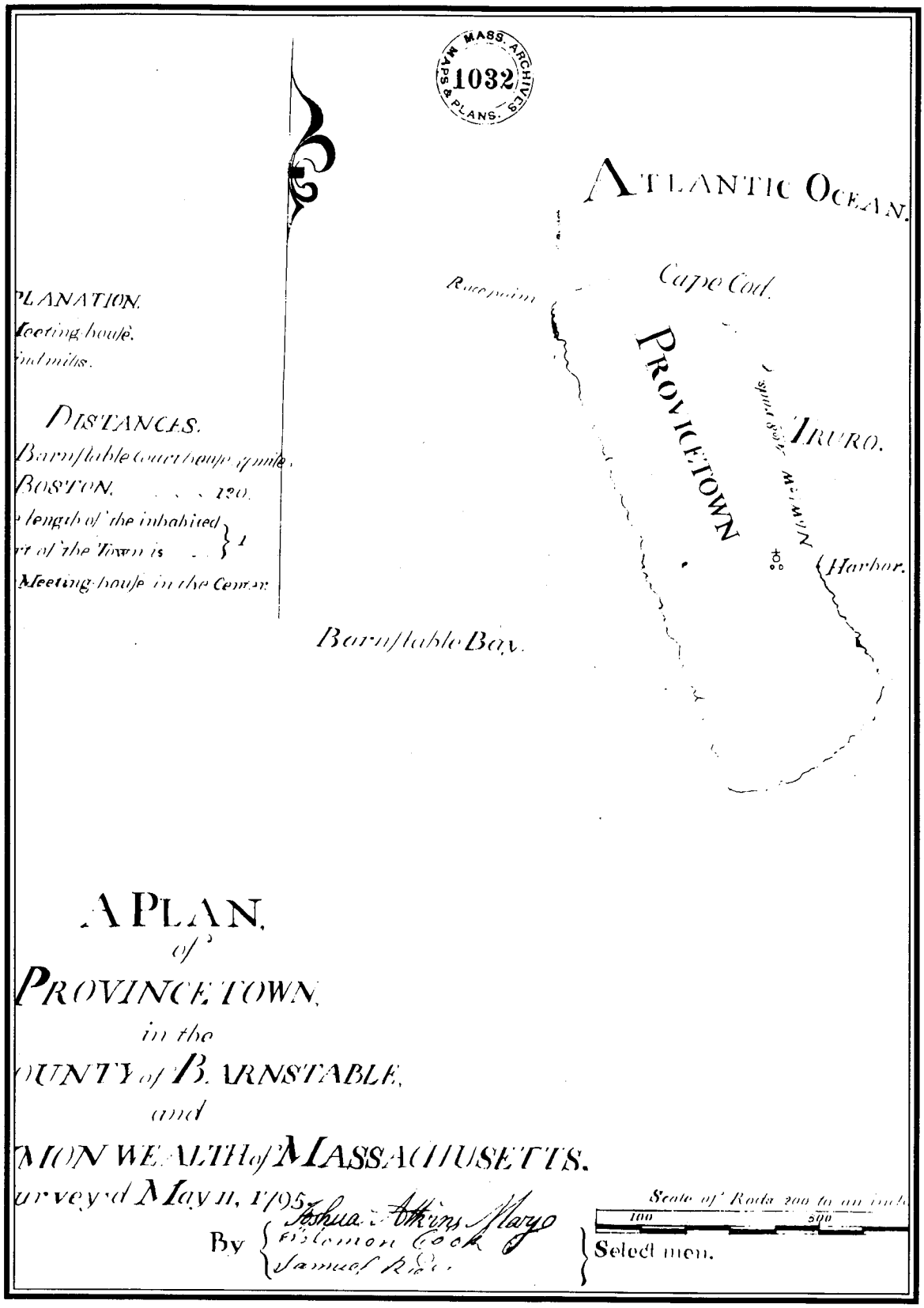
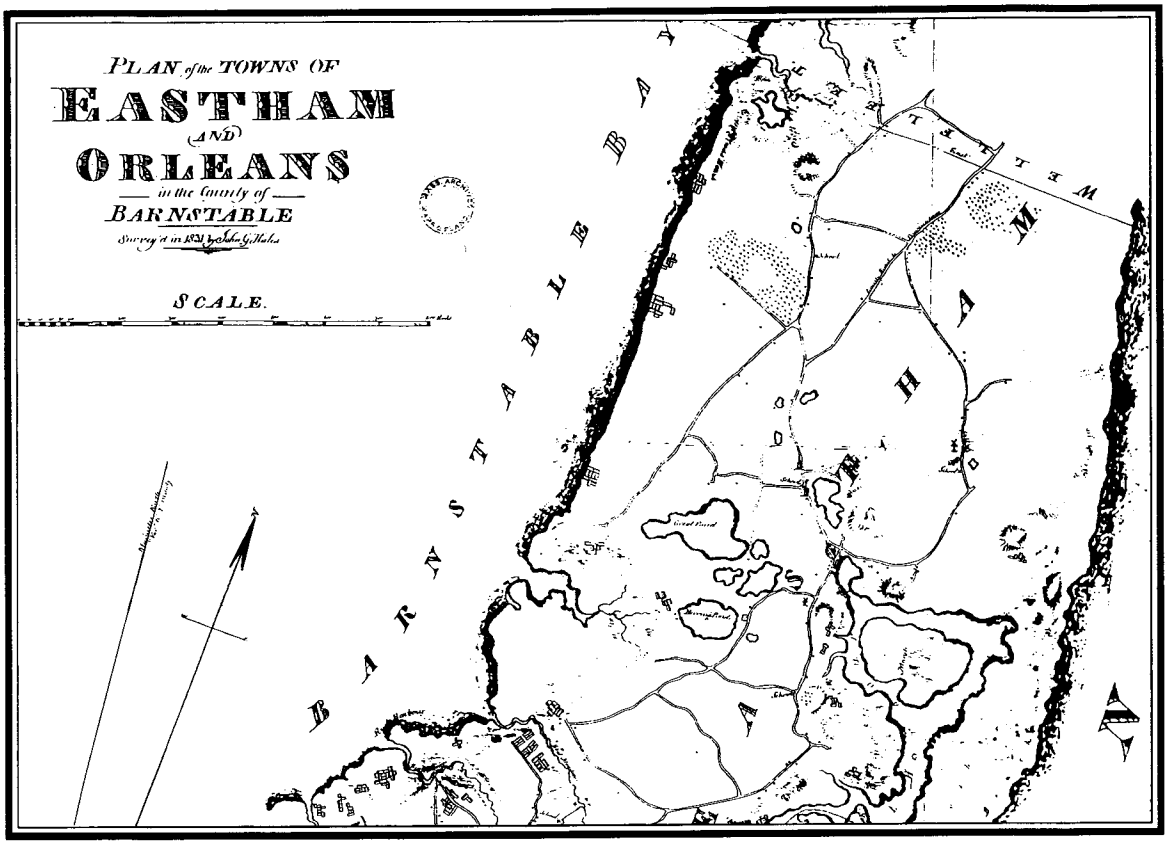

MASS. ARCHIVES
MAPS & PLANS
1032
ATLANTIC OCEAN.
Cape Cod.
PROVICETOWN
TRURO.
Harbor.
Barnstable Bay.
PLANATION.
Meeting house.
DISTANCES.
Barnstable Court house 9 mile.
BOSTON. 120.
Meeting house in the Center
A PLAN
of
PROVINCETOWN
in the
COUNTY of BARNSTABLE
and
COMMONWEALTH of MASSACHUSETTS.
Surveyed May 11, 1795
By Joshua Atkins Mayo
Ebenezer Cook
Samuel Rich
Select men.
Scale of Rods 200 to an inch
100
500

Figure 21. 1798 MAP OF CAPE COD (CARLETON 1798)

1831 MAP OF CHATHAM (HALES 1831A)

Figure 22.

Figure 23. | 1831 MAP OF EASTHAM (HALES 1831B)



1831 MAP OF WELLFLEET (HALES 1831C)

Figure 24.

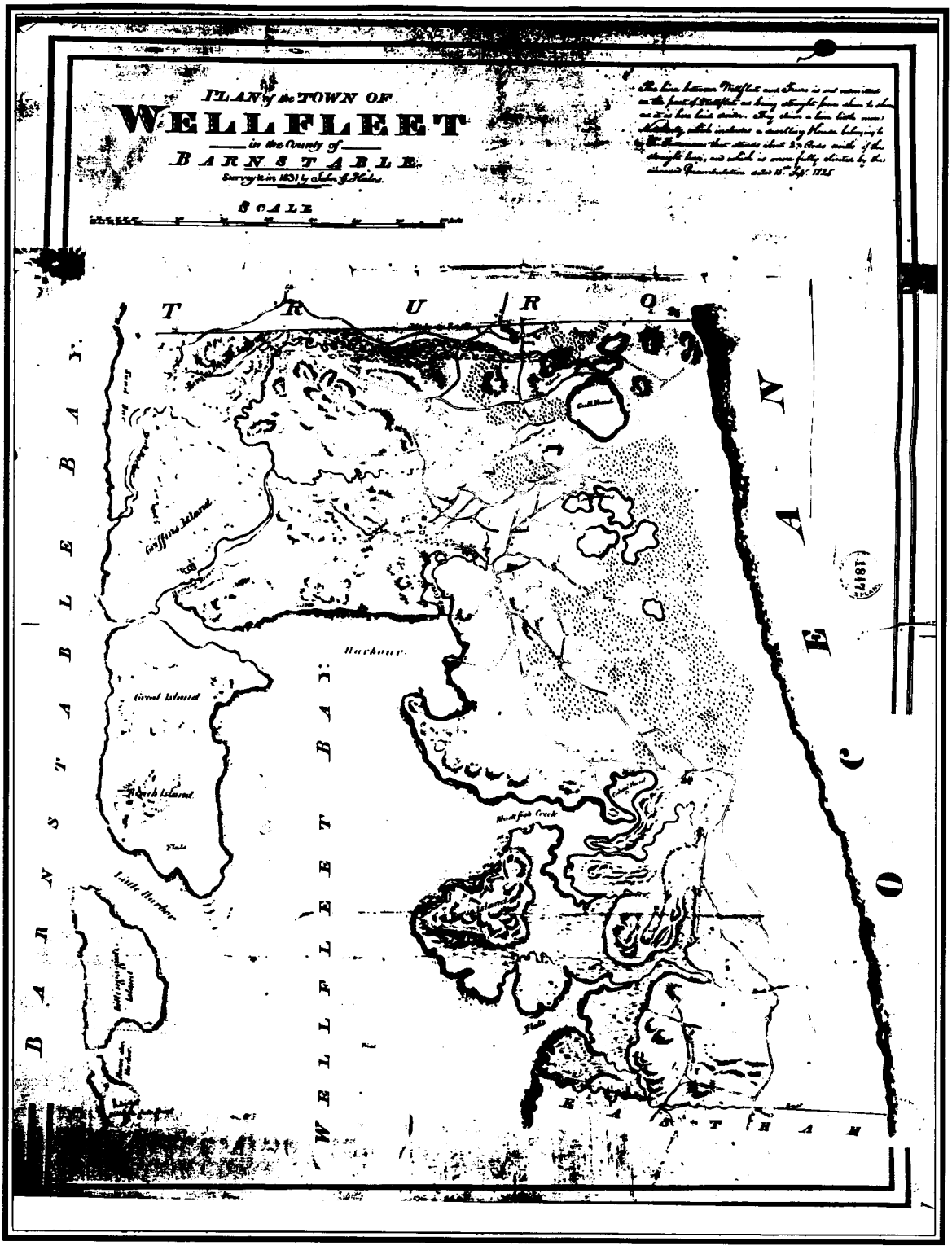
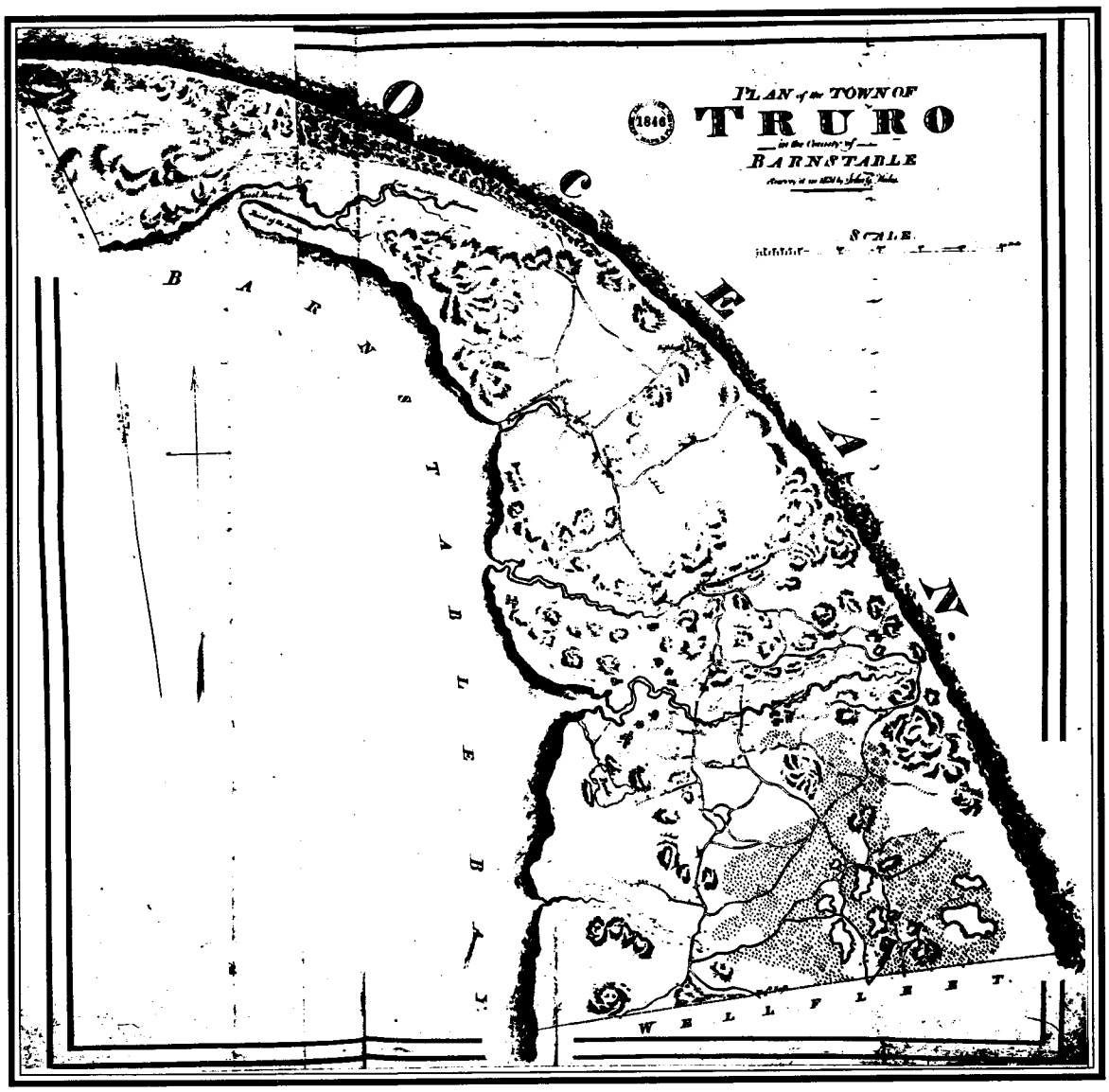


Figure 25. 1831 MAP OF TRURO (HALES 1831D)



1836 MAP OF PROVINCETOWN (GRAHAM 1833–1836)

Figure 26.

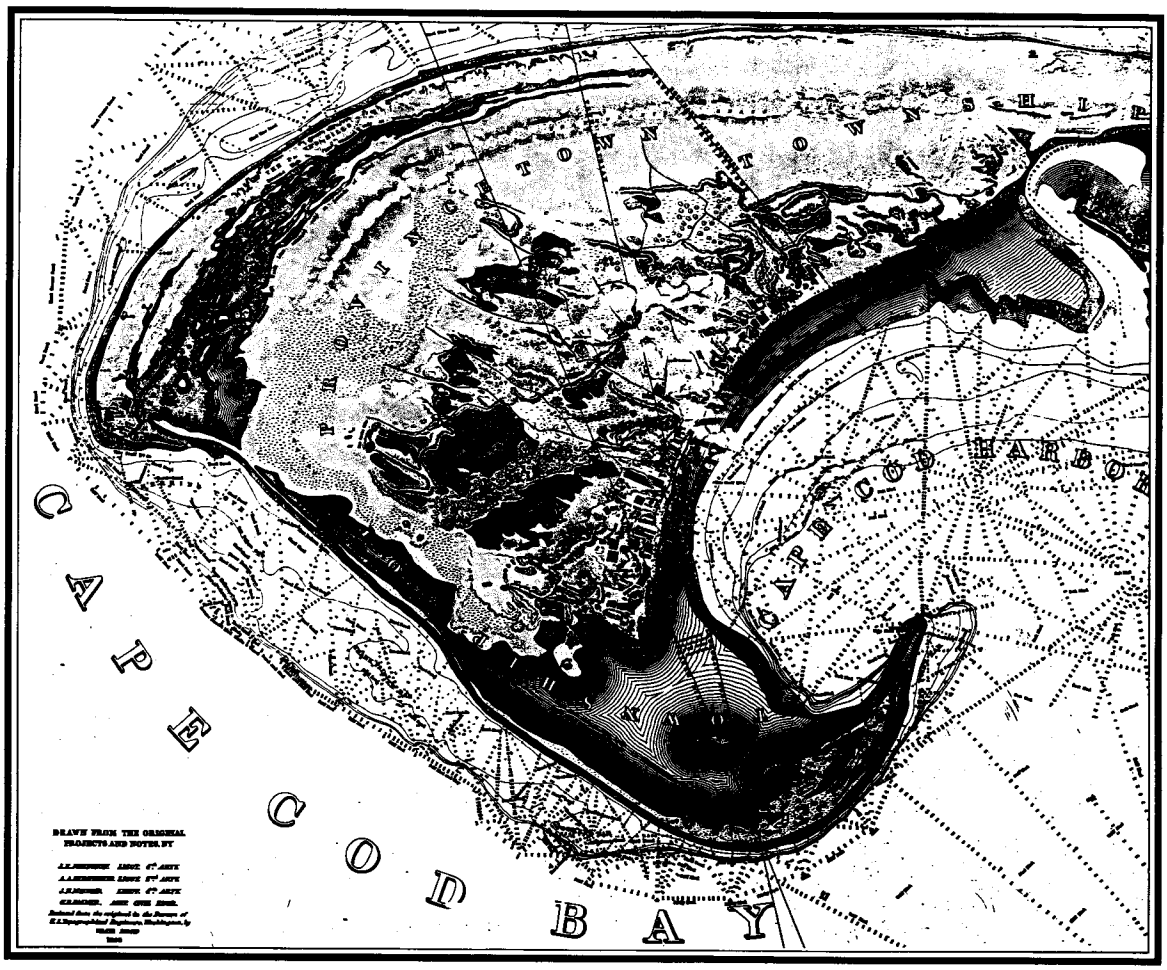
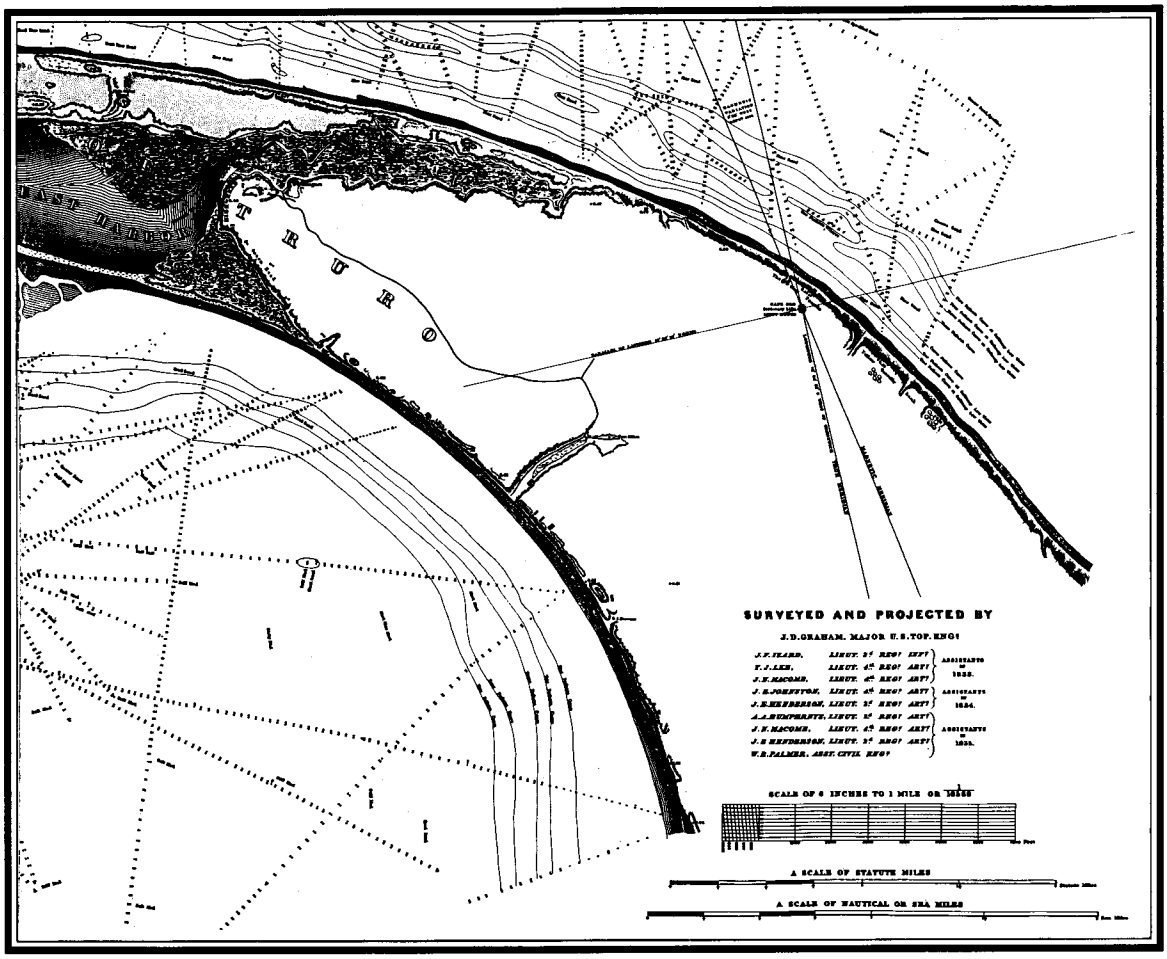


Figure 27. | 1836 MAP OF TRURO (GRAHAM 1833-1836)



1841 MAP OF WELLFLEET (ANONYMOUS 1841) **Figure 28.**

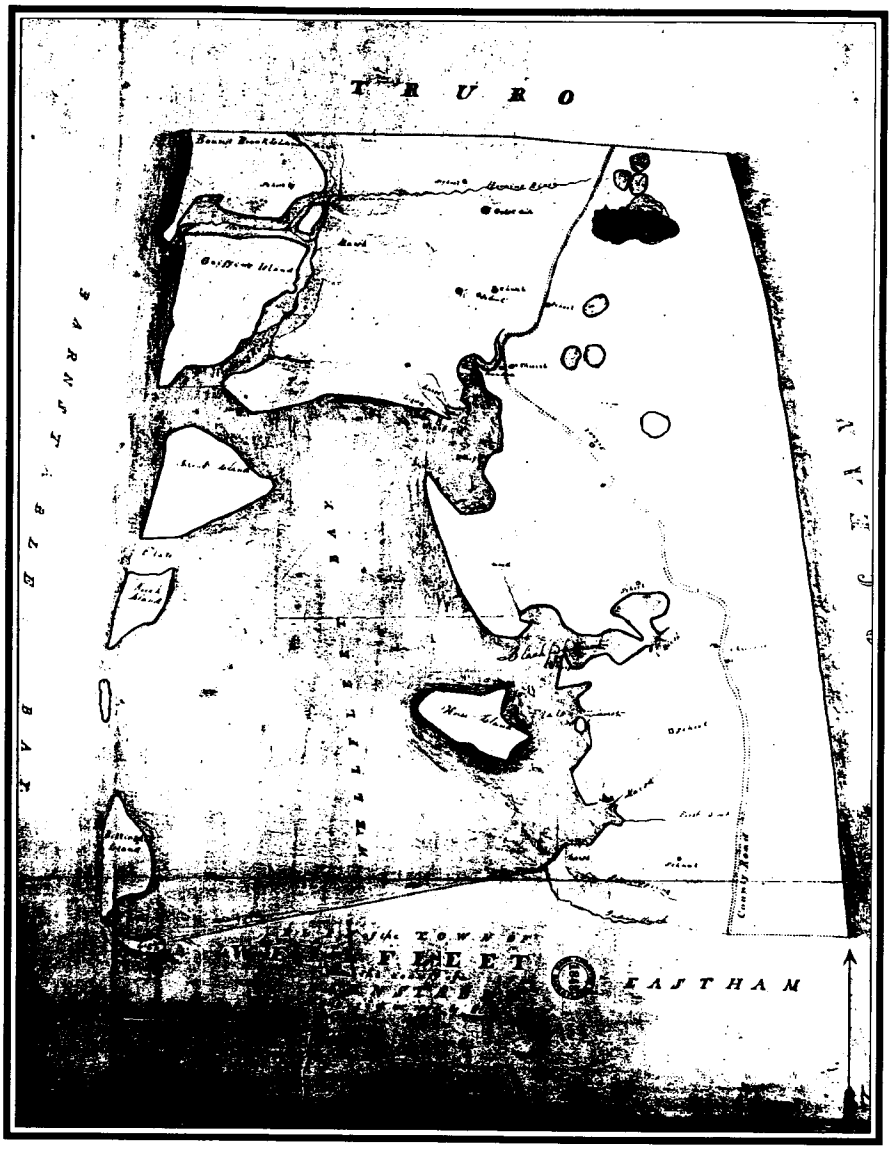


Figure 29. 1841 MAP OF TRURO, SOUTHERN PART (J. DAVIS 1841)

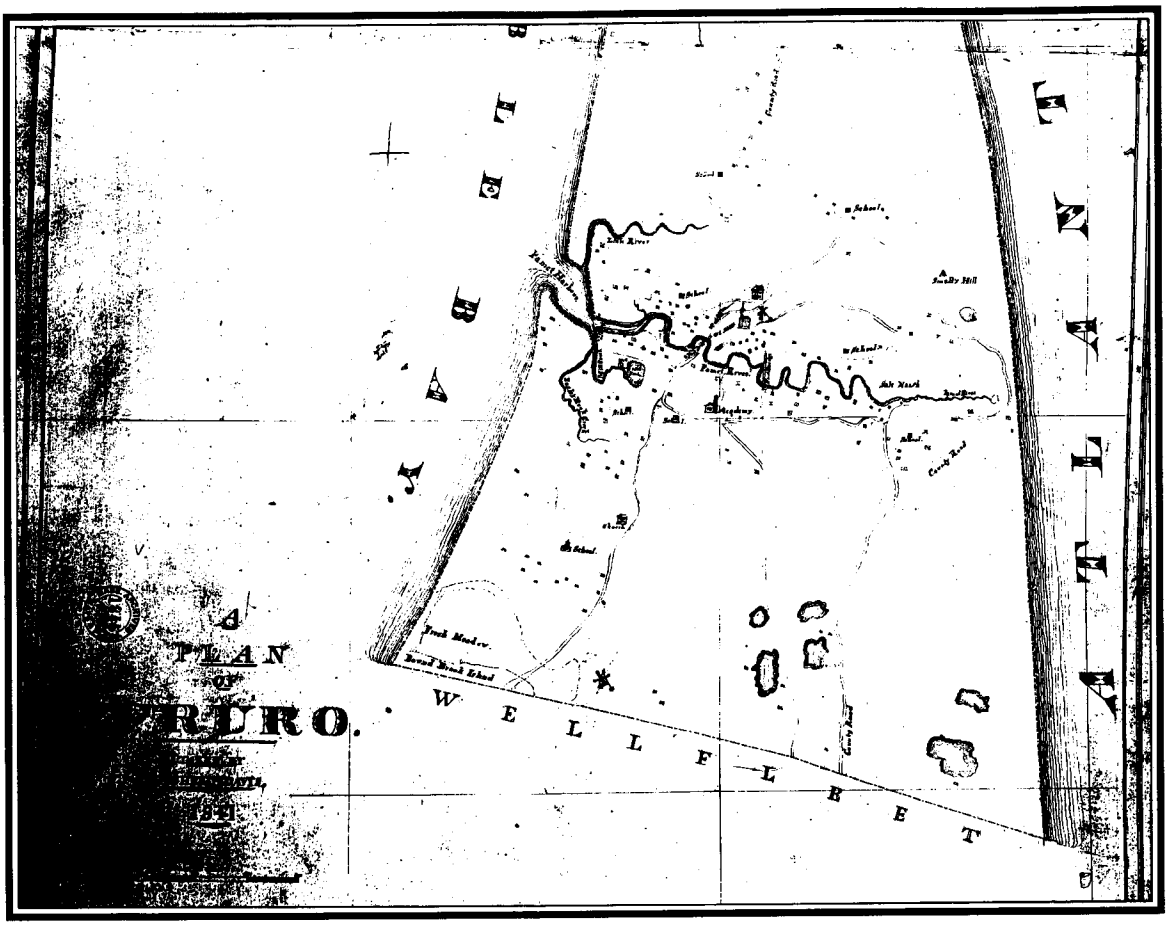
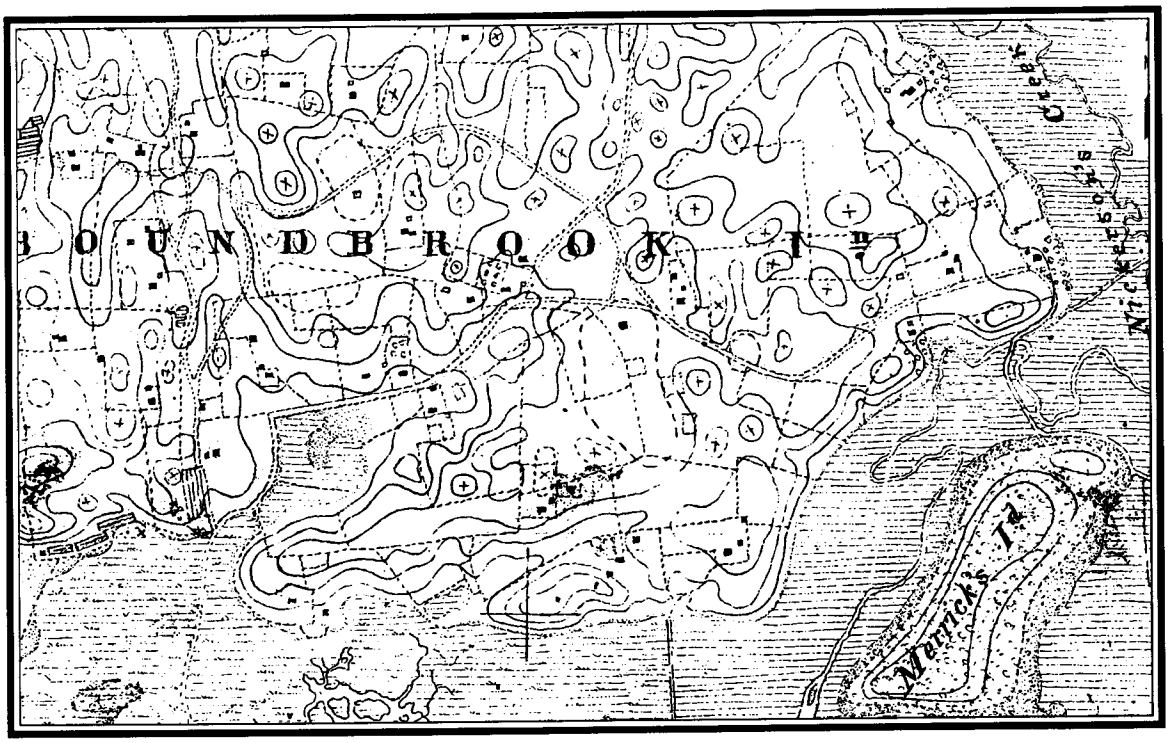


Figure 30.

Figure 31. 1848 MAP OF BOUND BROOK ISLAND, WELLFLEET (WHITING 1848A)



1848 MAP OF WELLFLEET, SOUTHERN PART (WHITING 1848A)

Figure 32.

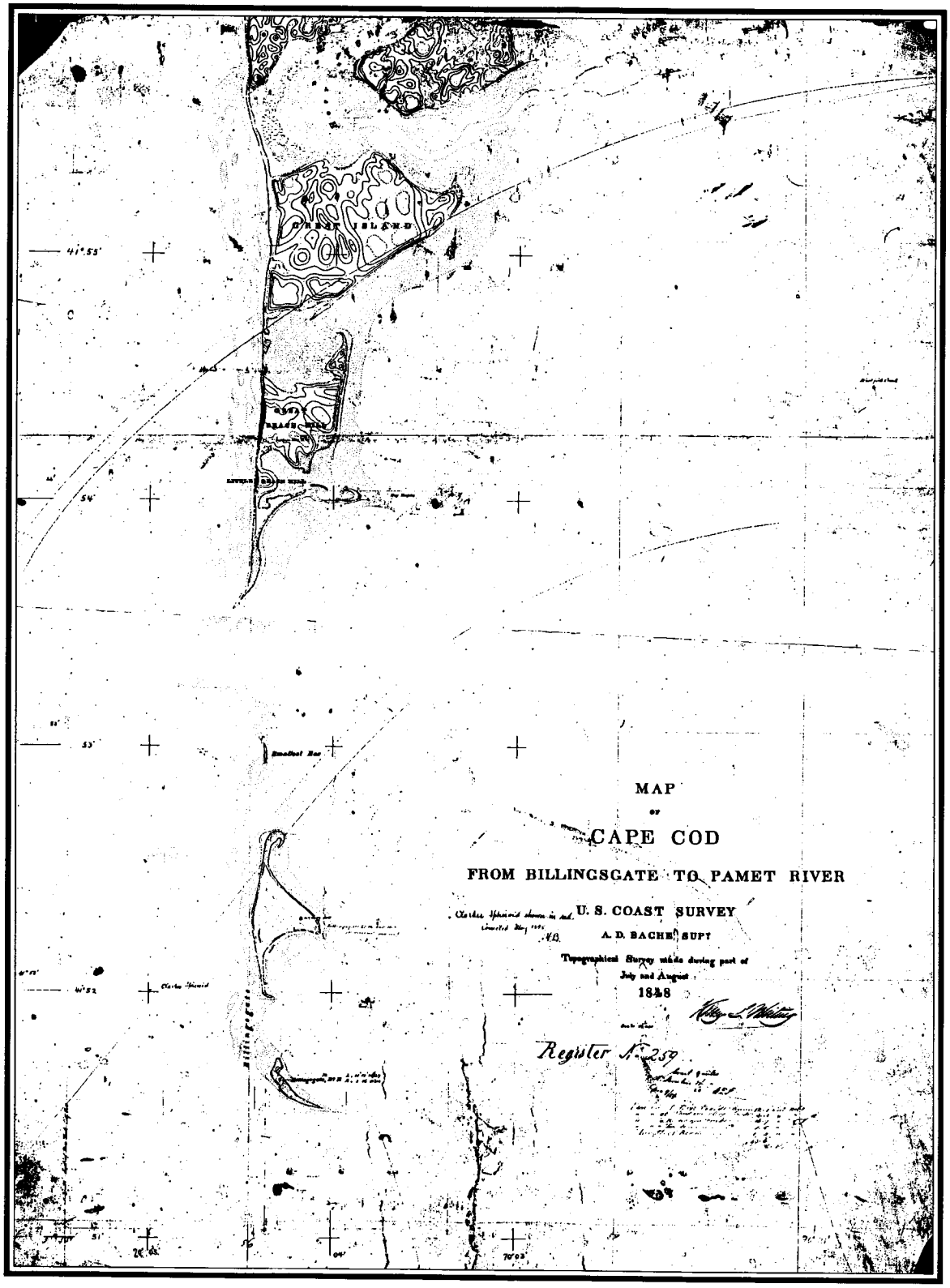


Figure 33. 1848 MAP OF WELLFLEET, NORTHERN PART (WHITING 1848A)

1856 MAP OF NAUSET HARBOR, EASTHAM (IARDELLA 1856)

Figure 34.

Figure 35. 1856 MAP OF SALT POND, EASTHAM (IARDELLA 1856)

1856 MAP OF TOWN COVE, EASTHAM (IARDELLA 1856)

Figure 36.

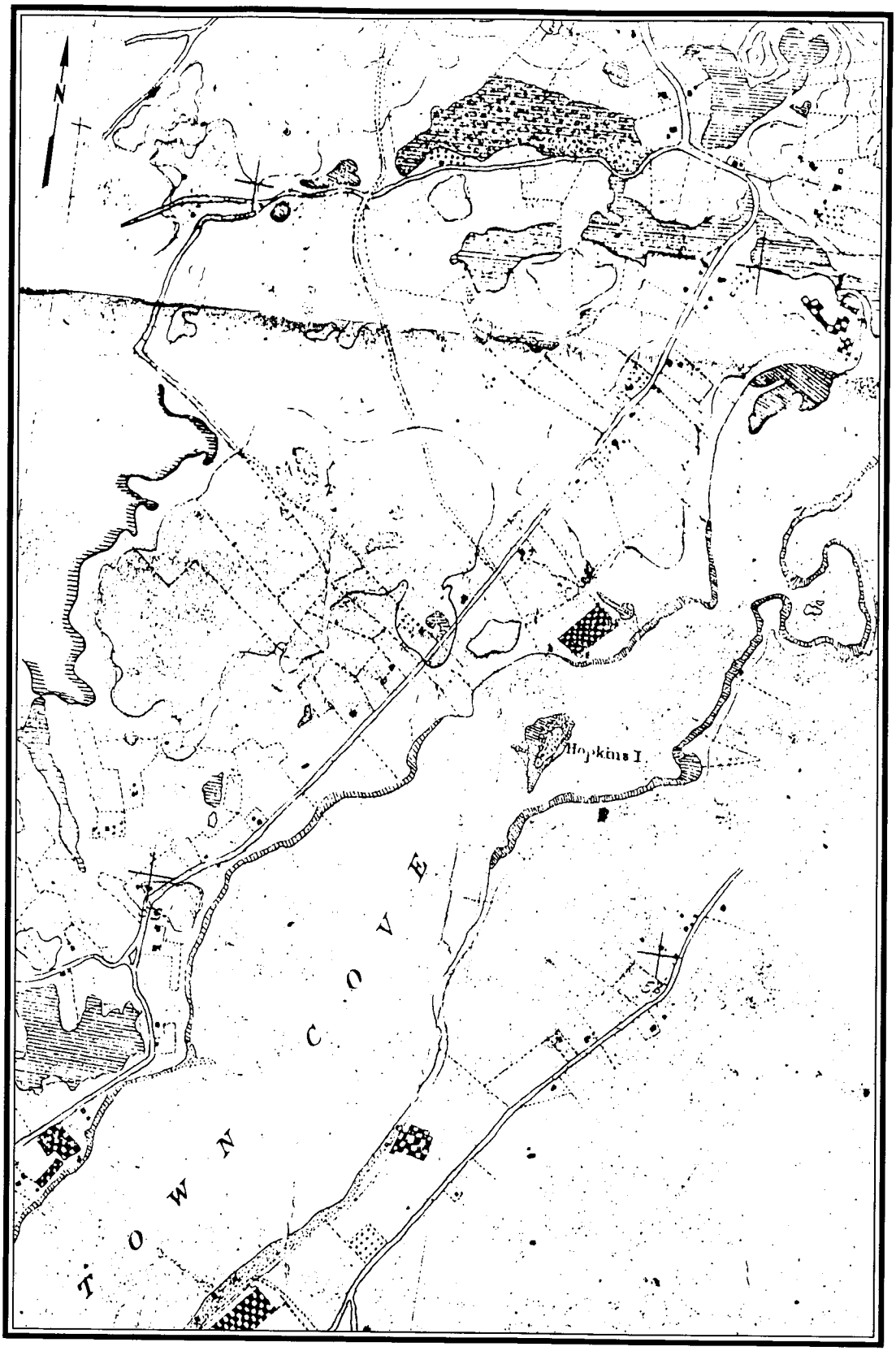
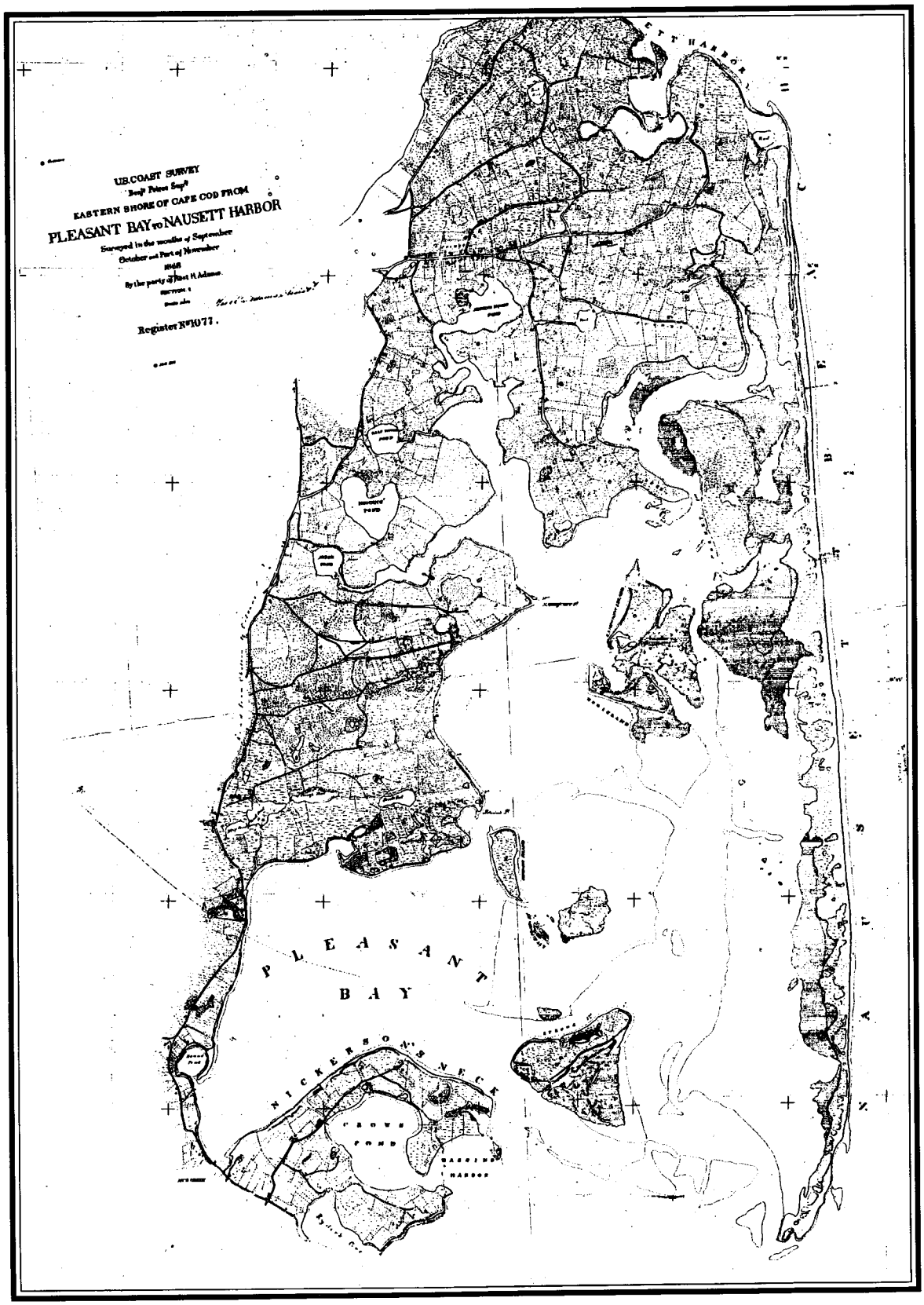


Figure 37. 1868 MAP OF PLEASANT BAY, ORLEANS (WHITING 1848A)



1880 MAP OF CHATHAM (WALKER 1880)

Figure 38.

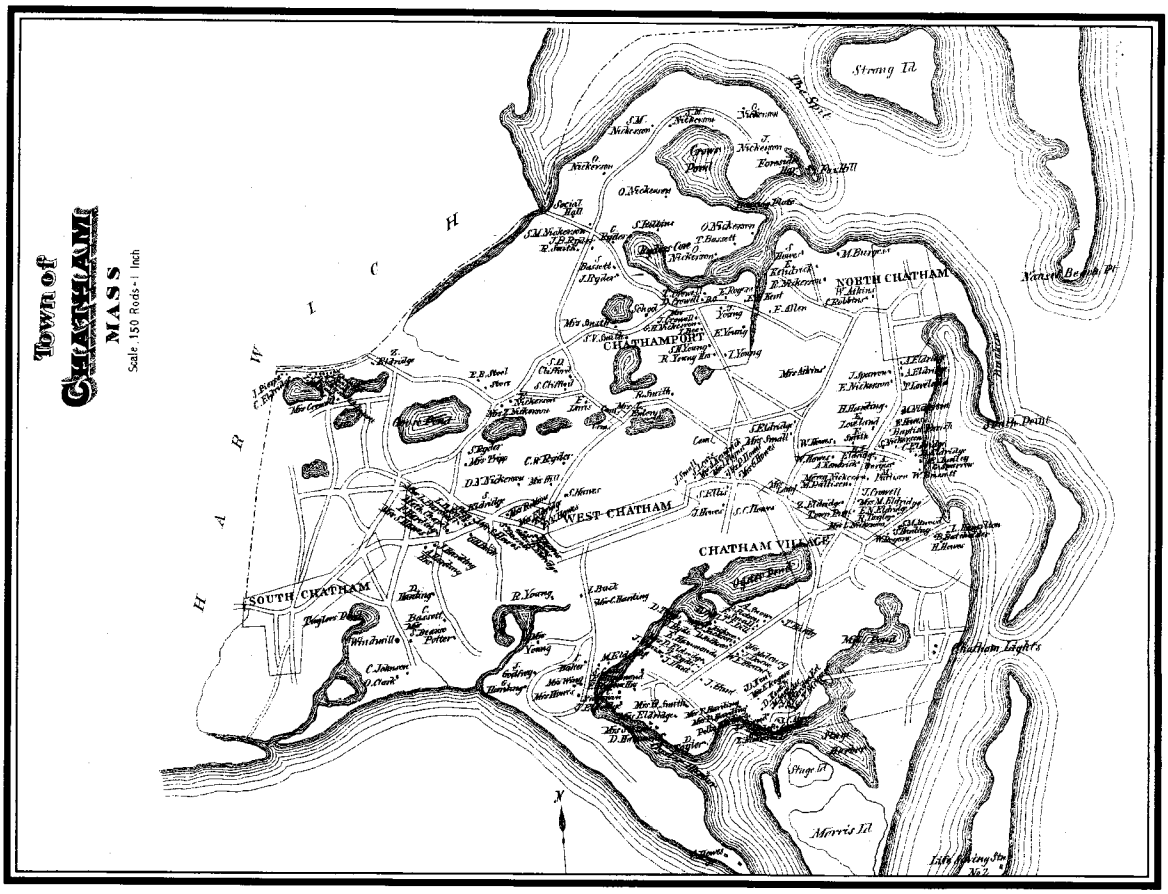
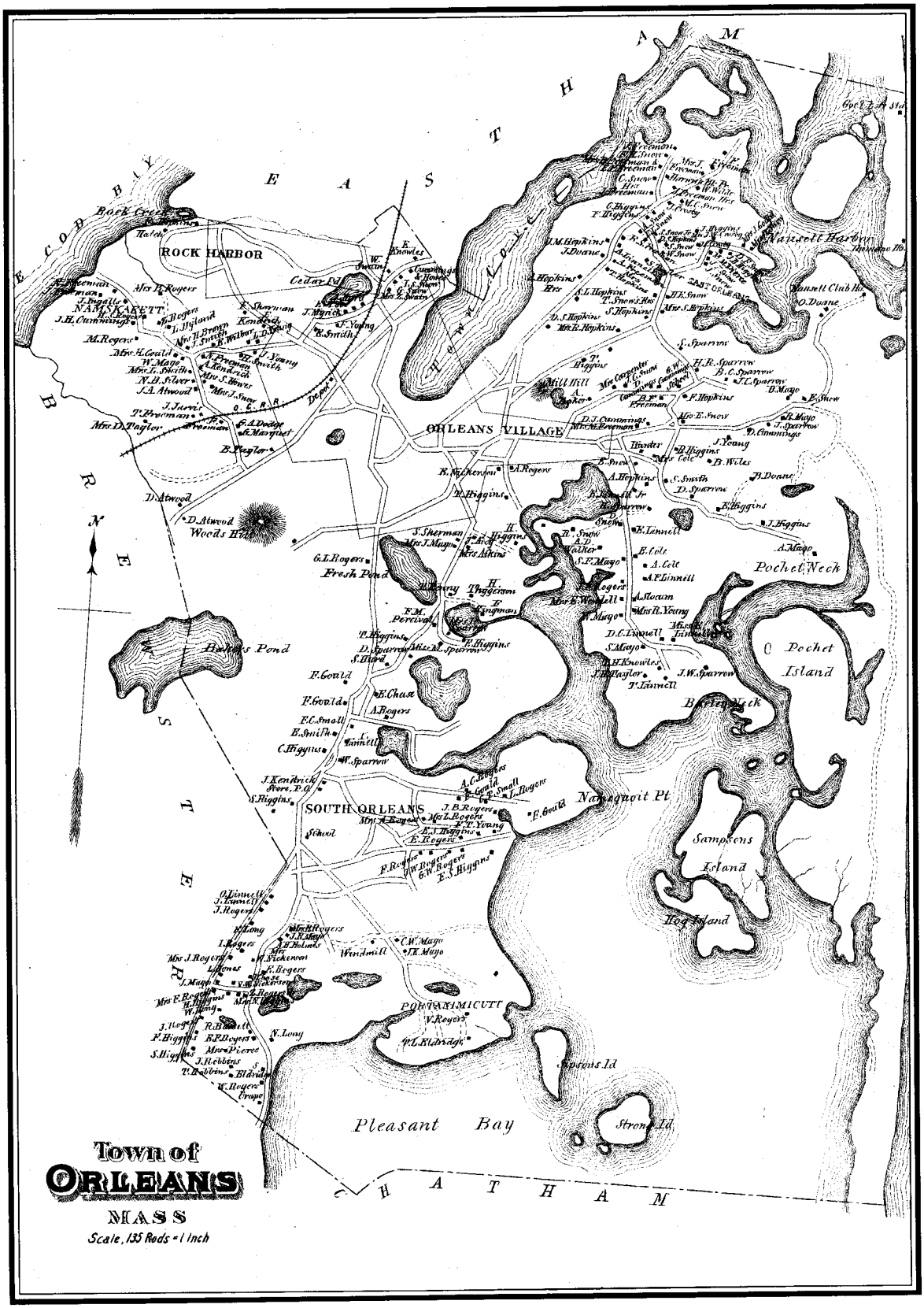


Figure 39. 1880 MAP OF ORLEANS (WALKER 1880)



1880 MAP OF EASTHAM (WALKER 1880)

Figure 40.

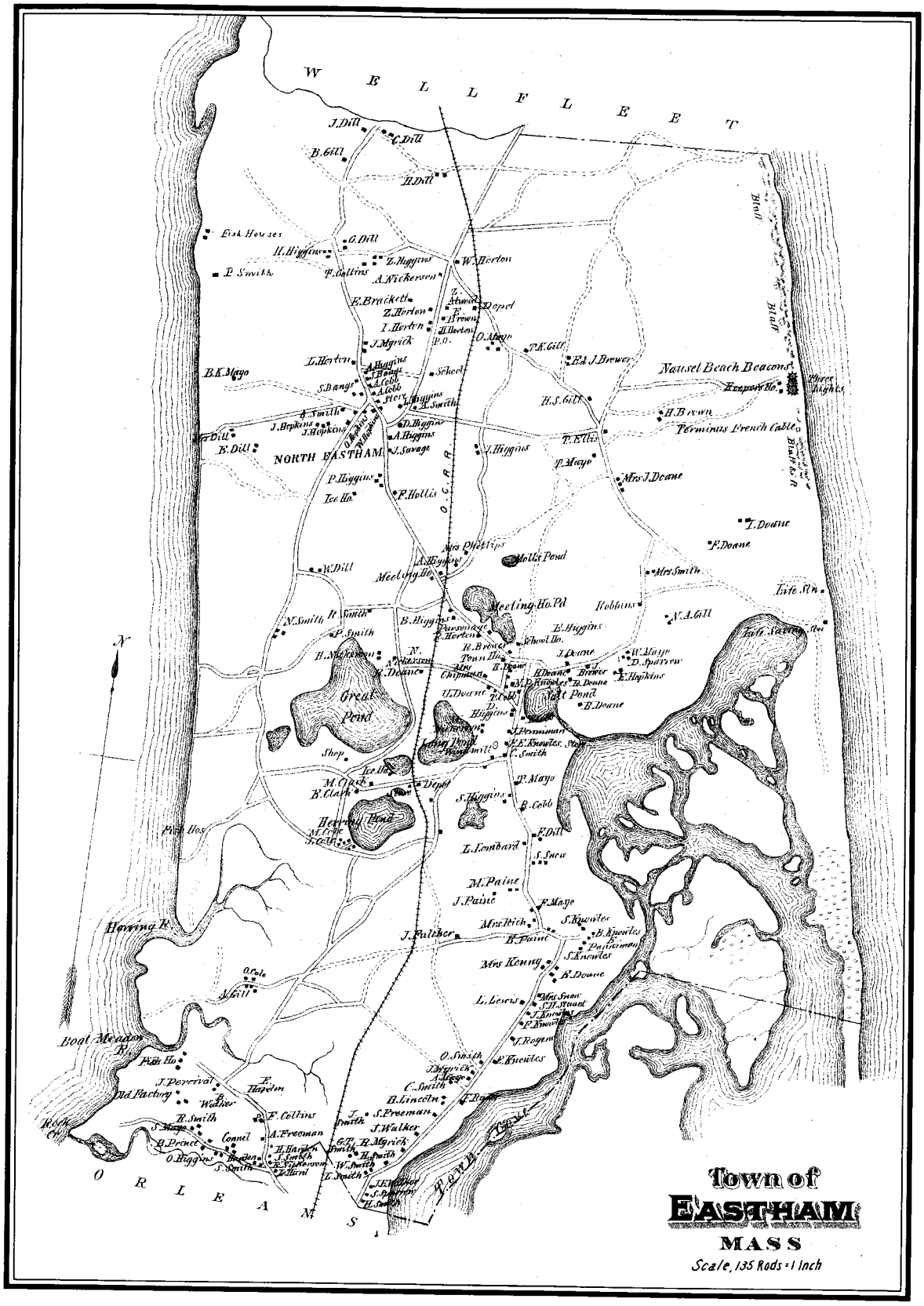
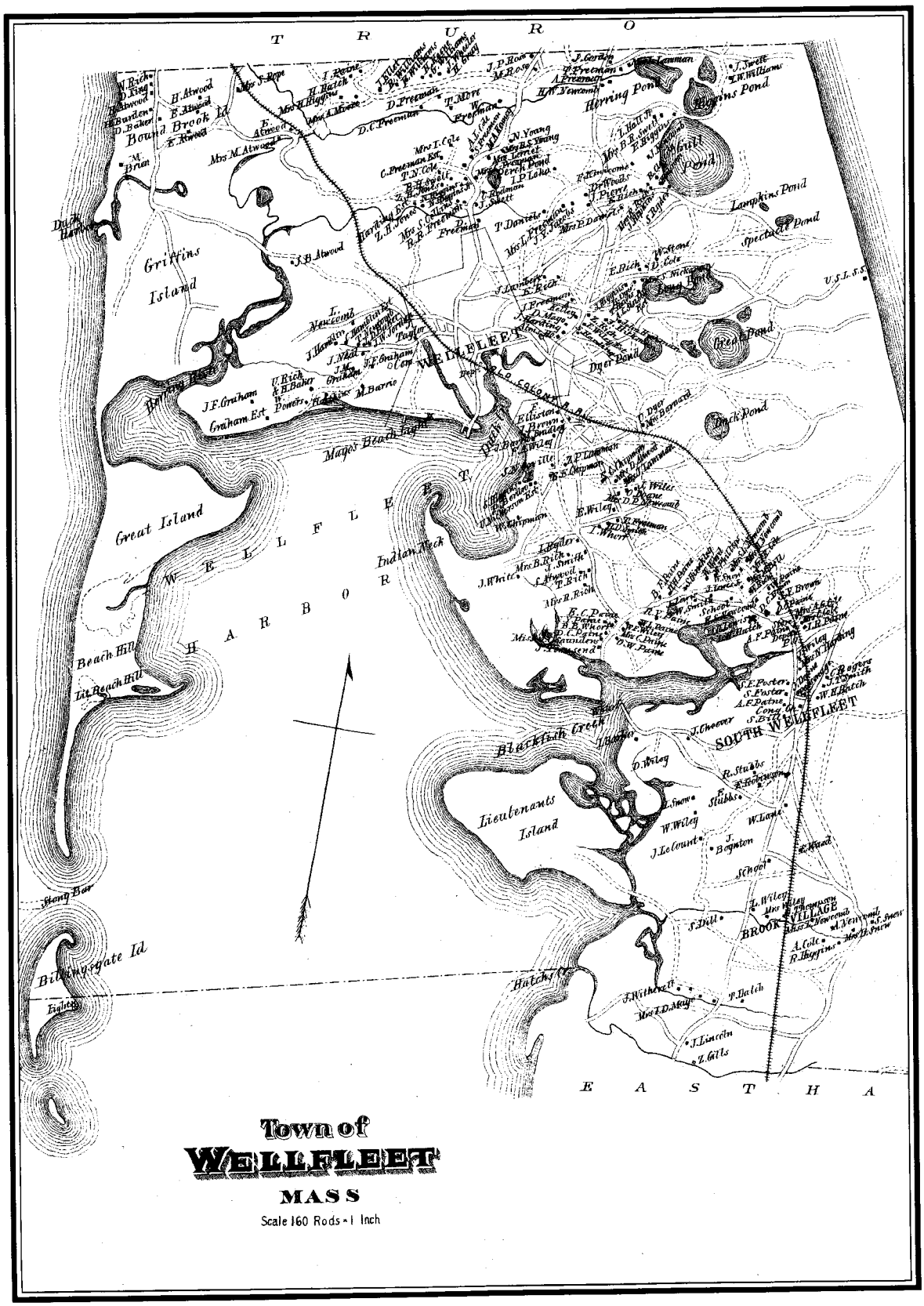


Figure 41. 1880 MAP OF WELLFLEET (WALKER 1880)



1880 MAP OF WELLFLEET VILLAGE (WALKER 1880)

Figure 42.

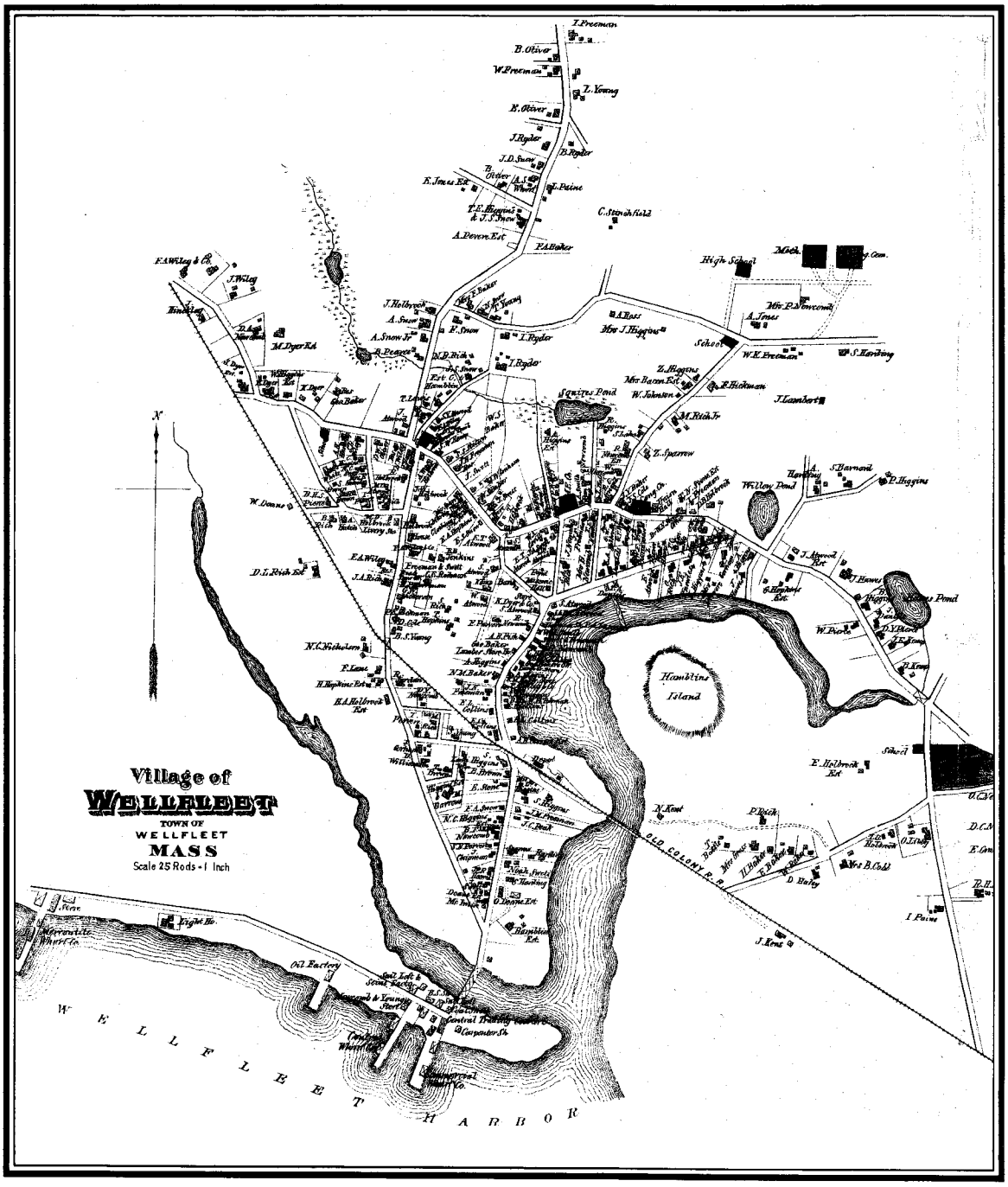


Figure 43. 1880 MAP OF TRURO, SOUTHERN PART (WALKER 1880)

1880 MAP OF TRURO, NORTHERN PART (WALKER 1880)

Figure 44.

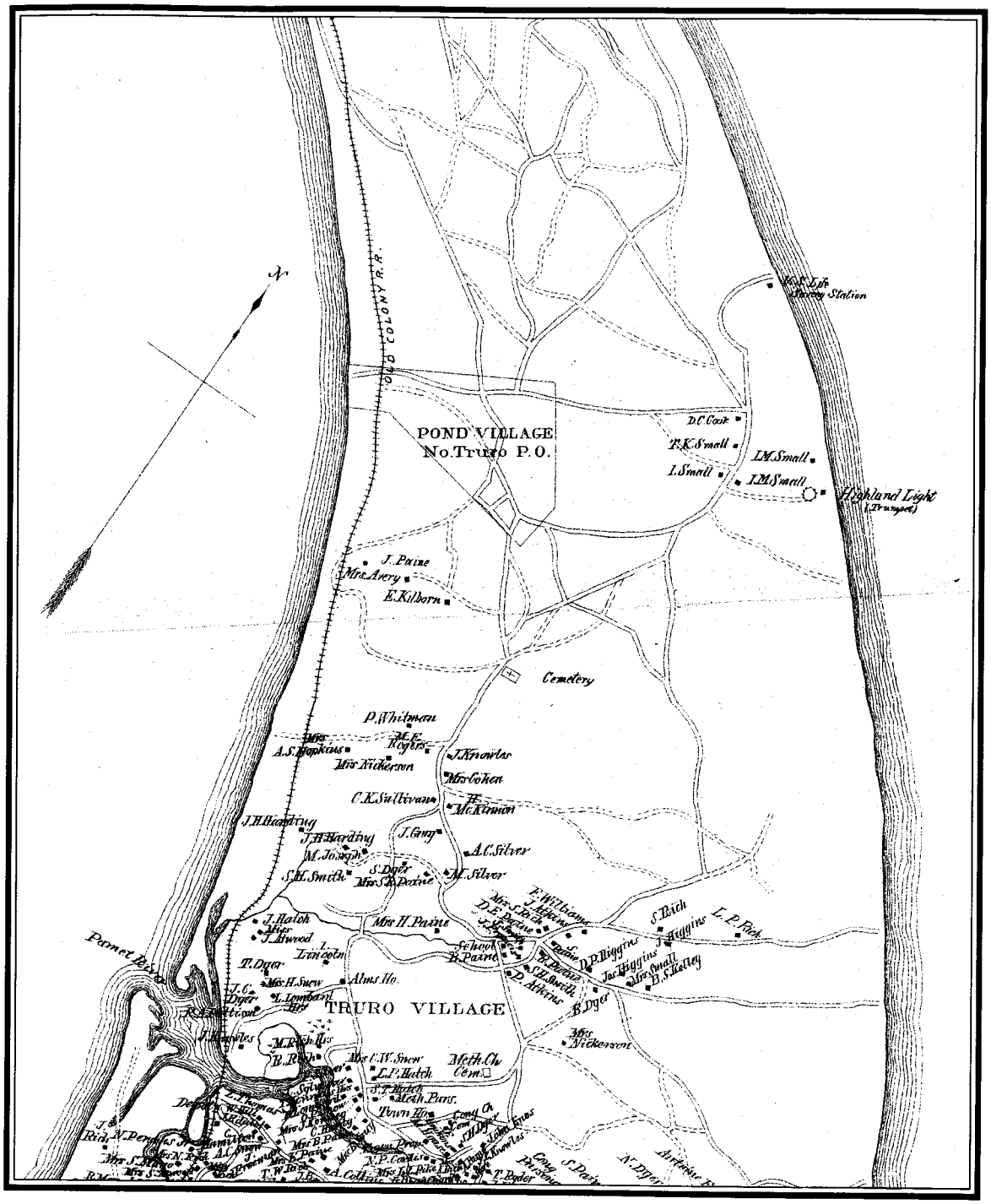
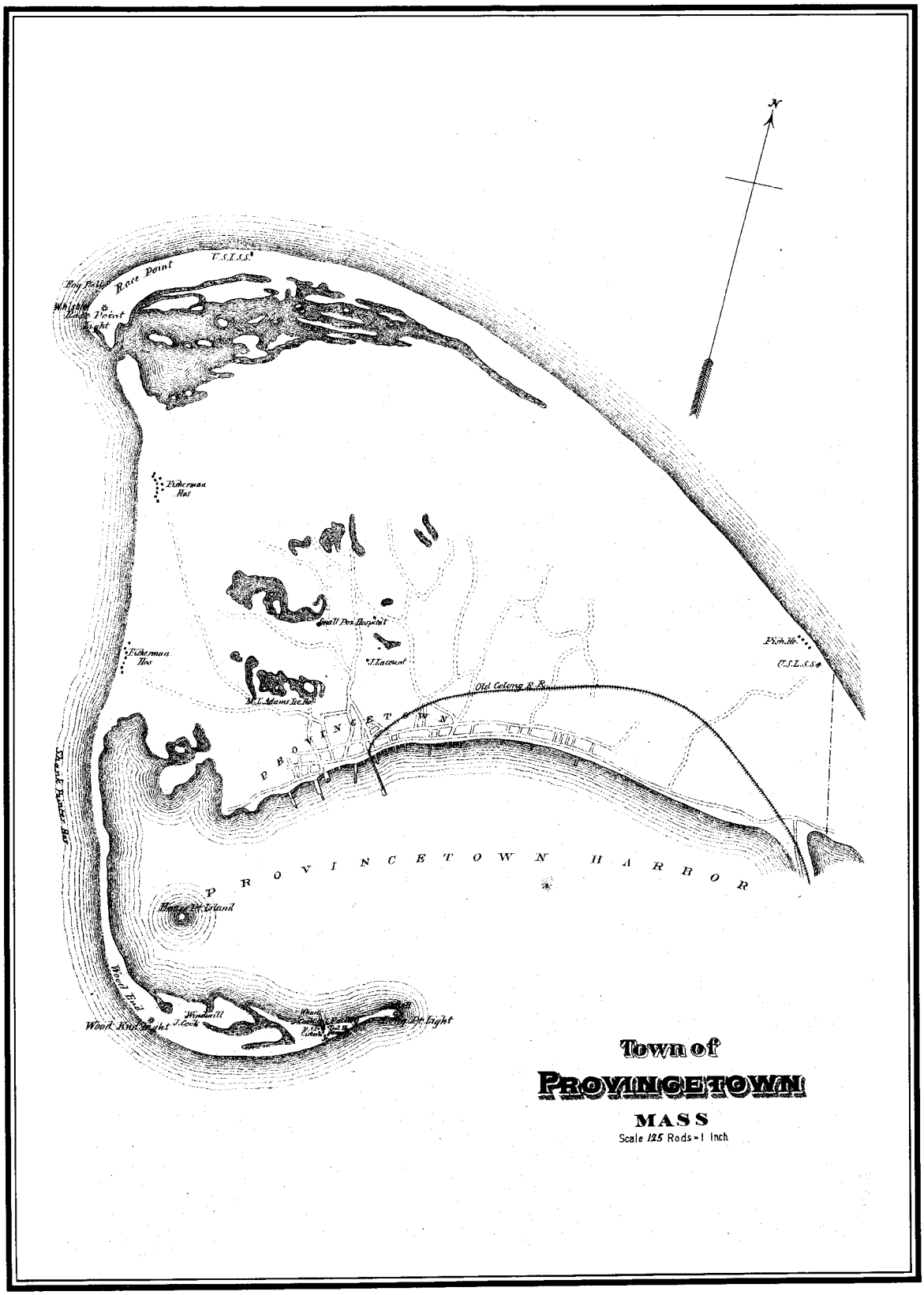


Figure 45. 1880 MAP OF PROVINCETOWN (WALKER 1880)



1943 CHATHAM, MASS. USGS 7.5 MINUTE SERIES QUADRANGLE
1:31,680 SCALE TOPOGRAPHIC MAP (USGS 1943)

Figure 46.

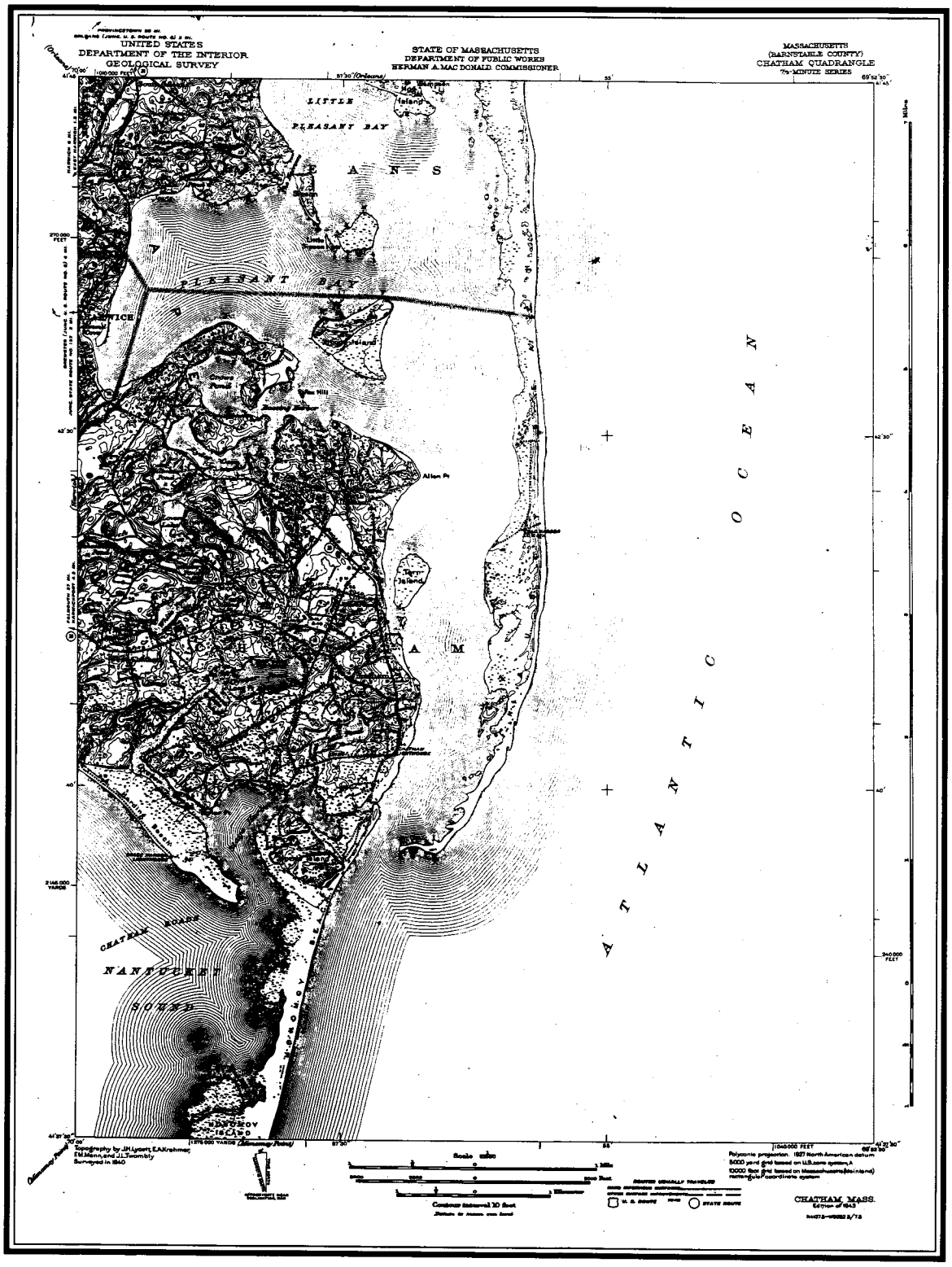
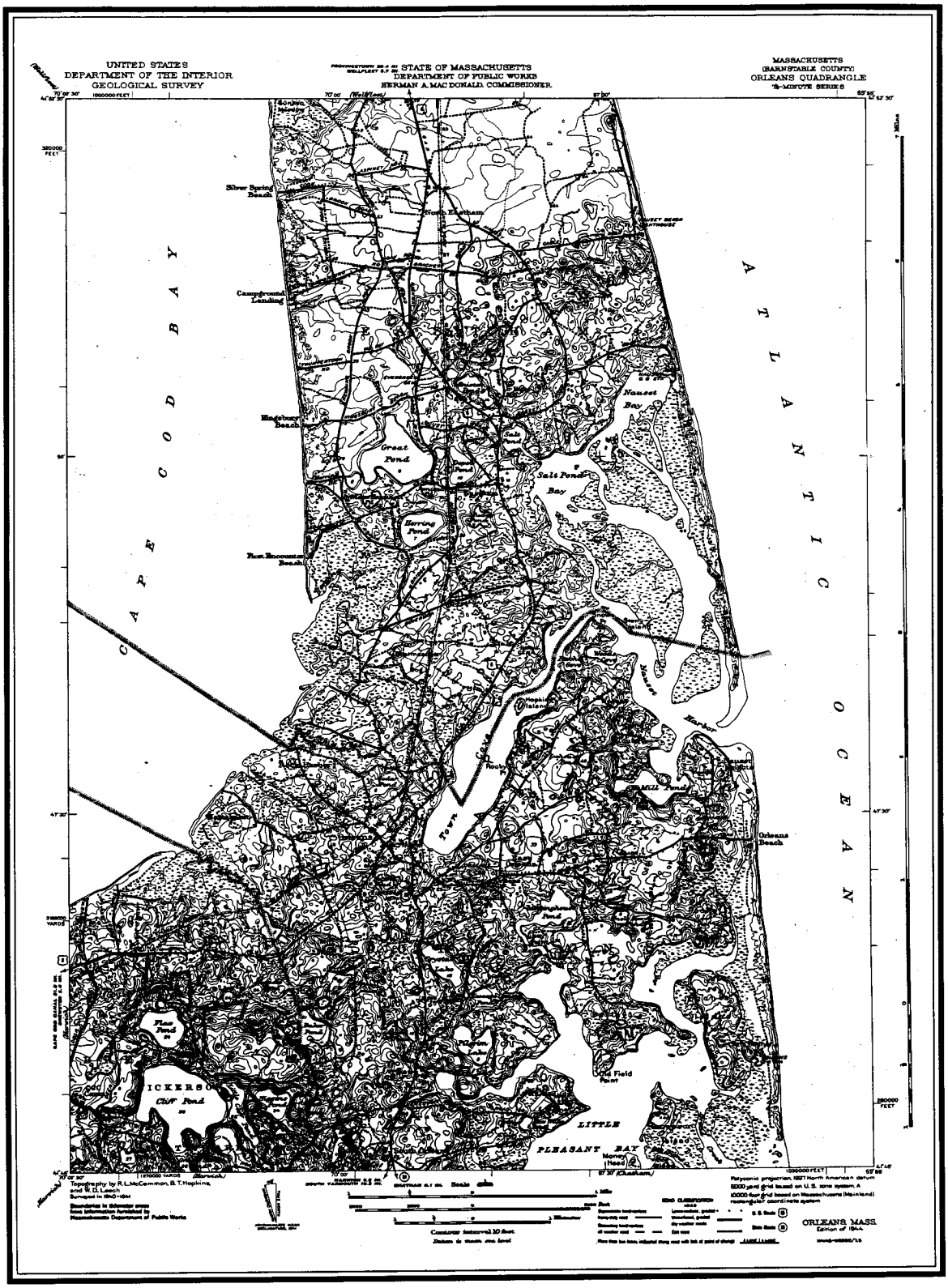


Figure 47. 1944 ORLEANS, MASS. USGS 7.5 MINUTE SERIES QUADRANGLE
1:31,680 SCALE TOPOGRAPHIC MAP (USGS 1944)



1944 WELLFLEET, MASS. USGS 7.5 MINUTE SERIES QUADRANGLE
1:31,680 SCALE TOPOGRAPHIC MAP (USGS 1944)

Figure 48.

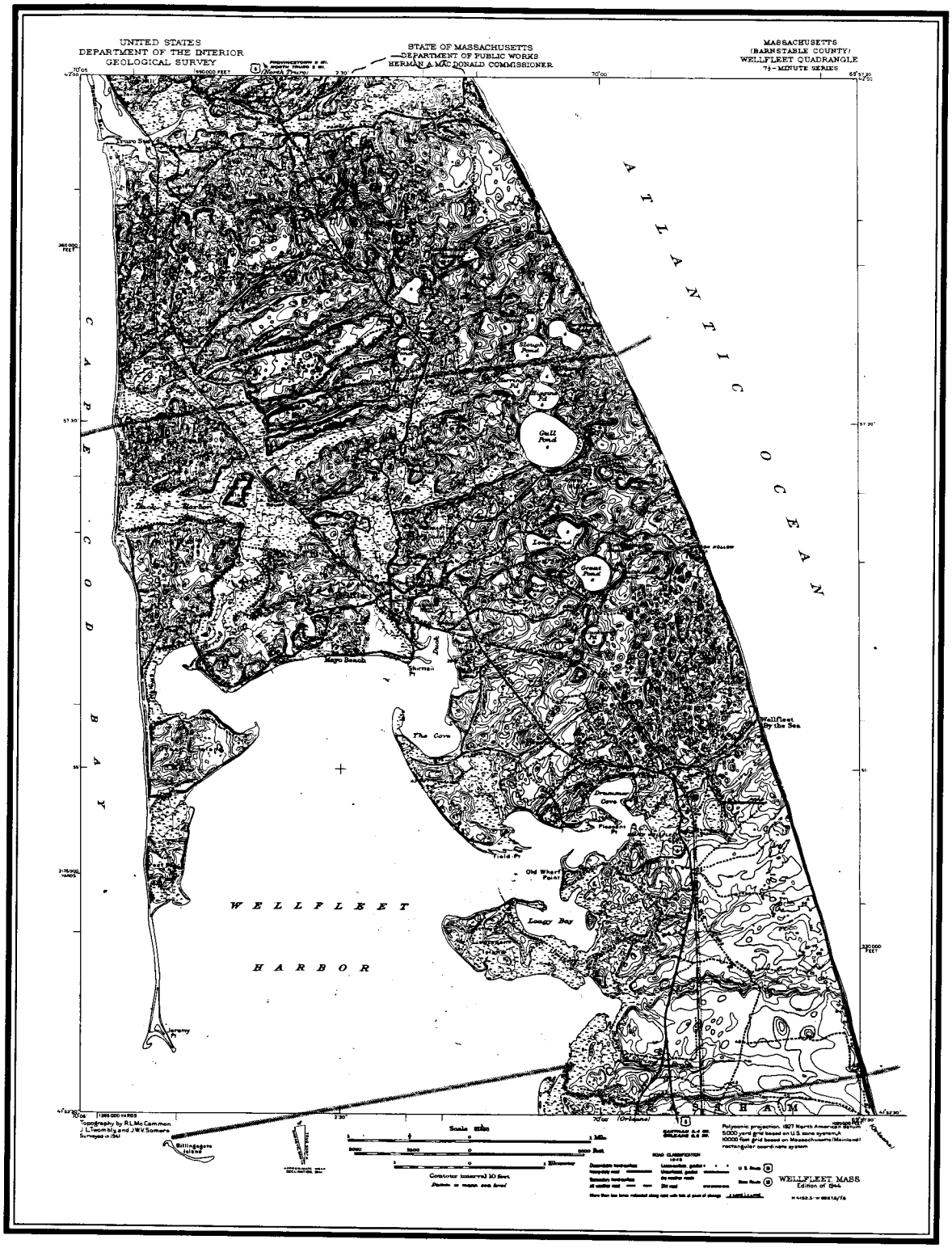


Figure 49. 1944 NORTH TRURO, MASS. USGS 7.5 MINUTE SERIES QUADRANGLE
1:31,680 SCALE TOPOGRAPHIC MAP (USGS 1944)

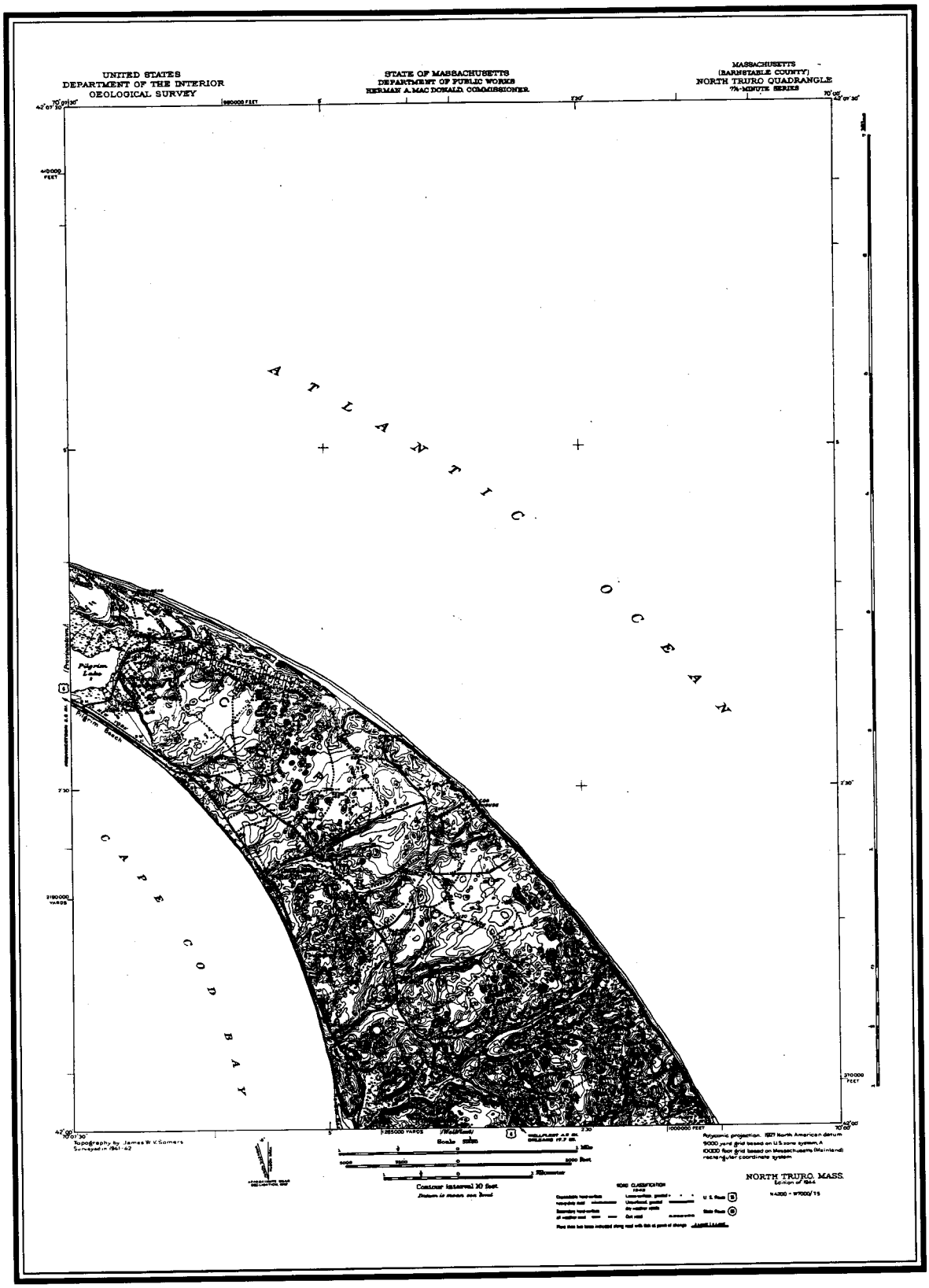


Figure 50.

1944 PROVINCETOWN, MASS. USGS 7.5 MINUTE SERIES QUADRANGLE
1:31,680 SCALE TOPOGRAPHIC MAP (USGS 1944)

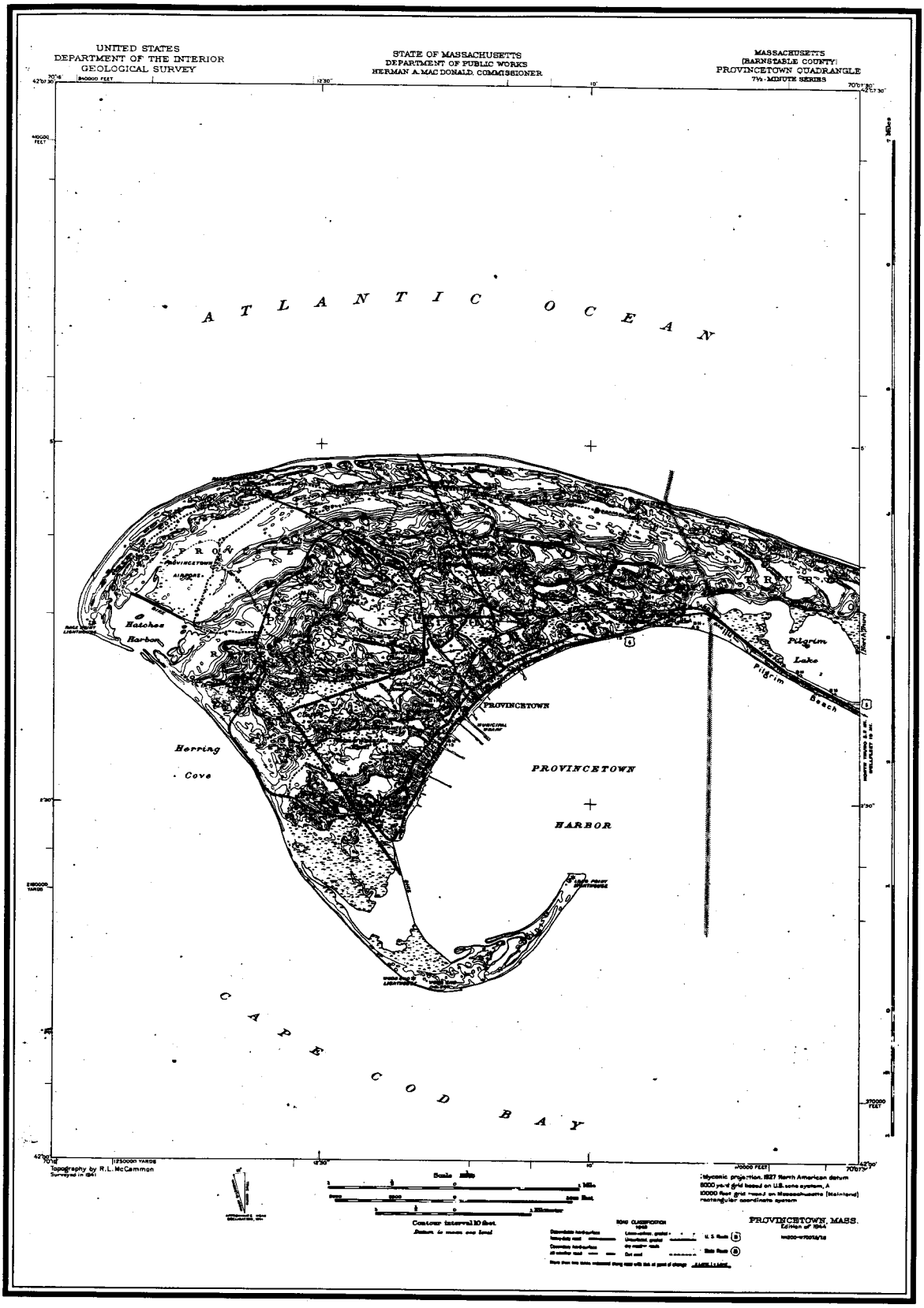
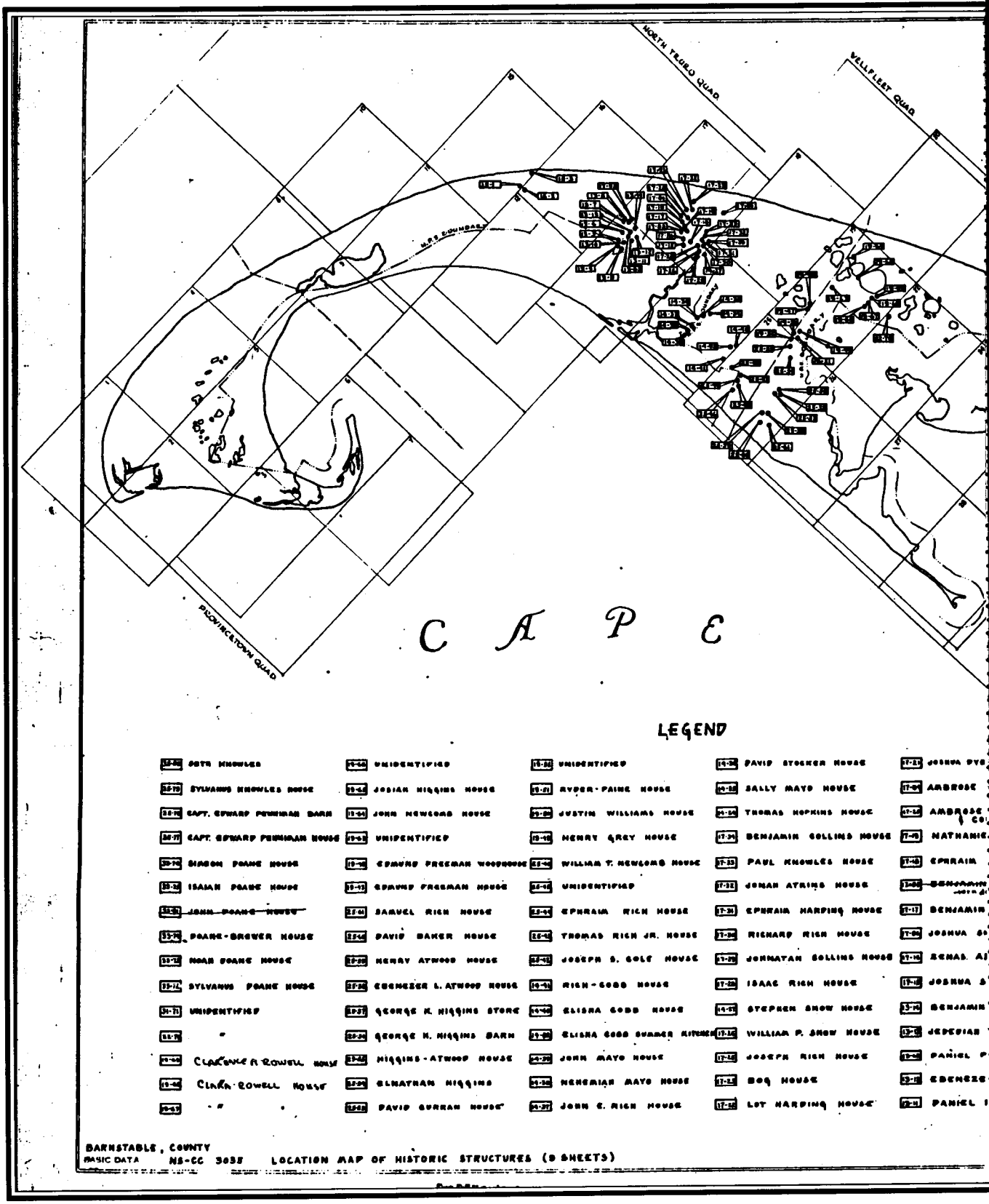


Figure 51. STANDING HISTORIC STRUCTURES INDICATED ON MAP OF PROJECT AREA
(NPS 1962)



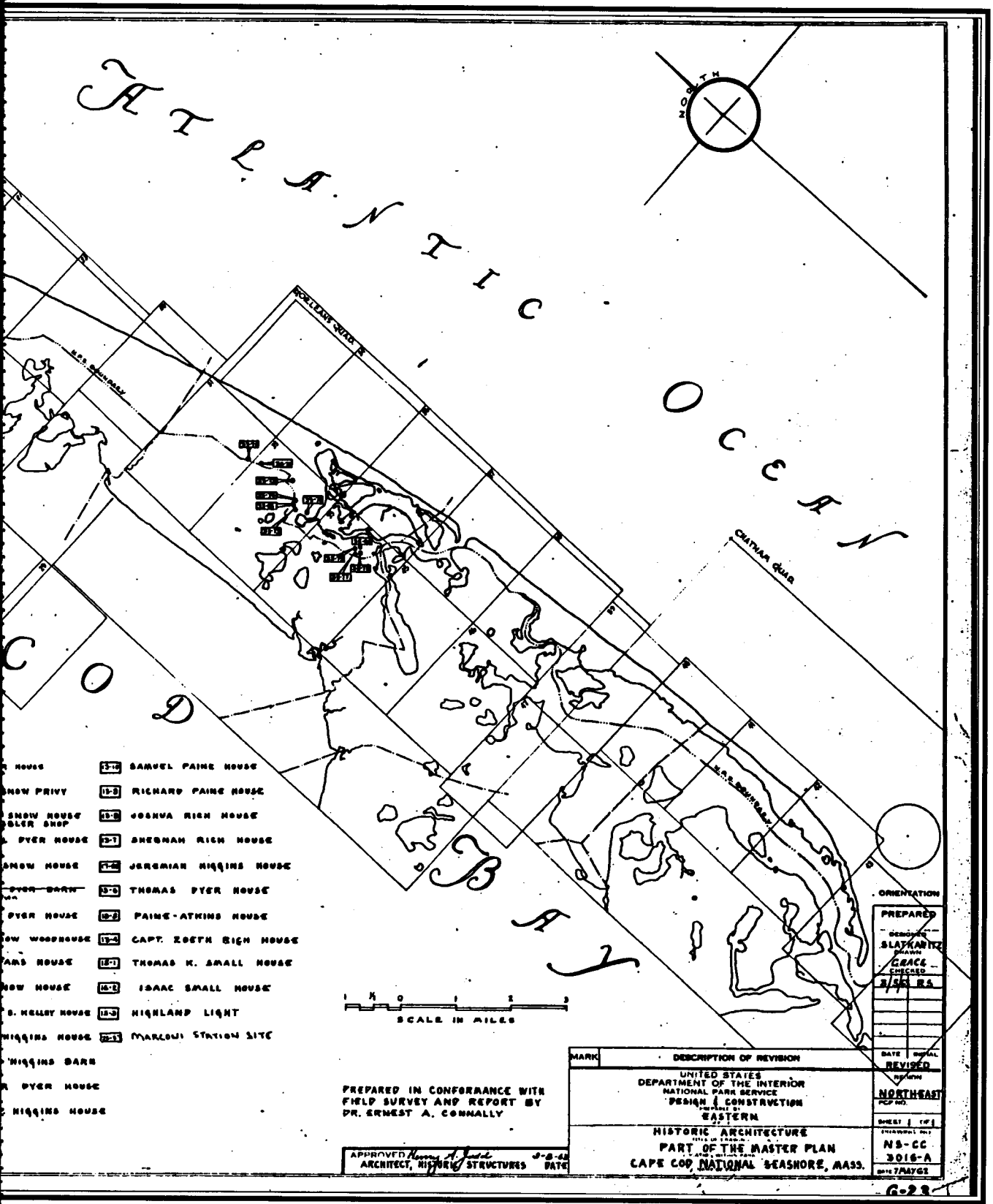

ATLANTIC OCEAN
COD BAY
NORTH
ORLEANS QUAD
CHATHAM QUAD
SAMUEL PAINE HOUSE
RICHARD PAINE HOUSE
JOSHUA RICH HOUSE
SHEBNAH RICH HOUSE
JEREMIAH HIGGINS HOUSE
THOMAS DYER HOUSE
PAINE-ATKINS HOUSE
CAPT. ZOETH RICH HOUSE
THOMAS K. SMALL HOUSE
ISAAC SMALL HOUSE
HIGHLAND LIGHT
MARCONI STATION SITE
SCALE IN MILES
PREPARED IN CONFORMANCE WITH FIELD SURVEY AND REPORT BY DR. ERNEST A. CONNALLY
APPROVED
ARCHITECT, HISTORIC STRUCTURES
DATE
MARK
DESCRIPTION OF REVISION
UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
DESIGN & CONSTRUCTION
EASTERN
HISTORIC ARCHITECTURE
PART OF THE MASTER PLAN
CAPE COD NATIONAL SEASHORE, MASS.
ORIENTATION
PREPARED
SLATKAWITZ
GRACE
REVISED
NORTHEAST
NS-CC
3016-A
G-23

Figure 52. AGRICULTURE ON THE LOWER CAPE

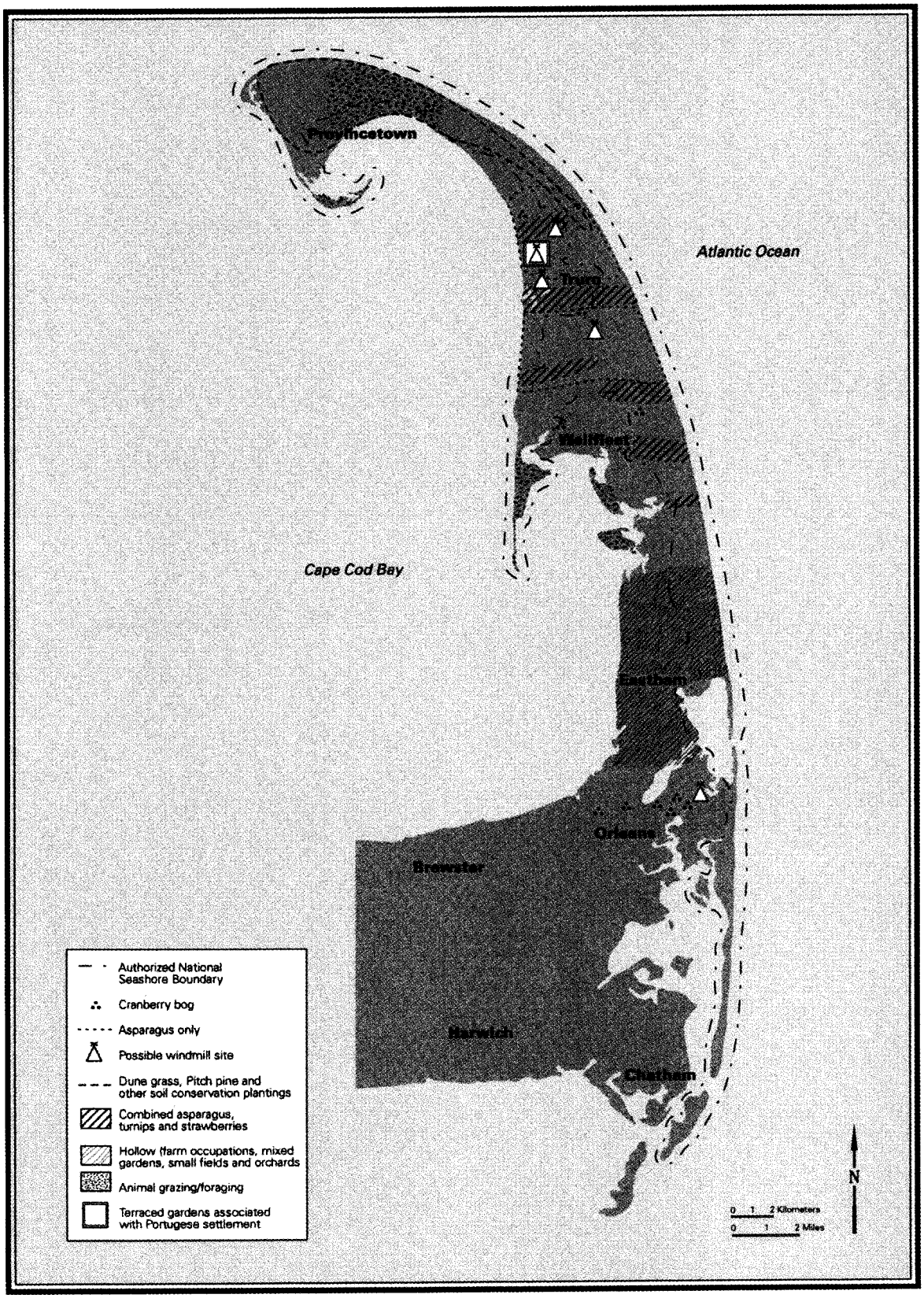


Figure 53.

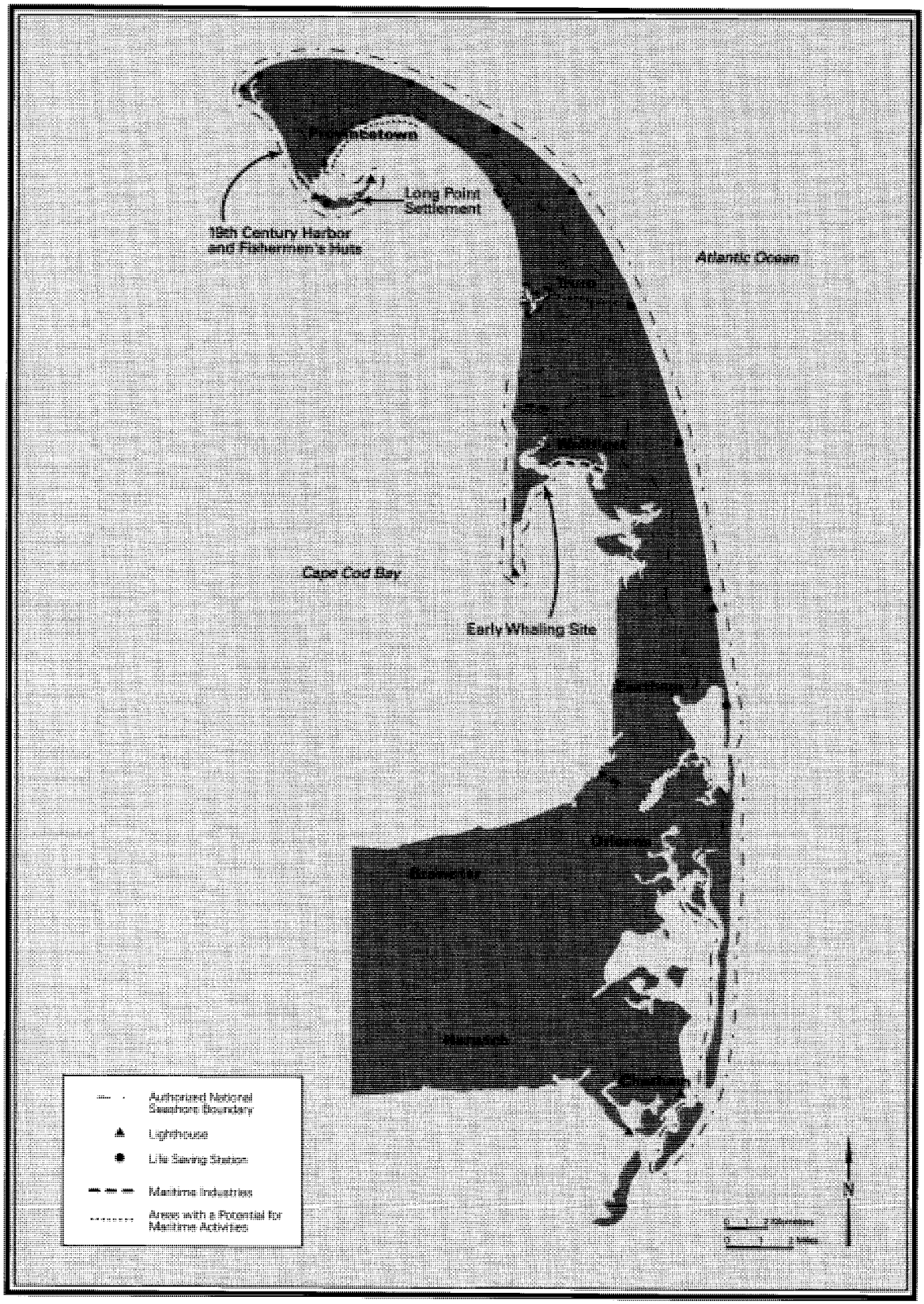
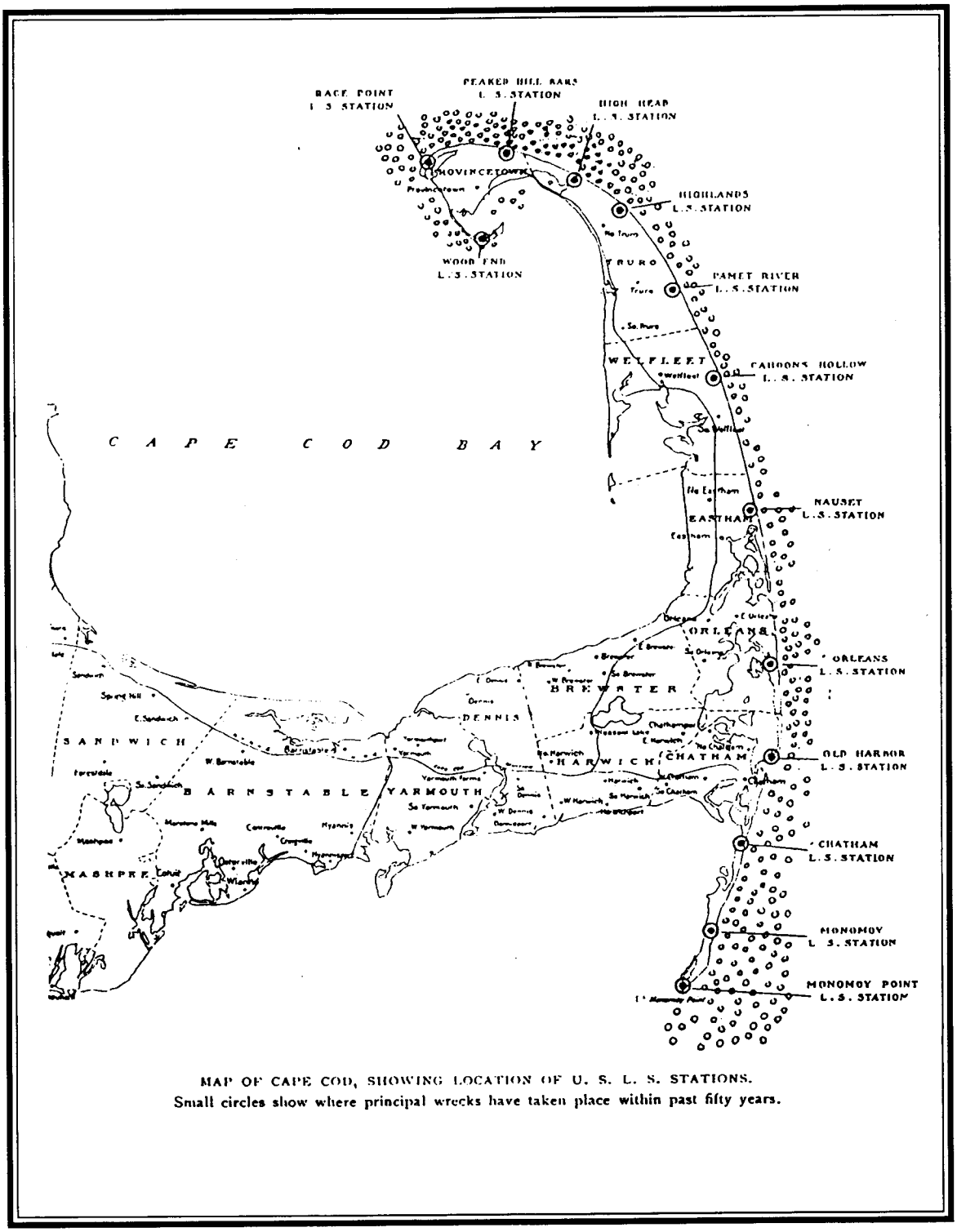

Provincetown
Long Point Settlement
19th Century Harbor and Fishermen's Huts
Atlantic Ocean
Cape Cod Bay
Early Whaling Site
Authorized National Seashore Boundary
Lighthouse
Life Saving Station
Maritime Industries
Areas with a Potential for Maritime Activities
N

Figure 54. LOCATIONS OF USLSS STATIONS AND LATE NINETEENTH-CENTURY SHIPWRECKS INDICATED ON MAP OF PROJECT AREA (DALTON 1991 [1902])



MAP OF CAPE COD, SHOWING LOCATION OF U. S. L. S. STATIONS.
Small circles show where principal wrecks have taken place within past fifty years.

Figure 55.

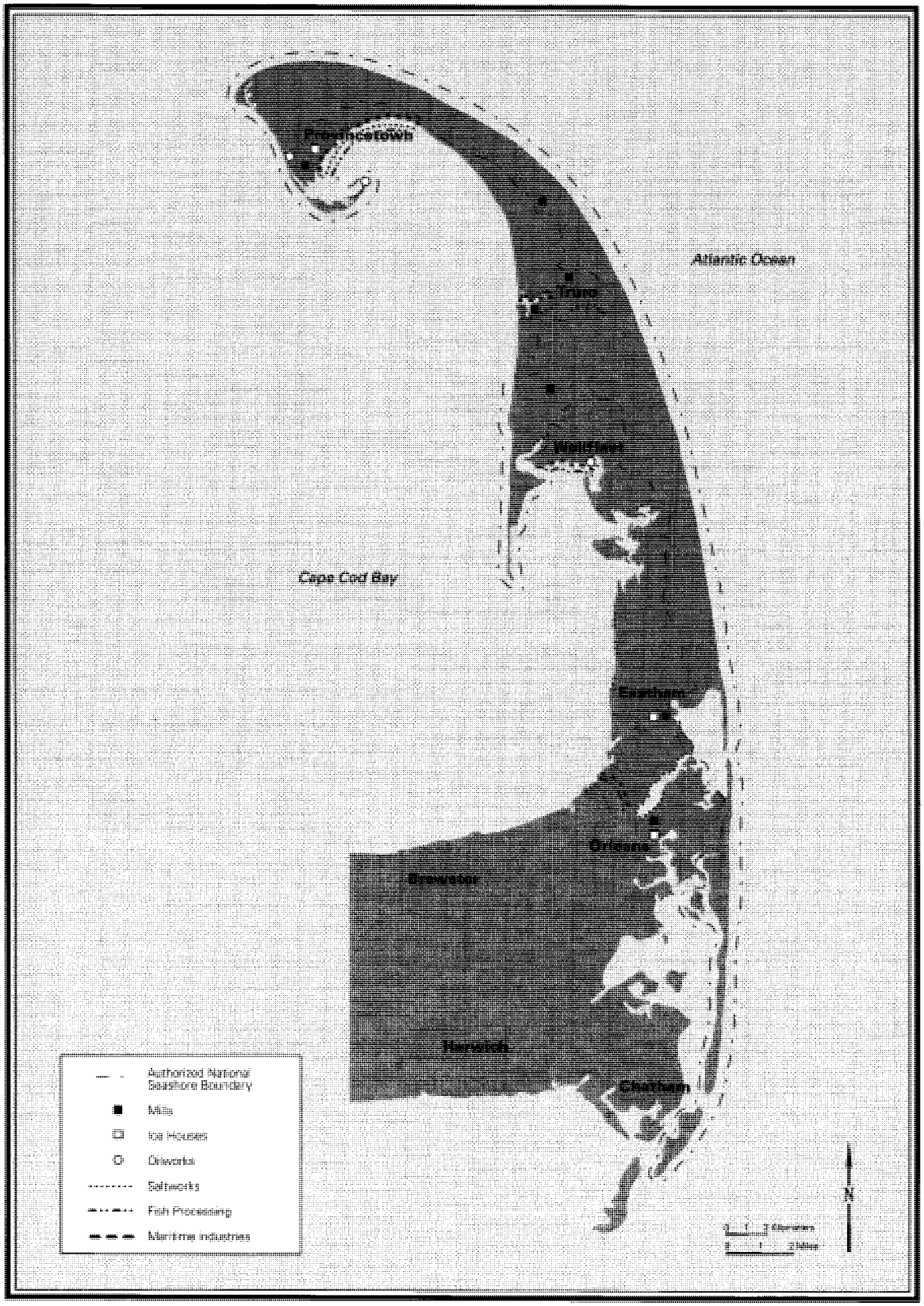
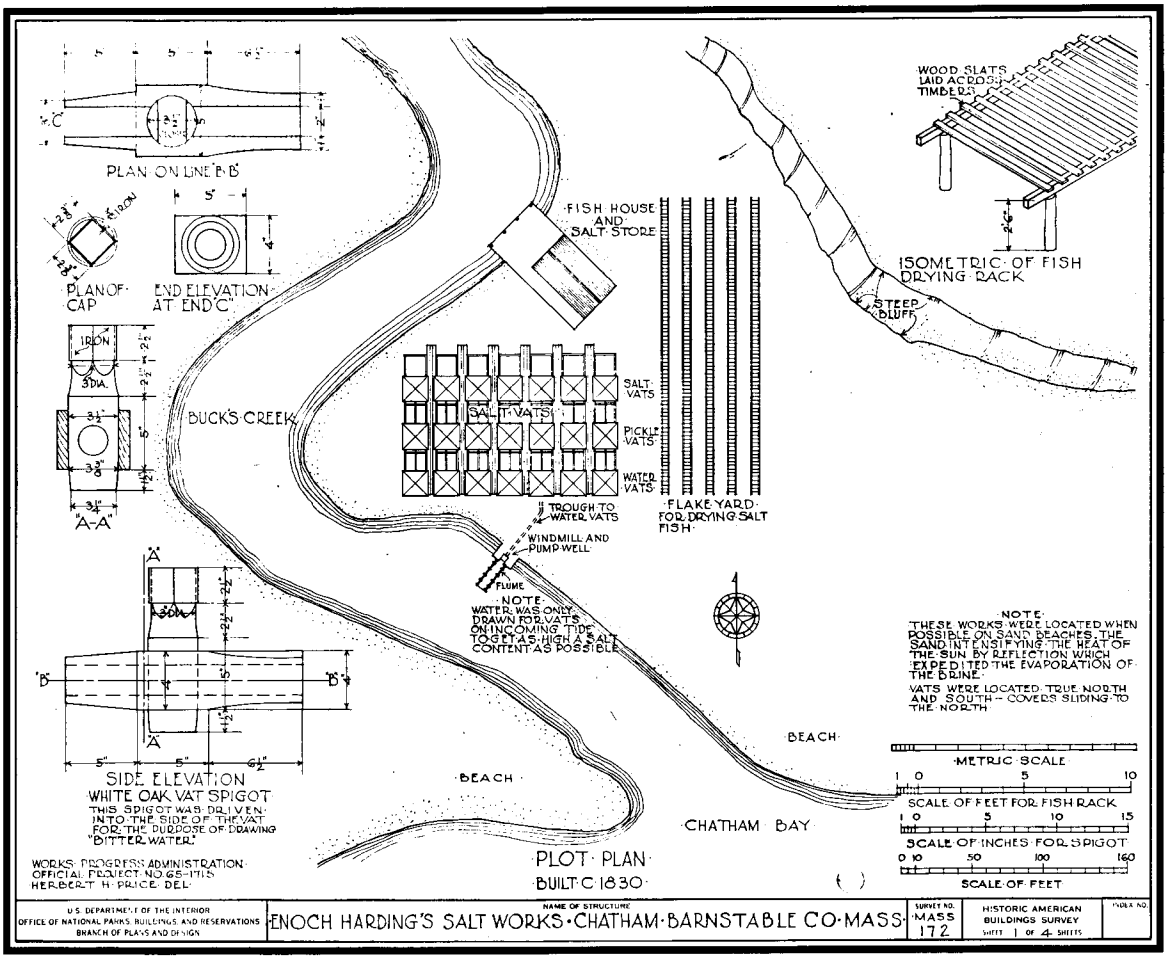

Provincetown
Truro
Wellfleet
Eastham
Orleans
Brewster
Harwich
Chatham
Atlantic Ocean
Cape Cod Bay
Authorized National Seashore Boundary
Mills
Ice Houses
Oilworks
Saltworks
Fish Processing
Maritime Industries
N

Figure 56. PLOT PLAN OF ENOCH HARDING'S SALT WORKS, CHATHAM
(HABS MASSACHUSETTS SURVEY 172)



PLAN OF SALT VATS, ENOCH HARDING'S SALT WORKS, CHATHAM
(HABS MASSACHUSETTS SURVEY 172)

Figure 57.

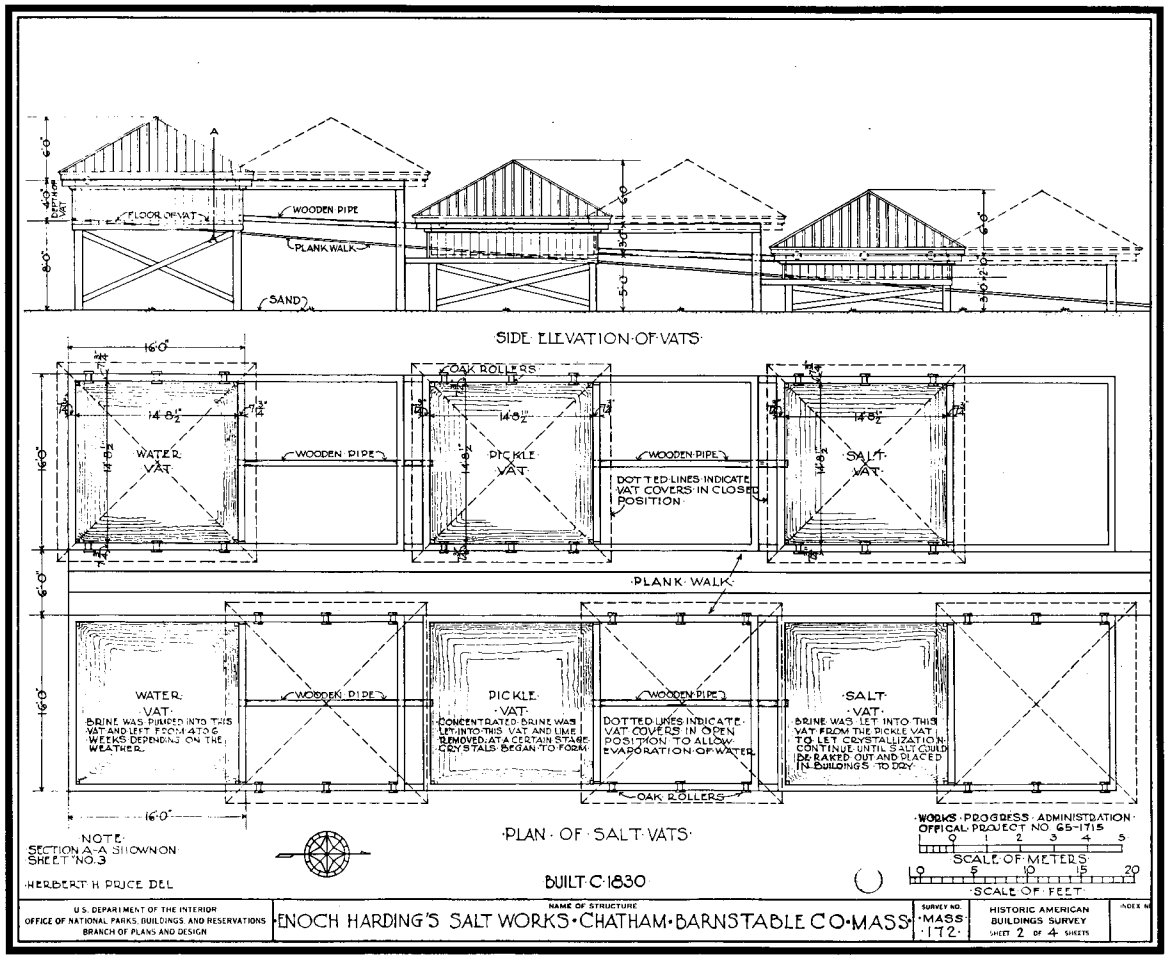
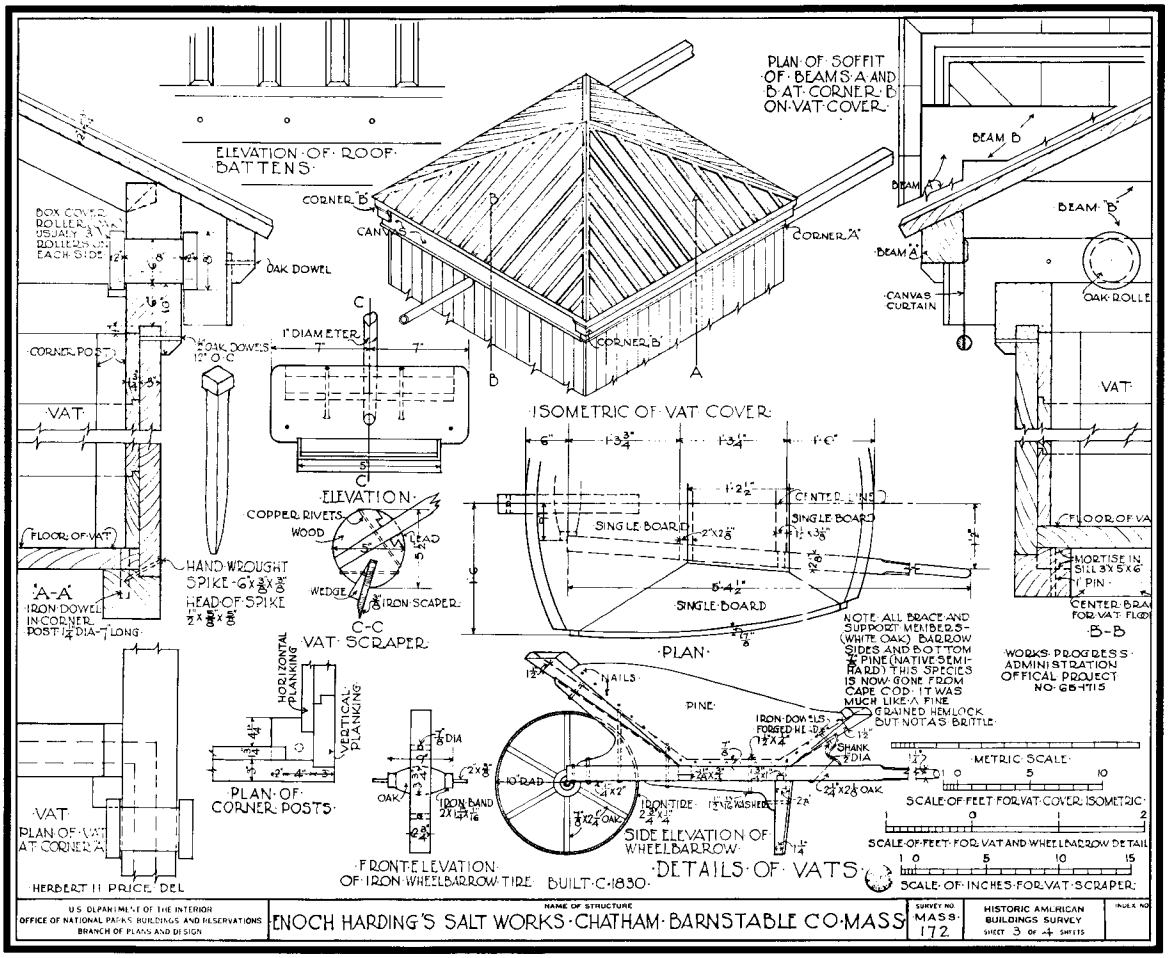
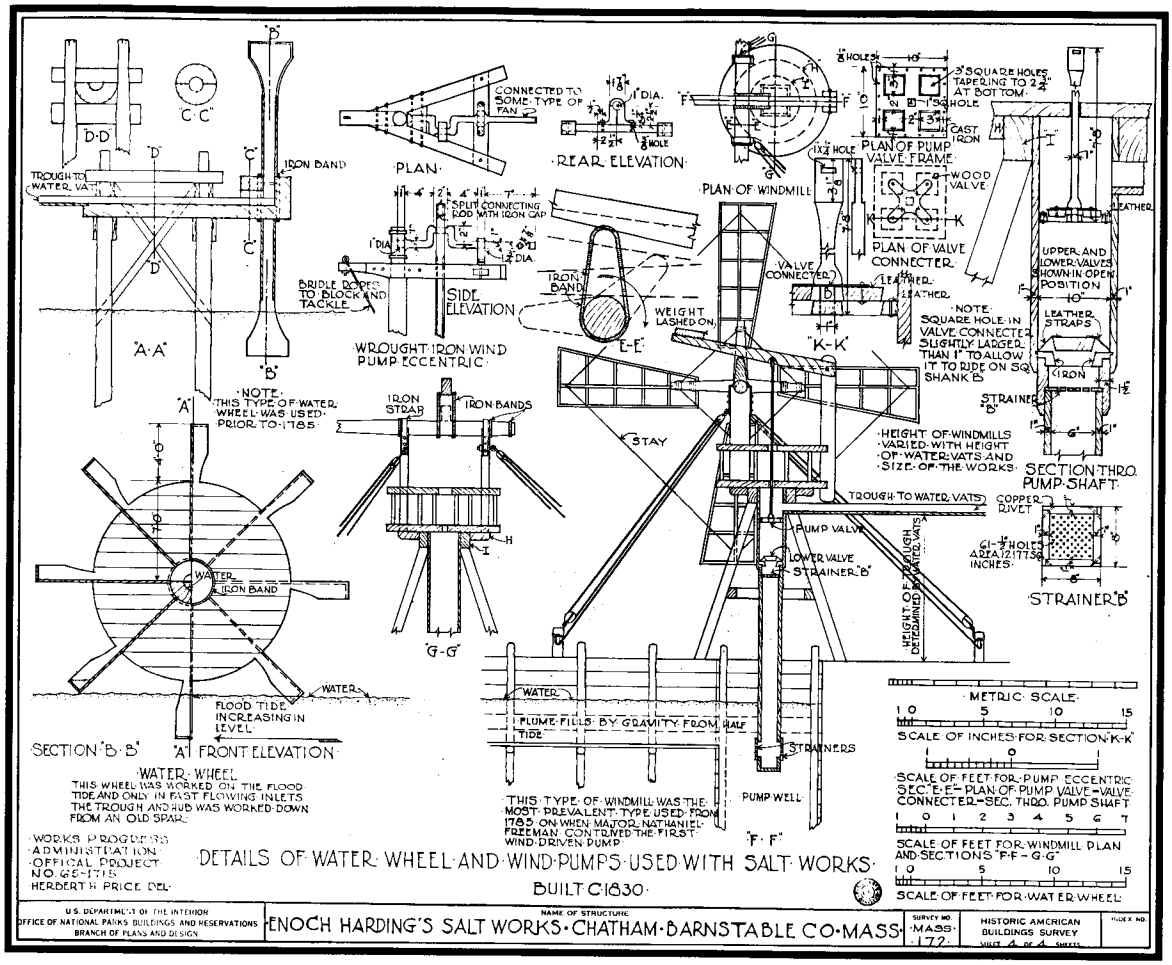


Figure 58. DETAILS OF VATS, ENOCH HARDING'S SALT WORKS, CHATHAM
(HABS MASSACHUSETTS SURVEY 172)



DETAILS OF WATER WHEEL AND WIND PUMPS, ENOCH HARDING'S SALT WORKS, CHATHAM (HABS MASSACHUSETTS SURVEY 172)

Figure 59.



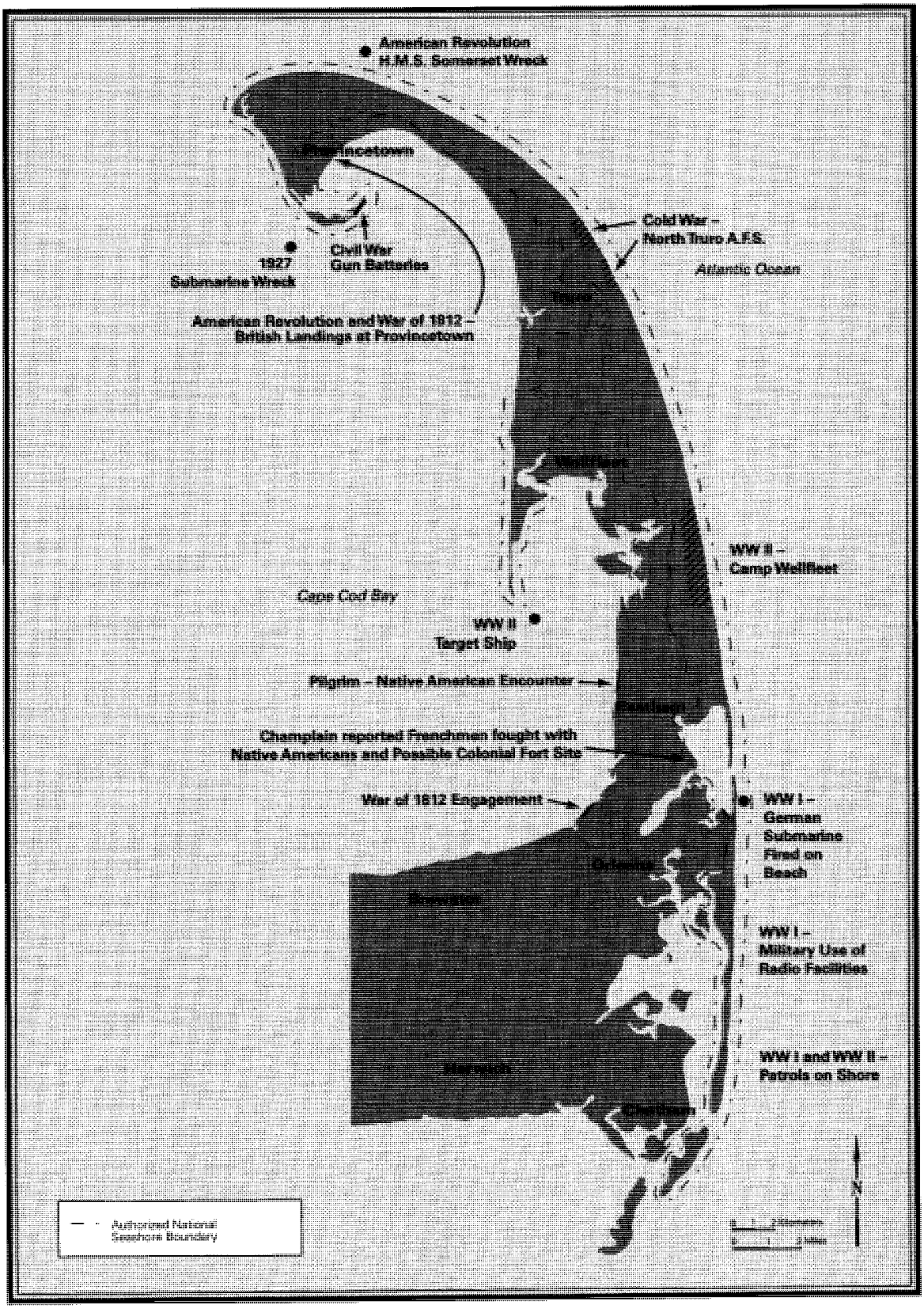

American Revolution
H.M.S. Somerset Wreck
Provincetown
1927
Submarine Wreck
Civil War
Gun Batteries
American Revolution and War of 1812 –
British Landings at Provincetown
Cold War –
North Truro A.F.S.
Atlantic Ocean
Truro
Wellfleet
WW II –
Camp Wellfleet
Cape Cod Bay
WW II
Target Ship
Pilgrim – Native American Encounter
Eastham
Champlain reported Frenchmen fought with
Native Americans and Possible Colonial Fort Site
War of 1812 Engagement
WW I –
German
Submarine
Fired on
Beach
Orleans
Brewster
WW I –
Military Use of
Radio Facilities
Harwich
WW I and WW II –
Patrols on Shore
Chatham
Authorized National
Seashore Boundary
N

Figure 61.

FEDERAL LANDS INDICATED ON 1864 MAP OF LONG POINT, PROVINCETOWN
(U.S. TOPOGRAPHIC ENGINEERS 1863-1864)

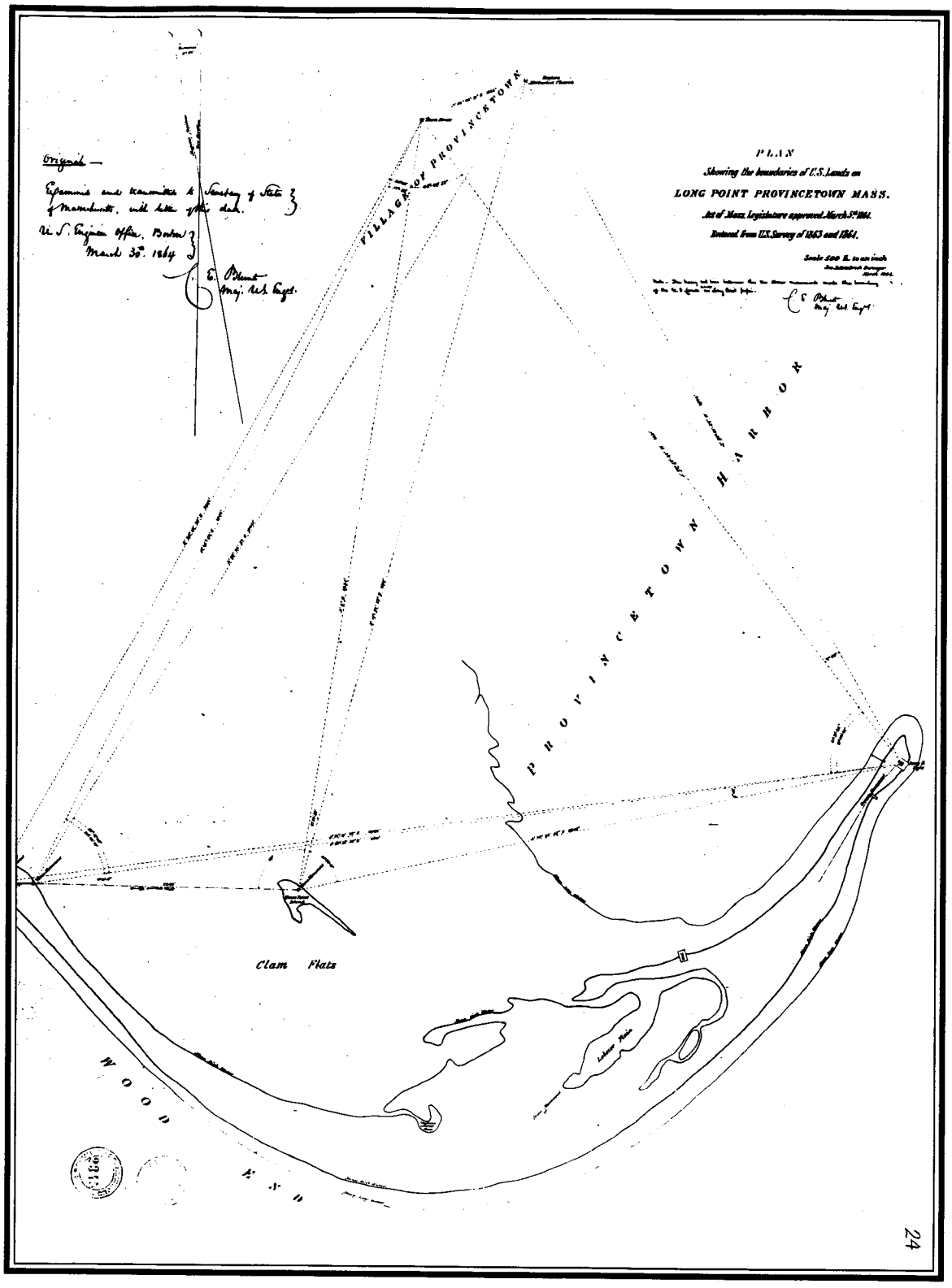


Figure 62. PLANS OF BATTERIES ON LONG POINT, PROVINCETOWN (HAAGENSEN 1871)

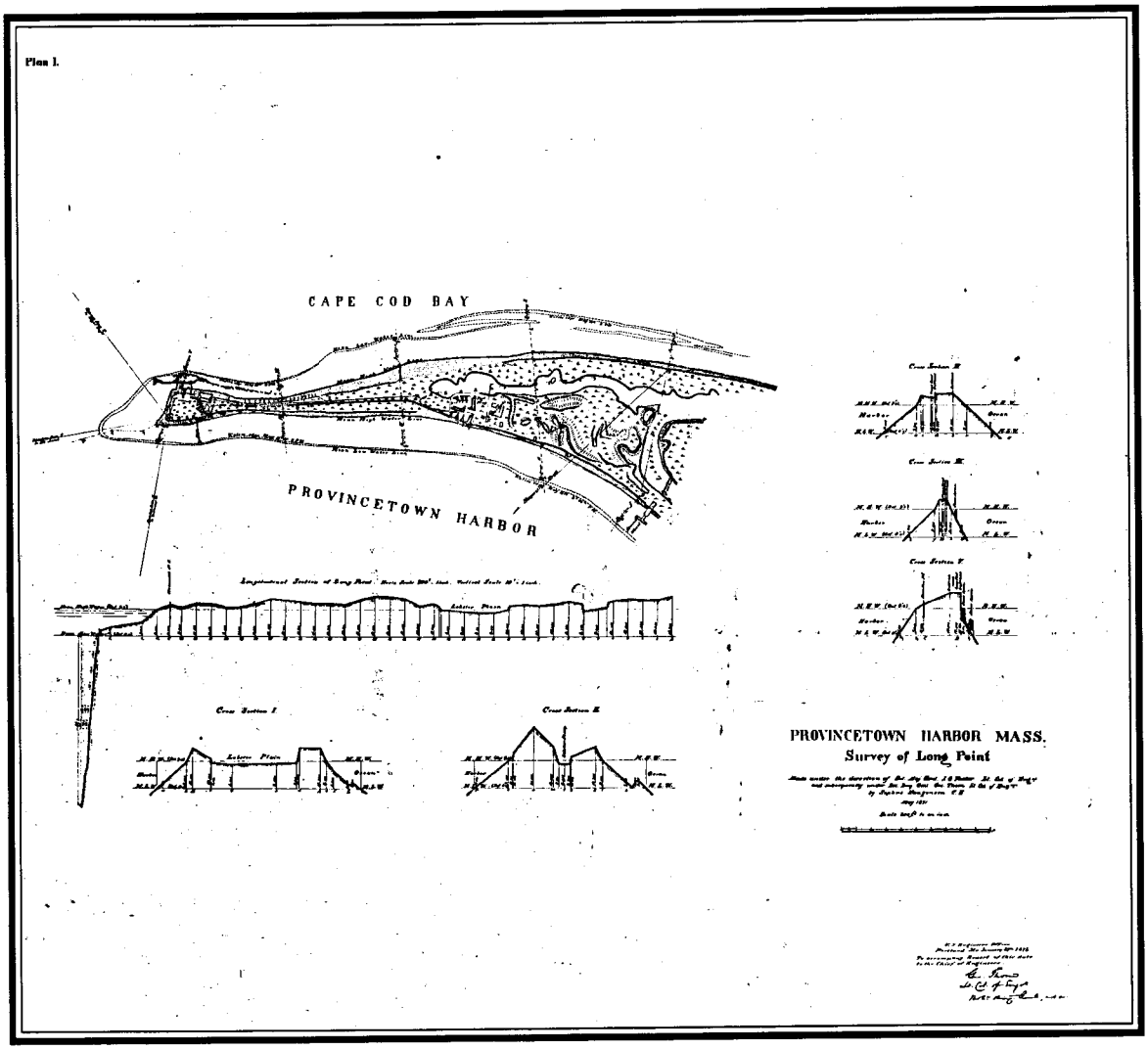


Figure 63.

PLAN OF EXISTING REMAINS OF FORTIFICATIONS AT LONG POINT
(HOLMES ET AL. 1994A)

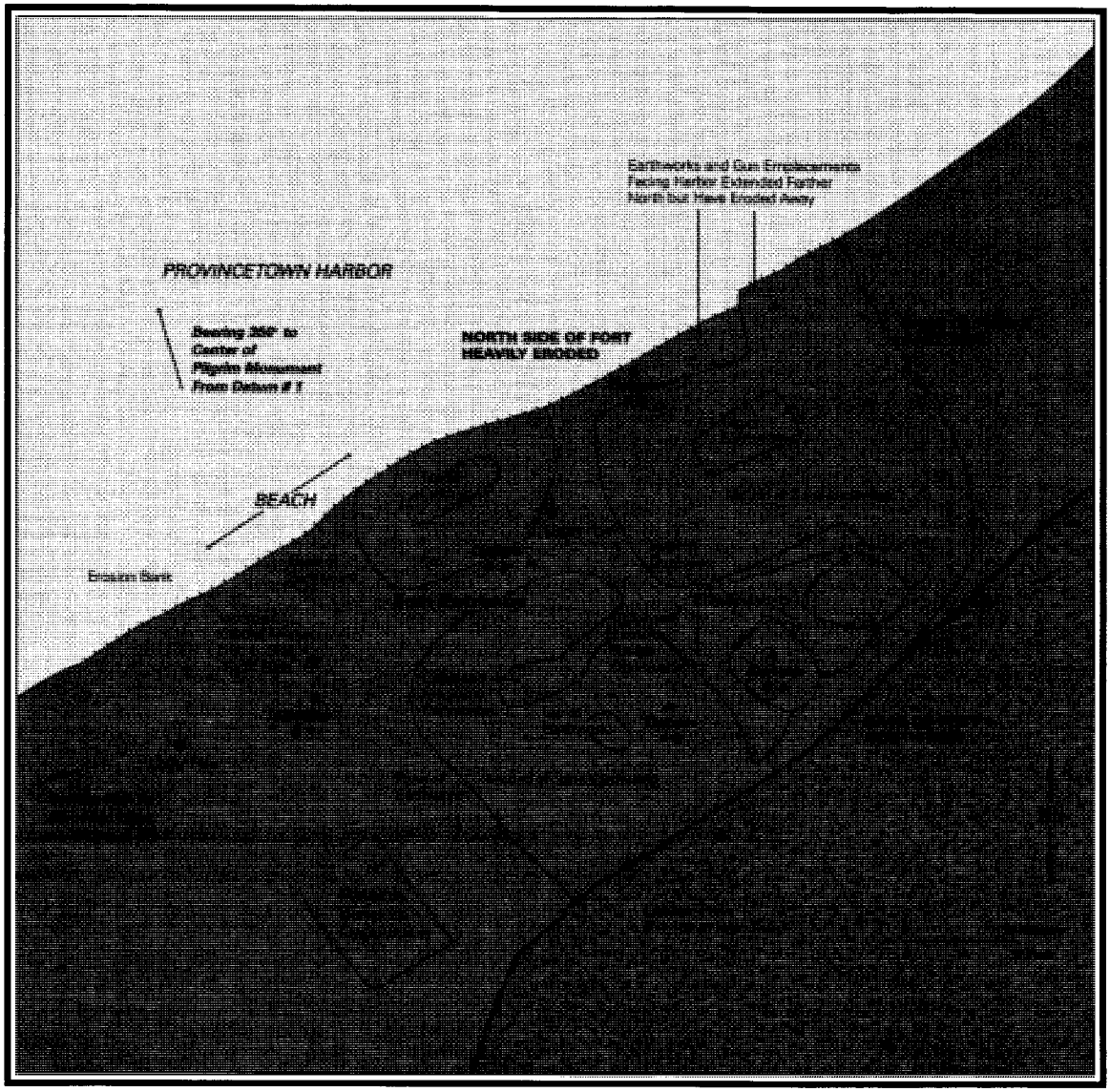
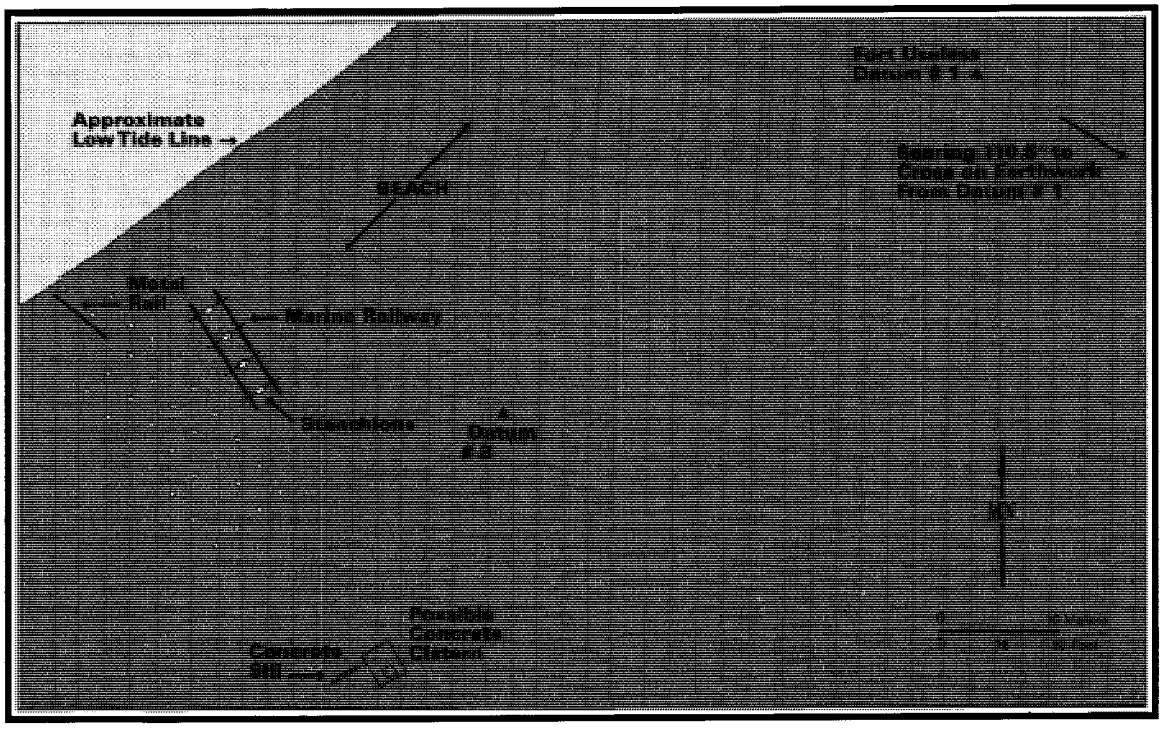
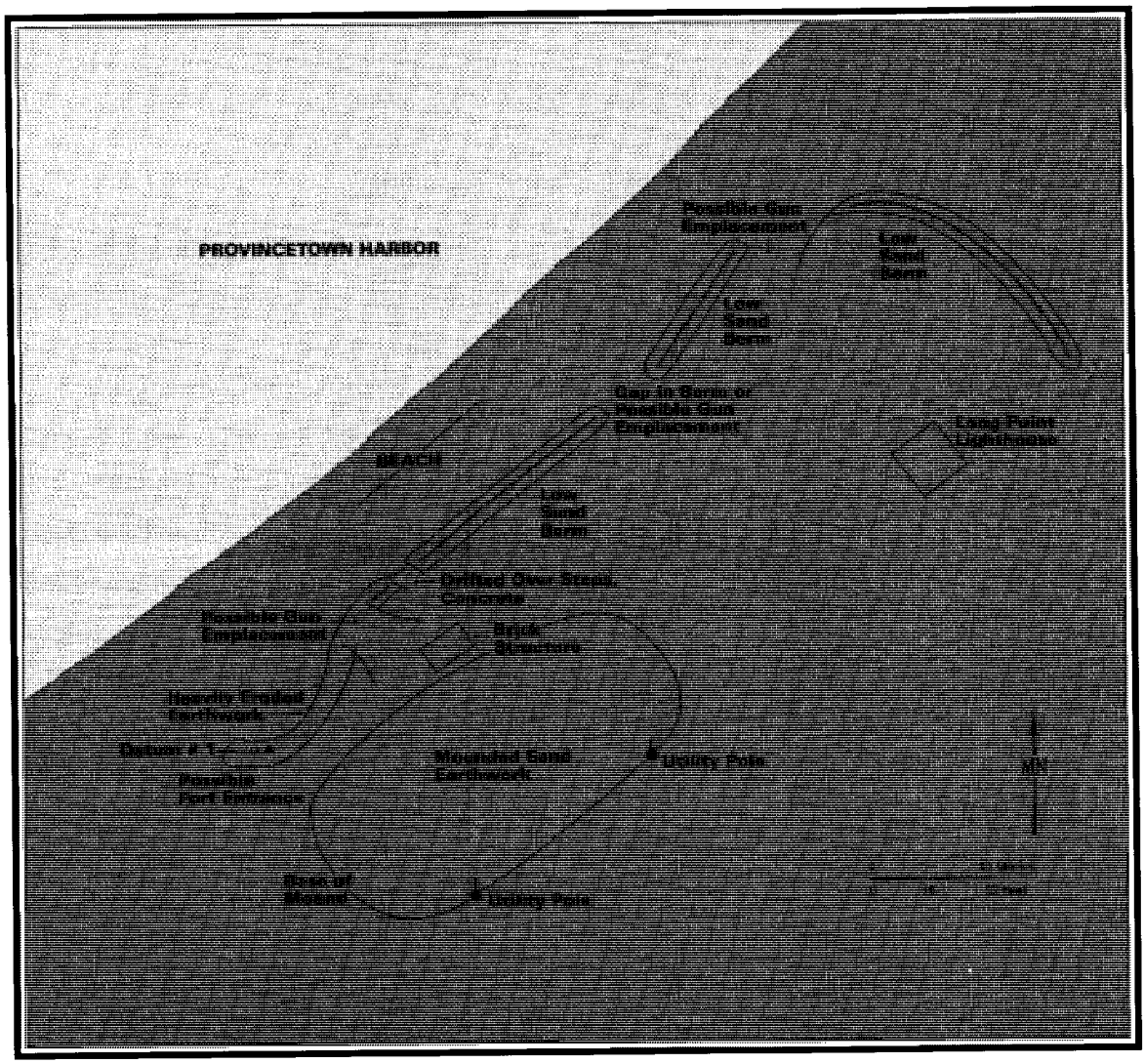


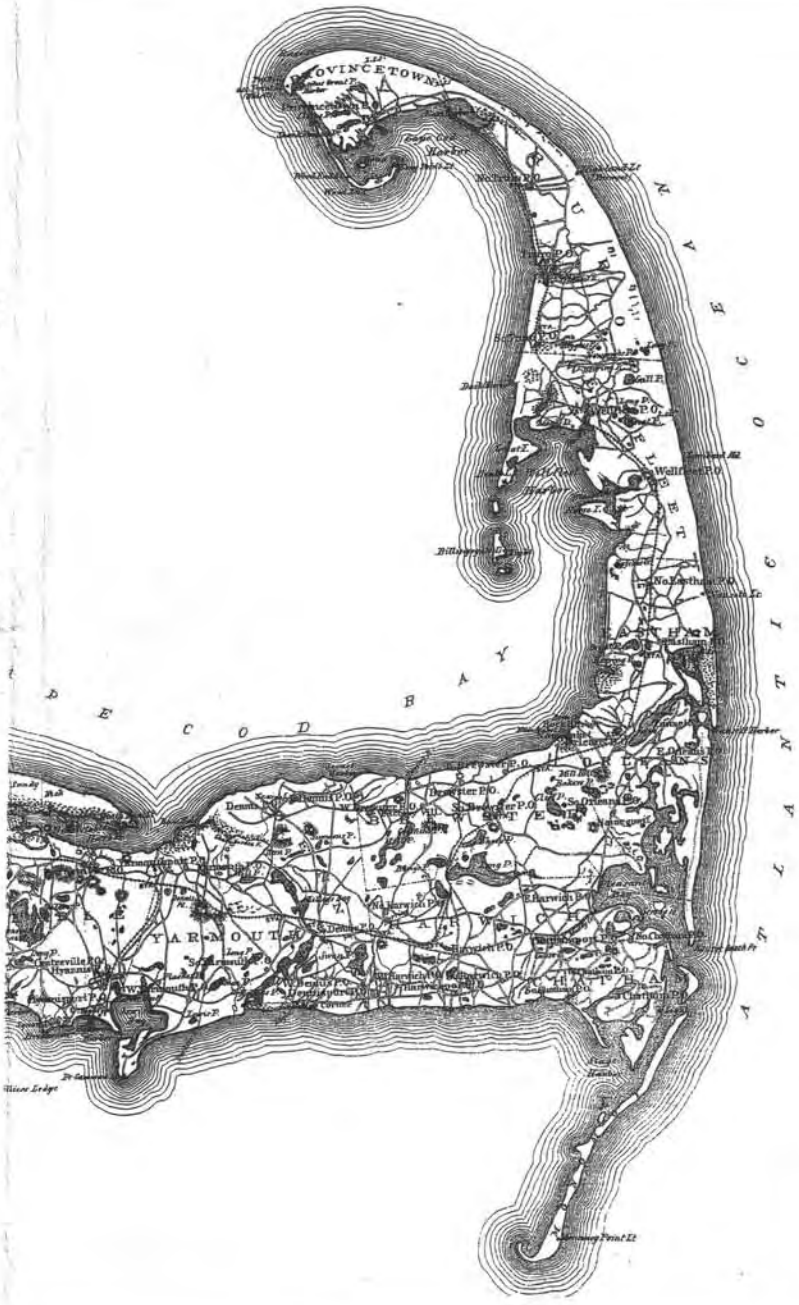
Figure 64. PLAN OF EXISTING REMAINS OF FORTIFICATIONS AT LONG POINT (HOLMES ET AL. 1994SA)



PLAN OF EXISTING REMAINS OF FORTIFICATIONS AT LONG POINT
(HOLMES ET AL. 1994A)

Figure 65.





Historic Cultural Land Use Study of Lower Cape Cod

A Study of the Historical Archeology and History of the Cape Cod National Seashore and the Surrounding Region

Richard D. Holmes
Carolyn D. Hertz
Mitchell T. Mulholland

with contributions by:
J. Edward Hood
David Glyn Nixon
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Prepared for: The Archeology Branch,
Cultural Resources Center
Northeast Region, National Park Service
U.S. Department of the Interior
Lowell, Massachusetts

Prepared by: The University of Massachusetts
Archaeological Services
The Environmental Institute
Blaisdell House
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Amherst, MA 01003

Cover photograph: Alex MacLean
Cover drawing: *Atlas of Barnstable County, Massachusetts.* Geo. H. Walker and Company, 1880. 16-17.

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ACKNOWLEDGMENTS

This project was undertaken by the University of Massachusetts Archaeological Services (UMAS) of Amherst in cooperation with the National Park Service (NPS). The principal authors were Richard D. Holmes, Project Archeologist; Carolyn D. Hertz, Project Historian; and Mitchell T. Mulholland, Principal Investigator and Director of UMAS. Members of the Cape Cod (CACO) Research Group who worked on bibliographic materials, context development, and initial research and text were J. Edward Hood (architecture and infrastructure, public institutions), David Glyn Nixon (agriculture, maritime life, art colonies, and tourism), and Ellen-Rose Savulis (minority populations and Native Americans). Additional material on military technology was researched by Frederick T. Barker. Frederick J. Dunford of the Cape Cod Museum of Natural History reviewed material on Native Americans and provided suggestions on the Prehistoric and Contact periods of the Cape.

Staff of the NPS and the Massachusetts Historical Commission (MHC) who participated on a regular basis were Dick Hsu, former Regional Archeologist for the North Atlantic Region; Paul Weinbaum, former Regional Historian for the North Atlantic Region and now Lead Historian for the Boston Support Office; Frank Ackerman, Chief, Division of Interpretation and Cultural Resources Management at Cape Cod National Seashore (NS); and Michael Steinitz of the MHC. Not only did this group make valuable suggestions, but also their discussions turned this project into a fascinating seminar on the historical archeology and history of the region.

Several other persons reviewed material and made suggestions. Among them were Marguerite Reinke, Paul Mullins, and Eric Johnson of UMAS; Rebecca Joseph of the NPS; and Leonard Loparto of the MHC.

Many other individuals deserve thanks for their contributions. Although one runs the danger of omitting someone, among those who were of assistance to this project were Michael Whatley, Hope Morrill, William Burke, and other staff members of the NPS; Mark Adams of the Massachusetts Audubon Society; and librarians at the local libraries of Cape Cod. Members of local historical commissions and societies were uniformly helpful, as were many other residents. The reconnaissance reports associated with this document acknowledge and thank all those who have been helpful at various stages of this project.

UMAS is also fortunate in having the benefit of having consulted on previous projects with authorities on subjects relevant to this one, including such topics as the Pilgrims, Native Americans of the region, and maritime history; to these individuals, who are acknowledged in our other reports, our thanks again.

Computer assistance was provided by Margareta Chmiel. Mark Will served as library assistant. Field crew members on the archeological reconnaissance surveys also gave aid in researching materials at the Seashore Headquarters library when the weather did not cooperate; they are named in the various reconnaissance reports. Graphics were prepared by Maureen Manning-Bernatzky. The editors were Eric Johnson, Marguerite Reinke, and Jan Whitaker. NPS editing of the report was performed by Sharon Ofenstein of the Northeast Cultural Resources Center.

A note of thanks must also be given to the previous students of the Lower Cape, whose work was valuable for our own research. We hope that future archeologists, historians, and cultural geographers, as well as planners and managers, will find this volume useful.

The National Park Service began a multi-year National Archeological Survey Initiative (NASI) designed to locate, assess, and evaluate the archeological resources in all park areas. To do this for a large geographical area with a complex land-use history requires an interdisciplinary study of land use.

Managers of the former North Atlantic Region, NPS, decided to undertake a cultural land-use study of Cape Cod National Seashore. This was a pilot project designed to establish a framework for explaining the presence and form of historic archeological resources. Cape Cod NS was selected because of its many varied and dispersed archeological resources. After the study began, the North Atlantic Region was combined with the Mid-Atlantic Region to create the Northeast Region. The study will permit the significance of individual resources to be evaluated for purposes of determining National Register eligibility. Previously, the Massachusetts Historical Commission conducted a regional reconnaissance-level survey of Cape Cod and the Islands (**Bradley 1987**), providing broad historical themes for the region. Surveys of the history of the Lower Cape and historic resources have been prepared by **Clemensen** (1979) and **Rockmore** (1979). The NPS conducted a survey of historic structures in the seashore (**Pfeiffer 1987**), and also an archeological survey that addressed historic land use but was concentrated on prehistoric sites (**McManamon 1984**).

The project consisted of four segments: (1) a literature search, assessment, and description of methodology; (2) an outline of historic contexts and associated resources; (3) case studies, or archeological reconnaissance surveys; and (4) a cultural land use study. This report represents this fourth portion of the project. A summary of the segments follows:

1 Literature search, assessment, and description of methodology. The purpose of this segment was to determine the extent and location of information about topics deemed important in the region's history. This segment was completed preparatory to the construction of historic contexts (the second segment) and the case studies that applied them to Cape Cod National Seashore (the third segment). It resulted in an annotated bibliography, which was presented to the NPS in digital format.

2 Outline of historic contexts and associated resources. The purpose of this segment was to provide a framework for the cultural land use study, and to synthesize data in summary form. "Historic contexts are information about historic trends and properties grouped by an important theme in prehistory or history of a community, State, or the nation during a particular period of time" (**NPS 1991**:4). They are organized around theme, place, and time, and they provide a framework for interpreting sites and determining significance and National Register eligibility. Associating historic contexts with sites and archeological implications provides models for the location, identification, and interpretation of historic resources.

The outline was provided to the NPS in the course of this project. Not all contexts initially considered important in the Lower Cape Cod region could be investigated archeologically; consequently, the historic contexts developed are those that can be associated with artifacts, features, and landscapes, as well as documents. Nonetheless, the principal historic contexts for the interpretation of historic land use of the region have all been addressed.

3 Case studies. These are archeological reconnaissance surveys. They are conducted to demonstrate the connection between contexts and the evaluation of park resources. Field surveys are used to identify and interpret extant cultural features and anomalies or other indicators of past land use and potential subsurface features. Once the principal historic contexts were determined and initially researched, the case studies were undertaken to test the applicability of the contexts for the interpretation of sites. Further research on the individual project areas also added further information, particularly concerning archeological implications and expectations of archeological sensitivity. The case studies are reported as follows:

Holmes, R.D., C.D. Hertz, and M.T. Mulholland

1994a *Archaeological Reconnaissance Survey of Fort Hill, Cape Cod National Seashore, Eastham, Massachusetts.* University of Massachusetts Archaeological Services Report 154b, Amherst.

1994b *Archaeological Reconnaissance Survey of the Atwood-Higgins Complex, Cape Cod National Seashore, Wellfleet, Massachusetts.* University of Massachusetts Archaeological Services Report 154c, Amherst.

1994c *Archaeological Reconnaissance Survey of Higgins Hollow, Cape Cod National Seashore, Truro, Massachusetts.* University of Massachusetts Archaeological Services Report 154e, Amherst.

Holmes, R.D., C.D. Hertz, F.T. Barker, and M.T. Mulholland

1994 *Archaeological Reconnaissance Survey of Long Point, Cape Cod National Seashore, Provincetown, Massachusetts.* University of Massachusetts Archaeological Services Report 154d, Amherst.

4 **Cultural land use study.** This is a report that defines, describes, and graphically illustrates the historical contexts within which archeological resources may be identified, located, interpreted, and evaluated. It assesses the relative importance of each context so that management decisions may be made for resource preservation and protection. It discusses the archeological implications of each context. Archeologically sensitive areas are identified on the basis of previous research, field surveys, documentary evidence, and the expectations derived from the historic contexts.

The present volume is divided into eight chapters. Its first chapter provides background information on the environment, prehistory, and history of the region. It places the Lower Cape into a general historical framework by means of a timeline, and discusses the specific historical development of the six towns of the Lower Cape: Chatham, Orleans, Eastham, Wellfleet, Truro, and Provincetown. Topics addressed include early European exploration and settlement; the Pilgrims at Plymouth and Nauset; changes in economy, subsistence, and population; and major events of the past three and a half centuries. Historical sources useful for research are noted and evaluated. Subsequent chapters discuss the principal historic contexts for the interpretation of archeological resources and historical trends. The contexts are as follows:

Native American Settlements
Agriculture and Rural Life
Maritime Life
Industries: Extractive, Processing, and Manufacturing
Military Affairs
Tourism and Seasonal Residence
Transportation and Communication

These broad contexts contain many more specific topics. Some of these topics could have been considered in more than one context. For example, fish processing could be categorized either as part of maritime life or as a processing industry. Such topics were assigned to one among several potentially appropriate contexts in a somewhat arbitrary manner. Other topics presented different challenges that also required organizational decisions. For example, rather than considering minority populations as contexts in themselves, this volume places them within the historic contexts relevant to the Lower Cape as a whole. The problems with studying minority or "marginalized" populations are that the documentary record is very thin and the archeological record has not been thoroughly investigated. One conclusion of the research conducted for this project is that ethnographies and oral histories are needed to adequately represent the Portuguese and post-Contact Native Americans in the region.

Periodization in this volume follows that of the MHC and most northeastern archeologists for both prehistory and history. Although this may sometimes lead to the over-representation of events at the expense of processes, it does provide a convenient way to organize material and compare what was happening in different places and among different historical themes.

Geographic division was another concern. Since this wass a pilot study, it was not thought appropriate to focus solely on the towns at the expense of region-wide developments. Nevertheless, the particularity of New England towns required that attention be paid to the six individual towns and their different histories.

One important aspect of this study was to associate the contexts with archeological implications and historic resources. The archeological implications are hypotheses about the presence of artifacts, features, soils, and landscapes associated with a given context. They are included in the present volume.

The present volume also can be used as a handbook for further research. In addition to the text, it contains a compendium of historic maps useful for archeologists, historians, and cultural geographers. The bibliography includes all of the titles in the annotated bibliography, with a guide for locating some of the rarer works.

In sum, this portion of the project is useful for archeologists and historians performing research, and for park planners managing land on the Lower Cape, since it provides contexts within which to predict the location of sites and to interpret sites that have been encountered. Several research questions of significance are suggested. Every archeological implication is itself a hypothesis to be tested.

This volume does not presume to answer all questions on the archeology and history of the Lower Cape; the planning of this project included the understanding that further work would be undertaken on the topics addressed here. If any factual errors have occurred in the text, the reader is invited to correct them. Regarding the interpretations and conclusions of this volume and the reconnaissance surveys, as is the case with all models, ideal types, and syntheses in the social and historical sciences, further research can and should lead to revision and refinement.

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