

Toward an Ocean Vision for the Nantucket Shelf Region

EXECUTIVE SUMMARY

.... “User conflicts can and do arise when incompatible activities take place in the same area. A comprehensive offshore management regime is needed for the balanced coordination of all offshore uses.”

-- U.S. Commission on Ocean Policy (June, 2004)

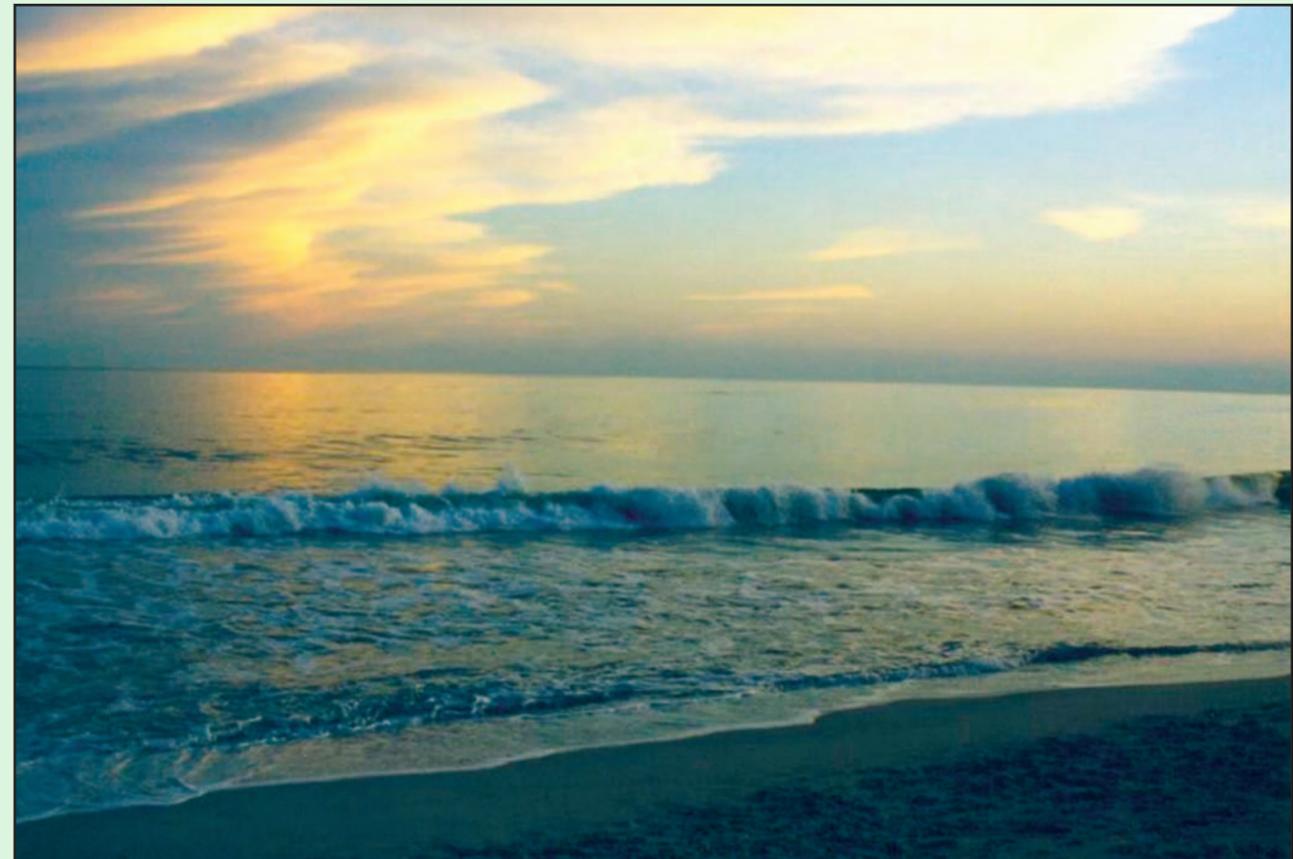


“U.S. ocean and coastal resources should be managed to reflect the relationships among all ecosystem components, including human and nonhuman species and the environments in which they live. Applying this principle will require defining relevant geographic management areas based on ecosystem, rather than political, boundaries.”

-- U.S. Commission on Ocean Policy (June, 2004)

“New ocean management structures are needed to promote consistent, coordinated ocean management policies and to ensure that the geographic divisions among federal and state management authorities support rather than prevent sound ecosystem management across a variety of jurisdictions”

-- The Massachusetts Task Force Ocean Management(March, 2004)



Introduction

The ocean off the coast of Massachusetts has been the focal point for a growing number of activities and proposals in recent years. Proposals to construct the nation’s first offshore wind power project have attracted recent attention; however other Massachusetts offshore waters have also been examined for potential energy facilities, offshore aquaculture sites, cable crossings, sand and gravel mining, oil and gas drilling, transportation routes and a variety of commercial and recreational activities. Ongoing issues include the implementation of fisheries management plans and marine mammal protection strategies.

The number of competing and often conflicting uses of the ocean has become problematic. Despite widespread interest in the development of renewable energy and aquaculture, proposals for these large-scale offshore facilities have revealed significant gaps in federal authority relating to the leasing of public underwater lands and permitting of offshore uses. Technological advances will undoubtedly continue to increase the number of prospective uses of ocean resources. In the face of these challenges, the ocean is an invaluable and vulnerable resource that merits a thoughtfully planned and balanced comprehensive management plan.



In 2003, the Provincetown Center for Coastal Studies issued a report entitled “*Review of State and Federal Marine Protection of the Ecological Resources of Nantucket Sound*,” documenting previous initiatives to establish a clear and consistent science-based policy of resource protection that would be applicable across local, state and federal jurisdictions. Over a period of more than 30 years, specific actions toward this end have included the following:

- The state legislature in 1972 included Nantucket Sound in the Cape and Islands Ocean Sanctuary Act. This action was intended to provide full protection of the seabed and the Sound, which the state regarded as being within state jurisdiction, just as all of Cape Cod Bay is considered to be state waters. In the late 1980’s, however, the U.S. Supreme Court ruled that the state had not proven its colonial claim to the entire Sound and that the waters beyond three miles from the mean low water mark were not under state jurisdiction, resulting in a “gap” in state jurisdiction in the center of Nantucket Sound.
- In 1980 the Massachusetts Attorney General and Secretary of Environmental Affairs nominated all of Nantucket Sound as a national marine sanctuary. In the nomination, various state agencies, including the Office of Coastal Zone Management and Division of Marine Fisheries, documented the region’s ecological significance and its importance to such economic uses as fishing and tourism. The 1980 nomination envisioned a joint federal-state management of the sanctuary, similar in concept to the management plans now in place in the Florida Keys and California’s Channel Islands.
- In response to three different oil and gas lease sales on Georges Bank proposed by the federal government in the late 1970’s and early 1980’s, Massachusetts repeatedly asserted its interests and role in decisions being made about the use of ocean resources off its coast.
- In 1983 a scientific panel commissioned by the National Oceanic and Atmospheric Administration included Nantucket Sound and other portions of the outer continental shelf south and east of Nantucket Sound in a short list of areas for future designation as a national marine sanctuary.

These actions were ahead of their time in recognizing the principle of *ecosystem-based management*. Ecosystem-based management of ocean and land resources is now widely accepted as the key to successful resource protection and management. Ecosystem-based management is the cornerstone of three recent major ocean public policy studies released in 2004: the Pew Oceans Commission, the U.S. Commission on Ocean Policy, and the Massachusetts Task Force on Ocean Management. In the words of the U.S. Ocean Commission:

“U.S. ocean and coastal resources should be managed to reflect the relationships among all ecosystem components, including human and nonhuman species and the environments in which they live. Applying this principle will require defining relevant geographic management areas based on ecosystem, rather than political, boundaries.”

In this study, we have taken the principle of ecosystem-based management to the next logical step for Massachusetts by defining the “relevant geographic management areas” to include the state and federal waters south and east of Cape Cod, Martha’s Vineyard, and Nantucket, out to the edge of the continental shelf. We refer to these areas collectively as the **Nantucket Shelf Region**. Our definition is based on the finding that these areas are inextricably linked by large-scale physical, biological, and ecological features and processes and share many important natural and socioeconomic features.

Part I of the report describes the ecological features that characterize this region and identifies issues and data gaps that warrant further scientific investigation to enhance our understanding of the region. Part II describes a number of management tools and techniques that may be useful as part of a comprehensive management scheme. In the following pages, the report describes the need for a common vision for the future of Nantucket Shelf and suggests some of the first steps in a planning process that could achieve and implement that vision.

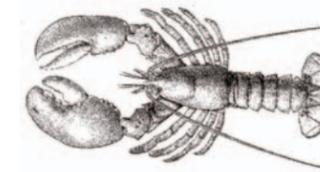
Why Nantucket Shelf Region?

The Nantucket Shelf Region includes Vineyard Sound, Nantucket Sound, Nantucket Shoals, the continental shelf south of Martha’s Vineyard, the Great South Channel, and Georges Bank. Scientific literature indicates that these areas form part of a large, shallow, coastal shelf eco-region that is characterized by a common geological origin, extremely dynamic sedimentary environment, tidally well-mixed water, high biological productivity, and unique ecological features. The Nantucket Shelf Region can be subdivided into three related ecosystems: *marine estuarine* (Nantucket Sound and Vineyard Sound), *offshore shoals* (Nantucket Shoals and Georges Bank), and *mid-shelf environment* (Great South Channel and the shelf area south of Martha’s Vineyard).

The Nantucket Shelf Region serves as a dynamic transition zone between the Gulf of Maine Region to the north, which is influenced by the colder waters of the Labrador Current, and the warmer waters of the Middle Atlantic region and Gulf Stream to the south. This fundamental physical boundary between warm and cold water masses provides the setting for mixing and mingling of northern and southern species at the extreme ends of their geographic ranges, resulting in a zone of high biodiversity.

The Nantucket Shelf Region.





The Nantucket Shelf Region is one of the most heavily used ocean areas in the Northeast due to its bountiful natural resources, proximity to major population centers, and rich fishing grounds. It has a long and rich historic and cultural significance for the citizens of Massachusetts, and has high economic value for all of New England. At the same time, the area is increasingly subject to significant impacts from a myriad of human activities that threaten its quality, productivity and sustainability.

An incomplete patchwork of different federal and state ocean management jurisdictions currently exists in the Nantucket Shelf Region. The jurisdictional patchwork has a number of holes in it, in areas where preliminary (and sometimes old) scientific information suggests that the natural resources must be the same as in nearby protected areas. The absence of a single coordinating framework for ocean protection in the Nantucket Shelf Region has resulted in coastal and ocean protection that is inconsistent, with protection for some resources in one area and no protection for the same resources in an adjacent area.

This report finds that the Nantucket Shelf Region is of such ecological and socioeconomic importance that it should be the first offshore area in Massachusetts to benefit from a comprehensive ocean resources management plan. Comprehensive ocean management and protection is called for by the U.S. Commission on Ocean Policy, the Pew Oceans Commission and the Massachusetts Task Force on Ocean Management.



Development of an Ocean Resources Management Plan

The development of a successful and useful **Ocean Resources Management Plan** will largely depend upon 1) creating an effective planning process and 2) identifying key participants who can bring their knowledge, planning and management abilities to the table. A productive planning process will utilize the best available scientific information, identify and implement suitable tools, provide for the broadest public participation and input, build consensus among participants, and require commitment, cooperation and leadership from all interested parties.

One ocean management tool to consider is the designation of the Nantucket Sound Region as a “marine protected area”, setting the stage for defined uses and activities. In the U.S., a Marine Protected Area (MPA), as defined by Executive Order 13158 (May 26, 2000) is “*any area of the marine environment that has been reserved by federal, state, territorial, tribal or local laws or regulations to provide lasting protection for part or all of the natural and cultural resources therein.*” Many other countries use marine protected areas as an ocean and coastal management tool, and it is particularly suitable where there are many overlapping jurisdictions or where the region is large and encompasses many interests.

Although the term ‘marine protected area’ has only come into general use in the U.S. since Executive Order 13158, the concept includes a variety of areas created under such federal laws as the National Marine Sanctuaries Act, National Wildlife Refuge System Administrative Act, National Park Service Organic Act, and Magnuson-Stevens Fisheries Conservation and Management Act, among others. The public policy goals of each of the programs created by these laws vary, as do the management objectives within specific areas.

A national marine protected area designation could provide a comprehensive and flexible framework for the protection and management of the Nantucket Shelf Region, leading to better coordination and more effective management of its resources.

Another innovative ocean management tool highlighted in all three ocean studies is ocean zoning within the context of a marine protected area. Just as in land zoning, areas of the ocean could be identified for activities most compatible with the natural and socioeconomic values and carrying capacities of that area.

As one example, sustainable fisheries management within the Nantucket Shelf Region is highly desirable. Human uses of the area include recreational and commercial fishing and shellfishing, which are important to the local economy. The Nantucket Shelf Region also provides important nursery and migration habitat for commercially and recreationally important fish species. These socioeconomic and ecological values can both be protected through careful management for sustainable fisheries rather than prohibition. While sustainable fisheries management under the mandate of the Magnuson-Stevens Act is currently the guiding management tool for Georges Bank, only a congressional moratorium prevents exploration for oil and gas. This inconsistency of public policy represents a continuous threat to the fishery.

As a second example, areas used by endangered species for breeding and nesting should be protected as critical habitat areas. In particular, nearly the entire North American population of roseate terns passes through the Cape and Islands region and stops in Monomoy to nest and feed. While Monomoy is managed as a national wildlife refuge and more than 90% of the refuge is protected as a national wilderness area, far less protection applies to nearby state and federal waters. Terns also fly to Buzzards Bay, which is included in EPA’s National Estuary Program. Existing critical habitat areas such as the Great South Channel (protected especially for the right whale) may also be linked ecologically. However, designation of the entire Nantucket Shelf Region as a critical habitat would probably not be warranted.



The Nantucket Shelf Region



Considerably more scientific and socioeconomic research is needed to develop a specific ocean zoning approach. However, an initial zoning concept for the Nantucket Shelf Region, based on available information, might include four zones as follows:

Ocean Zone 1: Including the state and federal waters south of Cape Cod and around the islands of Nantucket and Martha's Vineyard, including Nantucket and Vineyard Sounds and Buzzards Bay. This area is characterized by aesthetic and cultural values, active recreational boating and fishing, marine science and education, increasing coastal development, a coastal economy that is heavily dependent on the natural resources and scenery, and an often-disjointed network of existing coastal protected or managed areas, including the Cape Cod National Seashore, Monomoy National Wildlife Refuge and Wilderness Area, Waquoit Bay National Estuarine Research Reserve, Mashpee National Wildlife Refuge, and the Massachusetts Cape and Islands Ocean Sanctuary.

Ocean Zone 2: Nantucket Shoals and Georges Bank. These two areas share many ecological and socioeconomic features, such as: shallow sandy benthic habitat; high-energy environment; important fisheries habitat; distance from land; ecological transition area between the Great South Channel and the two shoals; moderate recreational use; high cultural value; and a hazard to shipping. Georges Bank is actively managed for fisheries and fishery closures are in effect in some areas. The threat of oil and gas drilling in Georges Bank remains.

Ocean Zone 3: Great South Channel. This area is important for both ecological reasons (feeding ground for endangered right whales and humpback whales, fish, and high productivity) and socioeconomic reasons (commercial shipping). The area contains a federal critical habitat for endangered Northern Atlantic Right Whales, and the fishery is seasonally closed.

Ocean Zone 4: Outer Continental Shelf. This area includes the large area of continental shelf south of Martha's Vineyard, Nantucket Shoals, and the Great South Channel out to the edge of the continental shelf. It is characterized by its open ocean character, highly dynamic water processes, moderate recreational value, fisheries habitat, and low to moderate risk for shipping. Relatively little is known about the ecological values of this area.

A guiding body is needed to conduct the planning process that would result in an Ocean Resources Management Plan for the Nantucket Shelf Region. This report builds on another key recommendation of the U.S. Commission on Ocean Policy by recommending the creation of a **Nantucket Shelf Regional Coordinating Committee**. The Nantucket Shelf Regional Coordinating Committee would be charged with developing a comprehensive plan for the protection, preservation, and sustainable use of the abundant resources of the Nantucket Shelf Marine Protected Area; and furthermore, to create a detailed implementation plan that emphasizes coordination of existing authorities and agencies and provides specific recommendations about additional legislative, regulatory or scientific steps that are required to fully achieve its mandate.

Various models for public process already exist, including those provided by the National Estuary Program, National Estuarine Research Reserves, and National Marine Sanctuaries. Generally, these models call for steering committees comprised of both technical and non-technical components (e.g., scientists, resource managers, coastal decision makers, citizens, businesses, resource users, etc.). The public process involves public meetings of the steering committee, stakeholders, the public, and representatives of relevant agencies.

The Nantucket Shelf Regional Coordinating Committee could be administered jointly by the federal National Oceanic and Atmospheric Administration (NOAA) and the state Executive Office of Environmental Affairs (EOEA). The active participation of the three Regional Planning Agencies (Cape Cod Commission, Martha's Vineyard Commission, Nantucket Planning and Economic Development Commission) would represent local and regional interests and highlight the land-ocean linkages. The Massachusetts Coastal Zone Management Program (CZM) within EOEA and linked closely to NOAA would bring valuable coastal and ocean planning, policy and technical expertise.

Lastly, management of the Nantucket Shelf Marine Protected Area will require both short-term and long-term process studies and long-term monitoring studies of geology, oceanography, biology, ecology, and climate. The creation of a **Nantucket Shelf Ocean Observatory** program is recommended to serve as a regional science and outreach source of information.

A great deal of work has already been completed that supports the ocean vision outlined in this report. The two national ocean commissions and state task force on ocean management have laid the groundwork for a more comprehensive ocean resources management system. The numerous existing but disjointed protected areas within the Nantucket Shelf Region signify the richness and diversity of the ecosystem. The regional planning agencies and state coastal zone management program are familiar with the socioeconomic and environmental interests of the region. However, the lack of a single unifying management and protection framework hampers coordinated management of the region.

The designation of the Nantucket Shelf Region as a marine protected area (MPA) would acknowledge its special environmental and economic values and provide a needed unifying framework; and the creation of a Nantucket Shelf Regional Coordinating Committee charged with the responsibility for developing a comprehensive ocean resources management plan, are the next two logical steps toward realizing a sustainable ecosystem-based vision for the Nantucket Shelf Region.

