Massachusetts Ocean Management Plan September 2014

DRAFT

Volume 1
Management and Administration

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Chapter 1 - Introduction

In December 2009, the Executive Office of Energy and Environmental Affairs (EEA) issued the Commonwealth's first-ever Massachusetts Ocean Management Plan. The release of the plan was the culmination of an intensive planning process launched with the signing of the Oceans Act in May 2008 by Governor Deval Patrick. The Oceans Act (Appendix 1) gave the EEA Secretary formal oversight, coordination, and planning authority for the Commonwealth's ocean waters and ocean-based development. It also required EEA to develop an integrated ocean management plan that: defined the Commonwealth's goals, siting priorities, and standards for ensuring effective stewardship of ocean waters and resources held in trust for the benefit of the public; reflected the importance of these waters to the Commonwealth's citizens who derive livelihoods and recreational benefits from fishing; valued biodiversity and ecosystem health; identified and protected special, sensitive, or unique estuarine and marine life and habitats; and identified appropriate locations and performance standards for activities, uses, and facilities allowed by the Ocean Sanctuaries Act [M.G.L. c. 132A §12-18].

The development of the 2009 Massachusetts Ocean Management Plan, which was led by EEA's Office of Coastal Zone Management (CZM), included rigorous efforts to acquire, develop, and synthesize the best available data and science and to seek a high level of peer review and evaluation of this information. Throughout the process, EEA also carried out an extensive public and stakeholder participation program. These efforts included public listening sessions held across the state to gather initial information; public workshops to discuss the planning approach and solicit feedback on a draft plan; hundreds of meetings with stakeholders such as fishermen, shipping interests, nongovernmental organizations, and academia; and formal public hearings and comment periods. The members of the state's Ocean Advisory Commission and Ocean Science Advisory Council also provided important and valuable advice, guidance, and contributions to the planning process and the final plan. The development of the ocean plan underscored the critical importance and value of marine ecosystems and ocean-based commerce, trade, and economies in Massachusetts and reinforced the Commonwealth's responsibility to manage uses in a manner that preserves and enhances the integrity and sustainability of ocean ecosystems and resources and maintains the benefits held in trust for the public.

The Commonwealth's ocean plan is intended to be an evolving document—revisited and revised periodically to adapt as better information and science are developed, policy goals evolve, and experience in applying the management and administrative framework is gained. Pursuant to the Oceans Act, the implementing regulations of the ocean plan (301 CMR 28.00, Appendix 2) require that the Massachusetts Ocean Management Plan, its Baseline

Assessment, and the enforceable provisions of relevant statutes and regulations be reviewed at least once every five years.

This document—the Draft Massachusetts Ocean Management Plan, September 2014—presents the first formal amendment of the 2009 ocean plan for public review and comment. This chapter provides an overview of the document (hereafter referred to as the 2014 draft ocean plan), describes the plan review and update process, and summarizes the proposed revisions to the 2009 ocean plan. While this chapter generally references the maps in the ocean plan, specific information on management areas and maps is provided in Chapter 2, and the maps themselves are placed at the end of the document for production purposes.

Overview of the Document

The 2014 draft ocean plan presents the amended 2009 ocean plan for public review and comment. The document consists of two volumes:

- **Volume 1: Management and Administration** - Following this introduction, Volume 1 provides the Commonwealth's updated and amended approach for integrated ocean management, identifying and providing accompanying maps for the broad management areas and the special, sensitive, or unique habitat and water-dependent use areas delineated for protection.[1] It also presents the siting and management standards for uses, facilities, and activities subject to the plan. In addition, Volume 1 describes the administration of the ocean plan, including sections on plan implementation and inter-agency coordination, an ocean development mitigation fee, a plan review and performance framework, and continued stakeholder engagement.

- **Volume 2: Baseline Assessment Five-Year Update and Science Framework** - The Oceans Act mandated a Baseline Assessment as part of the ocean plan and required a review and update of this Baseline Assessment at least every five years. The 2009 Baseline Assessment constituted an extensive cataloguing of the current state of knowledge regarding human uses, natural resources, and other ecosystem components of Massachusetts ocean waters. The Baseline Assessment Five-Year Update: Report on Changes and Trends since 2009 is presented in Volume 2 and reports on the current condition, status, and trends in Massachusetts marine waters. Volume 2 also contains the Science Framework, which identifies updated science and data priorities and strategies that will support continued evolution of the Massachusetts Ocean Management Plan.

[1] For production purposes, all figures are placed at the end of the document.

Review of the Ocean Plan

In January 2013, EEA and CZM initiated a formal review and update of the 2009 Massachusetts Ocean Management Plan, beginning with a comprehensive assessment of the progress in meeting the requirements and commitments established by the Oceans Act and the initial ocean plan. The results of this assessment were released in the document, *Review of the Massachusetts Ocean Management Plan, January 2014*, which provides a summary of the background and context for ocean planning in Massachusetts and reports on the plan development process, including the policies and management framework, plan administration and implementation, and work on science and data priorities identified in the 2009 ocean plan's Science Framework. As identified and described in *Review of the Massachusetts Ocean Management Plan, January 2014*, key ocean plan implementation progress includes:

- **Incorporation of the Plan into the Massachusetts Coastal Program** - One of the requirements of the Oceans Act is that "upon adoption, an ocean management plan shall formally be incorporated into the Massachusetts coastal zone management program." After significant consultation with and preliminary review by the National Oceanic and Atmospheric Administration (NOAA), which administers all state coastal management programs, CZM submitted a formal request to NOAA to incorporate the ocean plan and its enforceable policies into the Massachusetts Coastal Management Program (CMP) on August 19, 2011. On September 23, 2011, NOAA approved the change to the Massachusetts CMP.

- **Development of Implementing Regulations** - The Oceans Act specifically requires the EEA Secretary to promulgate regulations to implement and administer the ocean plan. In August 2011, an advisory group consisting of a broad cross-section of stakeholders and interests was convened by EEA to review and provide feedback on drafts of these regulations. Chaired by CZM, the advisory group held seven meetings, and in April 2012, the draft rules were presented to and reviewed by the Ocean Advisory Commission. After formal public comment and public hearings in March and April 2013, the final regulations (contained in 301 CMR 28.00 *et seq*.) were promulgated in August 2013.

- **Review of Projects Subject to the Plan** - Since the release of the 2009 ocean plan, there have been three proposed projects subject to the plan's siting and performance standards: (1) a fiber-optic communications cable from Fairhaven to Tisbury by GPCS Fiber Communications, Inc.; (2) a pilot tidal energy project located in Muskeget Channel by the Town of Edgartown; and (3) a combined fiber-optic communications and electric cable bundle from Falmouth to Tisbury by Comcast and NSTAR. Details on these projects and their review under the ocean plan are provided in the *Review of the Massachusetts Ocean Management Plan, January 2014*. To

date, the Comcast/NSTAR cable project is the only one that has completed review and permitting and been found consistent with the ocean plan (construction was completed in spring 2014, and the project is now operational).

- **Progress on Science Priorities** - The 2009 ocean plan was developed with the best knowledge and data available at the time. Recognizing that many elements of the plan's management framework could be advanced with additional science and data work, EEA defined eight priority science actions that could be achieved in a five-year timeframe. Considerable progress has been made toward implementing these priority actions, including important advancements in marine seafloor and habitat science and characterization; major additions of data and information on human use patterns such as recreational boating activity; and key updates in both functionality and data contents to the publicly accessible online data and mapping system (Massachusetts Ocean Resource Information System, or MORIS).

Review of the Massachusetts Ocean Management Plan, January 2014 also synthesizes the views and opinions of the members of the state's Ocean Advisory Commission and Ocean Science Advisory Council on the ocean planning and implementation process, and summarizes stakeholder and public input received during public meetings and the formal comment period on the review process in June-July 2013. Finally, the review contains several recommendations to guide ongoing implementation of the ocean plan and its update and revision. See www.mass.gov/eea/mop for an online copy of *Review of the Massachusetts Ocean Management Plan, January 2014*.

The Ocean Plan Update Process

In June 2013, EEA developed a scope for the ocean plan update and amendment process. This scope was developed with guidance from the Ocean Advisory Commission and Ocean Science Advisory Council and with input gathered through four public meetings and a formal 60-day comment period. The scope established these goals for the ocean plan update:

- **Identify Trends in the Baseline Assessment** - The 2009 ocean plan's Baseline Assessment was developed to characterize the Massachusetts Ocean Management Planning Area (planning area), with in-depth descriptions and assessments of ecosystem components, human uses, economics, cultural and archeological aspects, and climate change. A key part of the 2014 draft ocean plan is an updated Baseline Assessment that examines and describes important trends that have been measured and/or observed since the 2009 "baseline."

- **Protect Critical Habitat and Water-Dependent Uses** - As directed by the Oceans Act, the 2009 ocean plan identified and established siting and management standards

to protect (1) special, sensitive, or unique (SSU) estuarine and marine life and habitats and (2) concentrations of water-dependent use areas. In the plan update process, the technical and subject matter experts that assisted in the initial work on the ocean plan were reconvened to assist in conducting a thorough review of available data, information, and maps to identify changes to the spatial extent and/or condition of the mapped resources and uses as well as new science or monitoring that advances the characterization of the resources and uses.

- **Advance Planning and Siting for Offshore Renewable Energy Transmission** - The 2009 ocean plan gave special focus to ocean-based renewable energy, allowing for the development of renewable energy facilities "of appropriate scale" and delineating two Wind Energy Areas—constituting 2% percent of the planning area—designated for commercial-scale wind energy facilities. Since the issuance of the ocean plan, significant advancements have been made in the federal process for planning, analyzing, and leasing of potential offshore wind development projects on the outer continental shelf adjacent to Massachusetts state waters. Data, information, and stakeholder engagement processes initiated by the Massachusetts Ocean Management Plan have been leveraged to support the federal process led by the Bureau of Ocean Energy Management (BOEM). BOEM has been working with the Commonwealth and formal inter-governmental task forces, as well as with communities and stakeholders, on the planning and analysis stages of offshore wind development. These efforts have led to the designation of two Wind Energy Areas in federal waters and the issuance of a proposed leasing framework with the potential for several different offshore wind energy projects in these Wind Energy Areas, each with its own requirements for transmission connections. As part of the ocean plan update, efforts were made on the key initial steps in the planning and siting of offshore wind energy transmission routes to bring renewable energy from the projects in federal waters across state waters to landside grid tie-in locations, with the goal of minimizing environmental impacts and conflicts with existing water-dependent uses.

- **Advance Planning and Siting for Offshore Sand for Beach Nourishment** - Areas of many coastal communities are vulnerable to erosion and flooding both now and with accelerated rates of sea-level rise. The potential use of ocean sand resources for beach nourishment is an important and viable option for increasing the beneficial services afforded by healthy beach and dune systems. The 2009 ocean plan recognized the significant sand resources in the planning area, which could support beneficial use in beach nourishment and shoreline protection. However, sand extraction needs to be balanced with the protection of marine ecosystems and existing water-dependent uses. The 2014 draft ocean plan advances the planning for and identification of appropriate locations for offshore sand areas, taking into

account important criteria including compatible sand resources, environmental impacts, and existing water-dependent uses.

- **Develop Structure and Guidance for the Ocean Development Mitigation Fee** - The Oceans Act includes a requirement that any project subject to the ocean plan shall be assessed an Ocean Development Mitigation Fee as established by the EEA Secretary. The 2009 ocean plan provided additional guidance for the fee, and regulations to administer and implement the plan at 301 CMR 28.06 contain a "placeholder" for the development of a fee structure/schedule for ocean development projects. The 2014 draft ocean plan includes a proposed fee structure and accompanying guidance for the determination of mitigation fees for ocean development projects.

A key part of the ocean plan update process was the efforts of six technical work groups that were convened in June 2013 to review scientific data and information and identify and characterize important trends in ocean resources and uses. The work groups addressed the following topic areas: habitat, fisheries, sediment resources, recreational and cultural services, transportation and navigation, and energy and infrastructure. At meetings in the fall and winter of 2013-2014, the Ocean Advisory Commission and Ocean Science Advisory Council reviewed draft reports from each of the six technical work groups and provided comments and advice. In March 2014, CZM held two public workshops to share information and solicit input from stakeholders on the findings and recommendations of the work groups.

Based on the work group technical reports and input from advisory bodies, workshops, and public and stakeholder meetings, efforts over the spring and summer 2014 were focused on the development of the 2014 draft ocean plan. For additional information and details on the ocean planning process and its history in Massachusetts, please see www.mass.gov/eea/mop.

Summary of Revisions to the 2009 Ocean Plan

When promulgated in its final form, the 2014 draft ocean plan will serve as the formal, current version of the state's ocean plan and will supersede the 2009 plan. The proposed substantive changes to the 2009 ocean plan, which are briefly summarized below, are detailed throughout the remainder of this document.

Management Areas

The ocean plan combines elements of both designated area and performance standard based management by establishing three categories of management areas. In the 2009 ocean plan, the vast majority of the planning area was designated as a Multi-Use Area, open to all uses, activities, and facilities as allowed under the Ocean Sanctuaries Act

subject to siting and management standards defined in the ocean plan. A Prohibited Area was also established, coincident with the Cape Cod Ocean Sanctuary, where under the Ocean Sanctuaries Act certain uses, activities, and facilities are prohibited (e.g., activities and facilities associated with the generation, transmission, and distribution of electric power). Finally, the ocean plan identified several Renewable Energy Areas, including two designated Wind Energy Areas. The Gosnold Wind Energy Area and the Martha's Vineyard Wind Energy Area, which constitute two percent of the planning area, were designated as the only locations in the planning area suitable for commercial-scale wind energy facilities, with the condition that the Martha's Vineyard Commission has the legal authority to define the appropriate scale of any wind energy project located within the Martha's Vineyard Wind Energy Area. The 2009 ocean plan also identified three other locations for commercial-scale wind that were designated as "provisional sites" because while they passed the initial screening process for the ocean plan, they were found to have technical limitations and potentially significant cumulative impacts. The 2009 ocean plan therefore declared that these provisional sites were not being proposed for designation as Wind Energy Areas and were not being explored for further feasibility by the Commonwealth, but it did not preclude potential project proponents from developing additional information and analysis for them. The 2009 plan went on to state that any such assessments would be subject to review by EEA, and any designation of the provisional sites as Wind Energy Areas would require a formal amendment to the ocean plan.

As described in Chapter 2 of this document, given the focus and progress on advancing offshore renewable wind energy in federal waters and considering some of the limitations and current status of development interest in state waters, the provisional commercial-scale wind areas have been removed from the 2014 draft ocean plan's Management Areas map.

Protected Resources and Uses

The performance-based approach in the 2009 ocean plan identifies and maps specific "special, sensitive or unique" (or SSU) estuarine and marine life and habitats and areas of marine water-dependent uses. It also protects these high value resources and water-dependent uses through siting and performance standards that direct specific development activities away from these areas.

For the 2009 ocean plan, the identification and mapping of SSU resource areas and concentrations of water-dependent use areas were informed by the efforts of six technical work groups, comprised of scientists and technical or subject matter experts from state and federal agencies, academia, non-profits, and the private sector. In June 2013, the technical work groups were re-convened to review the best available scientific

data and information and to identify and characterize important trends in ocean resources and uses. Nearly 100 subject-matter experts made up the six technical work groups, which addressed the following issue areas: habitat, fisheries, sediment resources, recreational and cultural services, transportation and navigation, and energy and infrastructure. Based on the recommendations of the technical work groups, changes are being proposed for six of the twelve spatial area maps of SSU resources identified and mapped in the 2009 ocean plan, and a new, modified SSU resource is being proposed for regionally critical sea duck habitat (see Table 1-1 below). This new SSU area, collectively referred to as the Sea Duck Core Habitat, includes regionally critical habitat area for the White-winged Scoter, the Black Scoter, the Surf Scoter, and the Common Eider, along with revisions to the Long-tailed Duck important habitat areas from the 2009 plan. In addition, based on the recommendations of the technical work groups, changes are being proposed for the spatial area maps for all five of the areas of concentrations of water-dependent uses identified and mapped in the 2009 ocean plan (see Tables 1-1 and 1-2 below).

Table 1-1. Changes to mapped areas of special, sensitive, or unique resources

SSU Resource	Mapped area change?
North Atlantic Right Whale Core Habitat	Yes
Humpback Whale Core Habitat	Yes
Fin Whale Core Habitat	Yes
Roseate Tern Core Habitat	No
Special Concern (Arctic, Least, and Common) Tern Core Habitat	No
Sea Duck Core Habitat (formerly mapped as Long-tailed Duck Core Habitat in 2009 ocean plan)	Yes (new SSU resource proposed)
Leach's Storm-Petrel Important Nesting Habitat	No
Colonial Waterbirds Important Nesting Habitat	No
Hard/Complex Seafloor	Yes
Eelgrass	Yes
Intertidal Flats	Yes
Important Fish Resources	No

Table 1-2. Changes to mapped areas of concentrations of water-dependent use areas

Concentrations of Water-Dependent Use	Mapped area change?
High Commercial Fishing Effort and Value	Yes
Concentrated Recreational Fishing	Yes
Concentrated Commerce Traffic	Yes

Concentrations of Water-Dependent Use	Mapped area change?
Concentrated Commercial Fishing Traffic	Yes
Concentrated Recreational Boating Activity	Yes

Management of Uses

The 2009 ocean plan contains background information and describes specific management standards and measures for uses, activities, and facilities allowed under the Ocean Sanctuaries Act, as amended by the Oceans Act, including: renewable energy, sand borrow sites for beach nourishment and shore protection, cables and pipelines, fishing, and aquaculture.

The management of uses section in Chapter 2 of this document has been updated and modified to reflect new information and the advancement of pro-active planning and siting for future projects. The changes are summarized below and described more fully in Chapter 2.

- **Renewable Energy, Wind** - Since 2009, there have been some important trends in offshore renewable wind energy, including significant progress in the planning, analysis, and leasing stages of offshore wind development in federal waters adjacent to Massachusetts. On June 17, 2014, the Department of the Interior, BOEM, and the Commonwealth of Massachusetts jointly announced the publication of the Proposed Sale Notice for Commercial Leasing for Wind Power on the Outer Continental Shelf Offshore Massachusetts, detailing a proposed auction format, the four lease areas available, proposed lease provisions and conditions, and criteria for evaluating competing bids. The federal lease sale is expected in December 2014. There have also been important advances on the Cape Wind project and the South Coast Marine Commerce Terminal—the first facility in the nation specifically designed to support the construction, assembly, and deployment of offshore wind projects. As described below, with the progress of in the planning, analysis, and anticipated leasing of offshore wind energy areas for potential development in federal waters, an important part of the 2014 draft ocean plan is work to advance the pro-active planning and siting of transmission corridors to bring renewable energy from the projects in federal waters across state waters to landside grid tie-in locations.

- **Renewable Energy, Tidal** - The 2009 ocean plan identified four tidal projects in Massachusetts state waters that had applied for preliminary permits under the Federal Energy Regulatory Commission (FERC) hydrokinetic licensing process. As of September 2014, only one project—the Muskeget Channel Tidal Energy Project—has met the FERC-specified schedule of activities, target dates, and

reporting on the status of studies and is now in pre-filing license status for a pilot project with FERC. During initial Massachusetts Environmental Policy Act (MEPA) review, the preparation of a Draft Environmental Impact Report (DEIR) was required and a scope for the DEIR was provided. Since the issuance of the Secretary's MEPA Certificate, the proponent has been conducting pre-deployment monitoring and preparing the DEIR. The 2014 draft ocean plan supports continued work on the planning and analysis of the pilot-scale tidal energy project.

- **Sand for Beach Nourishment and Shore Protection** - The 2009 ocean plan recognized the significant sand resources in the planning area, which could support beneficial use in beach nourishment and shoreline protection. The plan also affirmed that areas of many coastal communities are vulnerable to erosion and flooding, both now and with accelerated rates of sea-level rise. The potential use of ocean sand resources for beach nourishment is an important option for increasing the beneficial services afforded by healthy beach and dune systems, but such an approach needs to be balanced with the protection of marine ecosystems and existing water-dependent uses. Since 2009, there have been significant efforts and progress related to coastal shoreline and floodplain management and climate change adaptation, including the formation of the state's Coastal Erosion Commission, release of the Massachusetts Climate Change Adaptation Report, Governor Patrick's Climate Preparedness Initiative, and technical and financial assistance to coastal communities through CZM's StormSmart Coasts program. The ocean plan amendment process is being conducted in coordination with the ongoing work of the Coastal Erosion Commission, which includes efforts to classify the shoreline and assess erosion and shoreline change. The 2014 draft ocean plan advances the siting of potential areas of sand resources for beach nourishment by integrating spatial data and information on ocean sediments with maps of SSU resources areas and other exclusionary criteria. It proposes an approach to conduct further site characterization, investigation, and assessment work in identified preliminary areas with a goal of advancing a few pilot projects for demonstration and evaluation. The 2014 draft ocean plan also establishes specific management standards and conditions for proposed offshore sand pilot projects for beach nourishment, and other elements of siting and planning for use of ocean sand.

- **Cables and Pipelines** - The 2009 ocean plan described the importance of marine cables and pipelines for the transmission and distribution of electricity, fuels, and telecommunications, and the connection of these particular goods and services to national energy, security, and communication matters. Changes since 2009 include a five-year temporary suspension of operations at the Neptune

Deepwater Liquefied Natural Gas (LNG) Port as approved by the U.S. Department of Transportation's Maritime Administration, and the permitting and installation of the Comcast/NSTAR bundled submarine fiber-optic communications and electric cable between Falmouth and Tisbury. As the 2009 ocean plan indicated, a key issue for cables is the future development of offshore wind energy facilities that will require transmission connections to the Massachusetts coast. To help address this issue, the Massachusetts Clean Energy Center (MassCEC) commissioned a study that detailed important information on the key elements of transmission configurations, scenarios, land-side tie-ins, sub-station and cabling requirements, and construction considerations. In the 2014 draft ocean plan, information from the transmission study was integrated with spatial information on SSU resources, surficial sediment maps, and certain navigational and other sites to avoid (i.e., Nomans Danger Zone, existing cable areas, and Cape Wind area) for the preliminary identification of transmission corridor routes within the ocean planning area from the federal lease areas to shore. The 2014 draft ocean plan also proposes an approach to conduct further survey, characterization, and assessment work of the identified preliminary routing areas with the goal of delineating corridors that meet the standards of the plan.

Ocean Development Mitigation Fee

Language in Chapter 3 (Plan Administration) of the 2009 ocean plan describes the Oceans Act requirement that projects subject to the plan shall be assessed an Ocean Development Mitigation Fee, as established by the EEA Secretary. Promulgated in August 2013, the implementing regulations for the ocean plan at 301 CMR 21.06 call for the EEA Secretary to develop a fee "schedule" that reflects differences in terms of the scale and effects of ocean development projects. As part of the ocean plan amendment process, EEA consulted with an advisory working group with representatives from the regulated community (energy, consultants), commercial fishing, environmental interests, and EEA agencies in the development of the proposed fee schedule. Chapter 3 and Appendix 6 of the 2014 draft ocean plan contain the tiered fee schedule and provisions for the determination and administration of the fee.

Baseline Assessment

A key component of the 2009 ocean plan is the Baseline Assessment, which was developed to characterize the ocean planning area, with in-depth descriptions and assessments of ecosystem components, human uses, economics, cultural and archeological aspects, and climate change. The Oceans Act requires the review and update of the Baseline Assessment at least every five years. Based on information and

findings from the six technical work groups, and working with the Ocean Science Advisory Council, the Baseline Assessment Five-Year Update: Report on Changes and Trends from 2009 was developed. The document is contained in Volume 2 of the 2014 draft ocean plan and accounts for and describes significant and/or otherwise notable changes, qualitative and quantitative trends, and new data sources that have been measured, observed, or identified since the 2009 "baseline." For consistency and to aid in cross-referencing, the chapter titles and subchapters in the update mirror those in the 2009 Baseline Assessment. The seven chapters in the Baseline Assessment update are: Water Column Features, Seabed Features, Habitat, Archeological Landscape and Cultural Heritage, Human Uses, Economic Impact of the Marine Sector, and Climate Change.

Science Framework

Recognizing that the understanding of ocean ecosystems and the human services they support will evolve and that the management framework of the ocean plan could be advanced with additional science and data work, the 2009 ocean plan identified eight top-priority science and data actions that could be achieved in a five-year timeframe. Since then, considerable progress has been made in implementing these priority actions, including important advancements in marine seafloor and habitat science and characterization; major additions of data and information on human use patterns such as recreational boating activity; and key updates in both functionality and data contents to the publicly accessible online data and mapping system (Massachusetts Ocean Resource Information System, or MORIS). The 2014 draft ocean plan contains an updated Science Framework, with both short- and long-term priorities, which was developed with recommendations from the technical work groups and with input from the Ocean Science Advisory Council. These priorities help to define a preferred agenda for future work to advance the data and information that form the foundation of the ocean plan.

Northeast Regional Ocean Planning

The 2009 ocean plan describes the importance of coordination and cooperative partnerships with various entities, especially regional planning agencies, federal agencies, the Northeast Regional Ocean Council, and other institutions and agencies involved in ocean management, science, and stewardship. One of the most significant developments since the 2009 plan was released was the issuance of a Presidential Executive Order (#13547) in July 2010 that established the *National Policy for Stewardship of the Ocean, our Coasts, and the Great Lakes* to enhance ocean and coastal management efforts. The policy called for the formation of formal regional ocean planning bodies to implement a ocean planning process that will analyze current and anticipated uses of coastal and ocean resources. The Northeast Regional Planning Body (Northeast RPB) was formally

convened in November 2012 and includes representatives from the six New England states, 10 federal agencies, 10 federally recognized tribes, and the New England Fishery Management Council. The Northeast RPB is not a regulatory body and has no authority to create new regulations. Rather, its mandate is to develop a regional ocean plan and associated products to guide future agency decision-making, consistent with existing authorities. Through meetings in November 2012, April 2013, and January 2014, the Northeast RPB worked to develop a framework that identified the goals, objectives, actions, and products to build a regional ocean plan by early 2016. Work is underway on a number of projects designed to support the planning effort by compiling detailed information on human activities in ocean areas, such as commercial fishing, shipping, and boating, as well as information on ocean ecosystems, such as areas used by marine mammals, fish, and birds. The projects are collaborative efforts that include scientists, fishermen, boaters, and environmental groups, as well as leaders in the shipping, aquaculture, and energy industries.

The Massachusetts ocean planning process has provided the Commonwealth with unique insight and understanding and enables the state to play an important role on the Northeast RPB. The Northeast regional ocean planning initiative has and will continue to benefit the Commonwealth by expanding the scope and extent of data and information available on marine resources and uses and by utilizing and building on stakeholder engagement efforts. Through its role on the Northeast RPB, Massachusetts will seek to ensure that the content of the regional ocean plan and its products are consistent with and can be integrated into the state's ocean plan, to the maximum extent practicable.

Chapter 2 - Management

The 2009 Massachusetts Ocean Management Plan established a management framework to address the goals of the Oceans Act and improve stewardship and management of the ocean environment and resources in and beyond Massachusetts marine waters. In the development of the 2009 ocean plan, several management options and alternatives were considered, and the management approach ultimately adopted combines elements of both designated area and performance standards-based management. This approach uses existing regulatory frameworks and maximizes integration and coordination among agencies, with robust protections for important marine life and habitat and strong support for maritime water-dependent activities. This document—the Draft Massachusetts Ocean Management Plan, September 2014—presents the first formal amendment of the 2009 ocean plan for public review and comment. Hereafter referred to as the 2014 draft ocean plan, this document advances and builds on the management approach of the 2009 ocean plan.

This chapter describes the management areas established by the ocean plan, and then goes on to provide more specific contextual information and details on the plan's siting and management standards for a set of allowed activities pursuant to the Ocean Sanctuaries Act, including renewable energy, offshore sand for beach nourishment, cables, pipelines, and aquaculture. The management approach and requirements established in the 2009 ocean plan are summarized and any revisions are specifically discussed.

Management Areas

As defined by the Oceans Act, the Massachusetts Ocean Management Planning Area (planning area) is the water and submerged lands of the ocean, including the seabed and the soil, lying between a line designated as the "Nearshore Boundary of the Ocean Management Planning Area" and the seaward boundary of the Commonwealth (Figure 1).[1] Within the planning area, the 2009 ocean plan established three categories of management areas: Prohibited, Renewable Energy, and Multi-use (Figure 2). These management areas are defined below and revisions made to the 2009 ocean plan are described.

Prohibited Area

The 2009 ocean plan designated a Prohibited Area, which is coincident with the Cape Cod Ocean Sanctuary. Within the Prohibited Area, a variety of uses, activities, and facilities (e.g., activities and facilities associated with the generation, transmission, and distribution of electric power) are expressly prohibited by the Ocean Sanctuaries Act, as amended by the Oceans Act, and are therefore prohibited under the ocean

[1] For production purposes, all figures are placed at the end of the document.

plan. No revisions have been proposed to the Prohibited Area in the 2014 draft ocean plan.

Wind Energy Areas

The 2009 ocean plan designates two Wind Energy Areas that are presumptively suitable for commercial-scale or community-scale wind energy projects. These areas are the Gosnold Wind Energy Area and the Martha's Vineyard Wind Energy Area, which collectively constitute two percent of the planning area's 2,145 square miles. These Wind Energy Areas were designated based on the presence of a suitable wind resource, suitable water depth, and the absence of conflict with other uses or sensitive resources, as derived through an environmental analysis and screening process. Projects proposed in these areas must meet the management standards and conditions described in the Management of Uses in the Ocean Planning Area section below, including the appropriate scale factors. These proposed projects are also subject to review under the Massachusetts Environmental Policy Act (MEPA) and all other necessary state, federal, local, and, where applicable, regional approvals, which may identify other siting constraints that would affect the scale and build-out of projects within these designated areas.

The 2009 ocean plan identified three locations (including one in federal waters adjacent to the planning area) for commercial-scale wind that were designated as "provisional sites" (Figure 2). While located outside of exclusionary areas applied in the environmental analysis and screening process, these provisional sites were not designated as Wind Energy Areas and were not proposed for further feasibility analysis by the Commonwealth because of concerns for technical limitations, potential cumulative impacts, and wind energy suitability. The 2009 ocean plan stated that potential project proponents are not precluded from developing additional information and analysis for these provisional sites, but affirmed that any such assessment would be subject to review by the Executive Office of Energy and Environmental Affairs (EEA). In addition, the designation of any or all of the provisional sites as Wind Energy Areas could only occur through an amendment to the ocean plan. As described in the Renewable Energy section below, given the focus and significant progress on advancing offshore renewable wind energy in federal waters, and considering some of the limitations and current status of development interest in state waters, the provisional areas have been removed in the 2014 draft ocean plan (Figure 3). Potential project proponents are still eligible to explore wind energy projects in the Multi-use Area, but as before, the designation of sites in the planning area as Wind Energy Areas for commercial-scale may only occur through an amendment to the ocean plan.

The 2009 ocean plan also recognized that there were potentially suitable locations in federal waters for commercial-scale wind, both adjacent to the state Wind Energy Areas and farther offshore. It discussed the formation and initial convening of a federal-state task force to begin the early planning and analysis stages associated with leasing areas of federal waters for potential commercial wind energy development. As summarized in more detail in the Renewable Energy section below, significant effort and progress have been made since 2009 in the planning and analysis for potential offshore wind projects in federal waters, leading to the formal designation of two separate but adjacent zones: (1) the Massachusetts Wind Energy Area and (2) the Rhode Island/Massachusetts Wind Energy Area (Figure 4). For the 2014 draft ocean plan, the maps from the 2009 ocean plan have been updated to more accurately reflect the status of planning in federal waters offshore the Commonwealth (Figure 4).

Multi-Use Area

The 2009 ocean plan designates the remainder—and the vast majority—of the planning area as a Multi-use Area (Figure 2), which is open to all uses, activities, and facilities allowed under the Ocean Sanctuaries Act, including but not limited to:

- Community-scale wind energy facilities
- Wave and tidal energy facilities
- Offshore sand for beach nourishment
- Cables and pipelines
- Aquaculture

Under the ocean plan, management of allowed uses, activities, and facilities in the Multi-use Area is based on an approach that directs new development away from both critical marine ecosystem components—special, sensitive, or unique (SSU) resources—and areas important for water-dependent uses that were identified and mapped in the planning process. As described further in this section and in the Management of Uses in the Ocean Planning Area section, these SSU resources and concentrations of water-dependent use areas serve as the basis for the siting and performance standards-based management approach of the ocean plan.

- **Protected Ocean Resources and Uses** - As directed by the Oceans Act, the 2009 ocean plan identified and established siting and management standards to protect (1) special, sensitive, or unique estuarine and marine life and habitats and (2) concentrations of water-dependent use areas. The effort to locate, develop, compile, and synthesize the data and information to generate the maps was a major undertaking and was guided and informed by the efforts of six technical work groups, comprised of scientists and technical or

subject matter experts from state and federal agencies, academia, non-profits, and the private sector. As part of the ocean plan update process, these work groups were reconvened to review the best available scientific data and information and to identify and characterize important trends in ocean resources and uses. Based on the recommendations of the technical work groups, the 2014 draft ocean plan proposes changes for six of the twelve spatial area maps for SSU resources and for all five of the concentrations of water-dependent use areas. These changes are indicated and summarized in Tables 2-1 and 2-2 and shown on Figures 5-21.

Table 2-1. List of special, sensitive, or unique resources and summary of changes proposed in the 2014 draft ocean plan[2]

SSU Resource	Mapped area change?	Summary of change
North Atlantic Right Whale Core Habitat (Figure 5)	Yes	North Atlantic right whale core habitat was mapped for the 2014 draft ocean plan using more recent effort-corrected sightings data from 1998-2014 (data from 1970-2005 were used to delineate the SSU resource in the 2009 ocean plan). The 2014 SSU resource expanded to include more area in western Cape Cod Bay and off the Outer Cape than in the 2009 ocean plan.
Humpback Whale Core Habitat (Figure 6)	Yes	Humpback whale core habitat was updated using newer effort-corrected sightings data from 1998-2014 (in the 2009 ocean plan, data from 1970-2005 were used to map the SSU resource). The changes in the SSU resource area were minor—the 2014 humpback whale core habitat increased a small amount in Massachusetts Bay, northern Cape Cod Bay, and off the Outer Cape.
Fin Whale Core Habitat (Figure 7)	Yes	Fin whale core habitat was mapped using newer effort-corrected sightings data from 1998-2014 (in the 2009 ocean plan, data from 1970-2005 were used to map the SSU resource). The changes in the SSU resource area were minor—the 2014 fin whale core habitat expanded slightly in eastern Cape Cod Bay.
Roseate Tern Core Habitat (Figure 8)	No	Roseate Tern core habitat was not updated because no new and/or higher quality data were identified. In the 2009 ocean plan, all SSU resources were gridded onto a 250 x 250-meter grid to allow for a consistent comparison of a variety of datasets. For the 2014 draft ocean plan, SSU resources were mapped in their native format, so the Roseate Tern core habitat was not gridded.

[2] For production purposes, all figures are placed at the end of the document.

SSU Resource	Mapped area change?	Summary of change
Special Concern (Arctic, Least, and Common) Tern Core Habitat (Figure 9)	No	Special concern (Arctic, Least, and Common) tern core habitat was not updated because no new and/or higher quality data were identified. In the 2009 ocean plan, all SSU resources were gridded onto a 250 x 250-meter grid to allow for a consistent comparison of a variety of datasets. For the 2014 draft ocean plan, SSU resources were mapped in their native format, so the special concern tern core habitat was not gridded.
Sea Duck Core Habitat (formerly mapped as Long-tailed Duck Core Habitat in 2009 ocean plan) (Figure 10)	Yes	Long-tailed Duck core habitat mapped in the 2009 ocean plan was expanded for the 2014 draft ocean plan to map regionally critical habitat for five sea duck species. This modified SSU resource area, collectively referred to as sea duck core habitat, includes regionally important habitat for Long-tailed Duck, Common Eider, Black Scoter, Surf Scoter, and White-winged Scoter. Sea duck core habitat was mapped using effort-corrected sightings data from 2008-2012 and Long-tailed Duck telemetry data from 2008-2009. The 2014 SSU resource area increased to include portions of Nantucket and Vineyard Sounds and Muskeget Channel.
Leach's Storm-Petrel Important Nesting Habitat (Figure 11)	No	Leach's Storm-Petrel important nesting habitat was not updated because no new and/or higher quality data were identified. In the 2009 ocean plan, all SSU resources were gridded onto a 250 x 250-meter grid to allow for a consistent comparison of a variety of datasets. For the 2014 draft ocean plan, SSU resources were mapped in their native format, so the Leach's Storm-Petrel important nesting habitat was not gridded.
Colonial Waterbirds Important Nesting Habitat (Figure 12)	No	Colonial waterbirds important nesting habitat was not updated because no new and/or higher quality data were identified. In the 2009 ocean plan, all SSU resources were gridded onto a 250 x 250-meter grid to allow for a consistent comparison of a variety of datasets. For the 2014 draft ocean plan, SSU resources were mapped in their native format, so the colonial waterbirds important nesting habitat was not gridded.

SSU Resource	Mapped area change?	Summary of change
Hard/Complex Seafloor (Figure 13)	Yes	Hard/complex seafloor is seabed characterized singly or by any combination of hard seafloor, complex seafloor, artificial reefs, biogenic reefs, or wrecks and obstructions. For the 2014 draft ocean plan, hard/complex seafloor was mapped using updated surficial seafloor sediment data and the same complex seafloor data used in the 2009 ocean plan. The locations of artificial reefs, biogenic reefs, and wrecks and obstructions were added to the 2014 SSU resource area. The changes in hard/complex seafloor were minor—the 2014 area expanded at the mouth of Vineyard Sound and decreased east of Nantucket.
Eelgrass (Figure 14)	Yes	Eelgrass was updated by incorporating new data on the locations of eelgrass beds from 2006/2007, 2010, 2012, and 2013 in addition to the data from 1995 and 2001 used in the 2009 ocean plan. The changes between the mapped 2009 and 2014 SSU resource areas were minor.
Intertidal Flats (Figure 15)	Yes	Intertidal flats were mapped using updated data on the locations of intertidal flats from 2005-2010 (data from 2005 were used in the 2009 ocean plan). The changes between the mapped 2009 and 2014 SSU resource areas were minor.
Important Fish Resources (Figure 16)	No	Important fish resources were updated using trawl survey data from 1978-2012 (trawl surveys from 1978-2007 were analyzed in the 2009 ocean plan). The mapped 2014 SSU resource area did not change from 2009.

Table 2-2. List of concentrations of water-dependent use areas and summary of changes proposed in 2014 draft ocean plan

Concentrations of Water-Dependent Use	Mapped area change?	Summary of change
High Commercial Fishing Effort and Value (Figure 17)	Yes	High commercial fishing effort and value was updated using data from state trip-level and catch reports, federal vessel trip reports, and dealer transaction reports from 1988-2012 (reports from 1988-2007 were used in the 2009 ocean plan). The 2014 concentration of water-dependent use area shifted to include more area off the Outer Cape, south of the Cape in Nantucket Sound, and east of Nantucket, and less area in Vineyard Sound and Buzzards Bay.

Concentrations of Water-Dependent Use	Mapped area change?	Summary of change
Concentrated Recreational Fishing (Figure 18)	Yes	Concentrated recreational fishing was updated using information from a 2013 survey of experienced recreational fishermen (this was a repeat of the survey conducted for the 2009 ocean plan, except more people were invited to the 2013 survey). The changes in the mapped area were minor—the 2014 area shifted to include slightly less area in Massachusetts Bay and additional area in Buzzards Bay.
Concentrated Commerce Traffic (Figure 19)	Yes	Concentrated commerce traffic was mapped using newer Automatic Identification System (AIS) data from 2011-2012 (AIS data from 2008 were used in the 2009 ocean plan). The 2014 concentrations of water-dependent use area expanded slightly to incorporate additional areas south of Gloucester and in Buzzards Bay and new areas in Vineyard Sound and Nantucket Sound. An area mapped in 2009 in Cape Cod Bay between the Cape Cod Canal and federal waters was removed.
Concentrated Commercial Fishing Traffic (Figure 20)	Yes	Concentrated commercial fishing traffic was updated using additional years of Vessel Monitoring System (VMS) data from 2006-2010 (the 2009 concentrations of water-dependent use area was mapped using VMS data from September 2007 through August 2008). The changes in the 2014 mapped area from the 2009 ocean plan were minor.
Concentrated Recreational Boating (Figure 21)	Yes	Concentrated recreational boating was mapped using new data collected from two surveys of recreational boaters conducted in 2010 and 2012 and from a 2013 rapid assessment survey of expert recreational boaters (data from a 2009 rapid assessment survey of experts were used for the 2009 ocean plan). The updated concentrations of water-dependent use area shifted to include more area off of the North Shore, in Massachusetts Bay, and in Buzzards Bay, and less area in Cape Cod Bay, off the Outer Cape, and in eastern Nantucket Sound.

- **Siting and Performance Standards** - Within the planning area, siting and performance standards apply to projects that are required to file an Environmental Impact Report (EIR) under MEPA. Under MEPA, projects that exceed specified thresholds are presumed to have more potential for significant impacts and require a mandatory EIR. Projects that exceed MEPA Environmental Notification Form (ENF) thresholds are required to document any potential impacts to SSU resources and/or concentrations of water-dependent use areas to allow agencies and the public to inform the EEA

Secretary whether additional review in a discretionary EIR is warranted.

Because allowed activities have different potential effects and impacts on the SSU resource and concentrations of water-dependent use areas, the protected resources and uses that must be addressed vary according to the type of project. The specific SSU resource and concentrations of water-dependent use areas that must be addressed for each allowed activity are detailed in the Management of Uses in the Ocean Planning Area section below. In addition to siting standards, the ocean plan defines performance standards to ensure that all practicable measures to avoid, minimize, and mitigate impacts are applied to ocean projects and that public benefits outweigh detriments.

The siting and performance standards of the 2009 ocean plan were codified in regulations at 301 CMR 28.00 et seq. and are described below. These standards apply to those activities, uses, or facilities allowed under the Ocean Sanctuaries Act (collectively, "activities") that are required to file an EIR pursuant to MEPA:

- Activities proposed in the planning area are presumptively excluded from specific SSU resource areas listed in the Management of Uses in the Ocean Planning Area section below. The SSU maps in the ocean plan represent the best available information regarding the spatial extent of SSU resources at the time of publication. Pursuant to an EIR scope issued by the Secretary, the development of project-specific information may require additional site characterization work to confirm the presence/absence of an SSU resource.
- This presumption may be overcome by the demonstration that:
    1. The maps delineating the SSU resource do not accurately characterize the resource based on substantial site-specific information collected in accordance with data standards and processes described in the Management of Uses in the Ocean Planning Area section below; or
    2. No less environmentally damaging practicable alternative exists. For the purposes of this standard, an alternative is practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics with respect to the purpose of the activity; and,
    3. The project proponent has taken all practicable measures to avoid damage to SSU resources, and the activity will cause no significant alteration to SSU resources. Demonstration of compliance with this standard may include the incorporation of measures to avoid resources and impacts to resources

through time of year (TOY) controls such that the construction, operation, or removal of the project will not occur when the SSU resource is present or may be adversely affected; and,

4. The public benefits associated with the proposed activity outweigh the public detriments to the SSU resource.

- To the maximum extent practicable, project proponents must avoid, minimize, and mitigate impacts to concentrations of water-dependent use areas listed in the Management of Uses in the Ocean Planning Area section below.
- As part of the MEPA review process, the Secretary shall use maps and information from the ocean plan to inform scoping for impact and/or alternatives analysis and may require additional project-specific characterization of existing uses and potential impacts as deemed appropriate.
- The following data standards apply to project proponents that seek to demonstrate that the maps contained in the ocean plan do not accurately characterize the protected resource or use:
    1. Consultation with the Secretary, the Office of Coastal Zone Management (CZM), and other agencies with expertise, management responsibilities, and/or regulatory authority is advised in order to obtain their review of any proposed effort to map or otherwise characterize protected resources or uses.
    2. Information presented must be based on site-specific investigation or characterization that conforms with contemporary and accepted standards.

Importantly, the SSU resources and concentrations of water-dependent use areas identified, mapped, and protected in the ocean plan are not intended to represent the exclusive subject matter of MEPA review and agency permitting action. Rather, based on the direction of the Oceans Act, they have been identified as critically important ocean resources and uses that warrant particular attention through the regulatory review process. The ocean plan does not supersede any existing laws, including those that require the assessment of potential impacts to resources and uses not listed above. The EEA Secretary retains discretion under the MEPA statute and regulations to scope a project for any issue deemed necessary and appropriate, based on information presented by the project proponent and agency or public comment.

Overall, management in the Multi-use Area represents an effort to balance the protection of significant existing uses and important environmental

resources with the flexibility needed to allow the development of necessary infrastructure, sustainable uses, and new activities and technologies, in the context of the public trust and within limitations of existing data. As discussed in the Science Framework (provided in Volume 2 of the ocean plan), ongoing analysis of existing data, future data development, and increased understanding of the marine environment and patterns of human uses will continue to result in refined ocean plan maps. This continual, adaptive approach to management ensures the best, most current information is available to support informed decision-making and improved ocean stewardship.

Management of Uses in the Ocean Planning Area

This section provides important context, further details the siting and performance standards described in the Management Areas sections above, and specifies additional management standards and other conditions for uses, activities, and facilities allowed under the Ocean Sanctuaries Act, as amended by the Oceans Act. Revisions to the management standards in the 2009 ocean plan are also described. It covers these activities: renewable energy; offshore sand for beach nourishment; cables and pipelines; aquaculture; and other uses, activities, and facilities allowed under the Ocean Sanctuaries Act and fail-safe review.

Renewable Energy

The 2008 Oceans Act amended the Ocean Sanctuaries Act to modify a long-standing prohibition on electric generating facilities to allow the development of renewable energy facilities of appropriate scale as defined by and consistent with the ocean plan. With this amendment, the Oceans Act recognized the importance of providing an opportunity to achieve significant social benefits from the development of renewable energy in balance with other social values.

Also in 2008, two other landmark laws were enacted in the Commonwealth: (1) the Green Communities Act, which mandates that 15% of the Massachusetts electric load must be served by renewable energy by 2020, and (2) the Global Warming Solutions Act, which requires steep, economy-wide reductions in greenhouse gas emissions.

To meet these goals, the Patrick Administration and the state legislature have developed and implemented numerous strategies and incentives to spur the growth of renewable energy and clean energy technology and to advance other complementary efforts to reduce greenhouse gases, including major progress in energy efficiency improvements and the expansion of programs that support solar energy development.

As an important component of meeting these mandates, the Patrick Administration has called for 2,000 megawatts (MW) of offshore wind power by 2020.

Since 2009, significant changes have occurred in Massachusetts renewable energy generation. Considering only solar and wind, major increases in the amount of installed renewable energy have been realized. In 2009, the total installed solar capacity was 18.5 MW, and as of August 2014, the total capacity was 615 MW. In May 2013, the Patrick Administration met its 2017 goal to have 250 MW of solar power installed in Massachusetts and announced a new goal of 1,600 MW of solar energy by 2020. In terms of wind energy generation, in 2009 the total installed wind capacity was 14 MW, and as of August 2014, the total capacity was 103 MW.

Updates and changes to the renewable energy information provided in the 2009 ocean plan are summarized in the following bullets.

- **Offshore Wind Energy** - As referenced above, the state has set a goal of developing 2,000 MW of wind-power capacity by the year 2020. Offshore wind resources can provide considerable emission-free renewable energy, and when developed with care and forethought, are compatible with other ocean uses and resource protection. Offshore wind is a potentially inexhaustible resource that is available in close proximity to areas with very high electricity demands, minimizing the need for costly new transmission lines.

  While there have been no projects proposed in the state-designated Wind Energy Areas since 2009, there has been significant progress in the planning and analysis for potential commercial wind leasing in two areas offshore in federal waters south of Martha's Vineyard and Nantucket and east of Block Island. Massachusetts has been working closely with the Bureau of Ocean Energy Management (BOEM) and two intergovernmental task forces—comprised of federal, state, tribal, and local elected officials—on the first phases of the federal Offshore Renewable Energy Program, developed pursuant to the Energy Policy Act of 2005. To augment the intergovernmental task force process, EEA and the Massachusetts Clean Energy Center (MassCEC) established two working groups on fisheries and habitat to engage additional experts and stakeholders and provide a forum for bringing their input, concerns, and advice to BOEM and the federal process. In addition to these working groups, EEA and MassCEC have collaborated with BOEM to host dozens of local public meetings and workshops. Major milestones and outcomes since 2009 include:

- December 2010 - BOEM issued a Request for Interest (RFI) for an area off Massachusetts, seeking developer interest and input from stakeholders as to resources and concerns in the RFI area.
- May 2011 - At the request of the Patrick Administration, BOEM reduced the size of the RFI area in order to protect areas critical to commercial fisheries, marine fauna, and navigation.
- February 2012 - BOEM formally identified the Rhode Island/ Massachusetts Wind Energy Area (RI/MA WEA) (Figure 4).
- May 2012 - BOEM formally identified the Massachusetts Wind Energy Area (MA WEA) (Figure 4).
- June 2013 - BOEM issued a Finding of No Significant Impact for Environmental Assessment developed under the National Environmental Policy Act (NEPA) and the Final Sale Notice for the RI/MA WEA.
- July 2013 - BOEM held the first-ever competitive lease sale for offshore wind renewable energy in federal waters for two lease areas in the RI/MA WEA. Deepwater Wind New England, LLC was awarded both areas. Deepwater Wind must submit a Site Assessment Plan by April 1, 2015.
- December 2013 - The Department of Energy's National Renewable Energy Laboratory released a technical report analyzing the MA WEA and providing recommended delineations for potential leasing areas within the WEA.
- June 2014 - BOEM released the Proposed Sale Notice for the MA WEA, detailing the proposed auction format, the four lease areas available, proposed lease provisions and conditions, and criteria for evaluating competing bids. The federal lease sale is expected in 2014.

With respect to the federal leasing process for projects in federal waters, it is important to note the status of the Cape Wind energy project. After years of extensive environmental review, consultations, and litigation, in October 2010 Cape Wind was issued the nation's first commercial lease to construct and operate an offshore wind power facility in a lease area in Nantucket Sound. The project consists of 130 wind turbine generators with 3.6 MW nameplate capacity. The total capacity of the project is 468 MW, with an average anticipated output of 183 MW. The project will connect to the landside grid via two 115 kilovolt (kV) submarine transmission cables making landfall in the Town of Yarmouth. In April 2011, BOEM formally approved the Cape Wind project's Construction and Operations Plan and issued an Environmental Assessment and a Finding of No New Significant Impact. In November 2012, the Department of Public Utilities approved a long-term

power purchase agreement with NSTAR to buy Cape Wind's renewable energy capacity and renewable energy credits. Cape Wind continues to move forward with financing and contracts with supply chain businesses.

Another important development related to offshore wind energy is the development of the South Coast Marine Commerce Terminal. In May 2013, the Commonwealth and the City of New Bedford broke ground on the terminal site, which will be the first port facility in the United States specifically designed to support the construction, assembly, and deployment of offshore wind projects. The terminal will also be able to handle high-volume bulk and container shipping, as well as large specialty marine cargo. As part of construction, the project includes the dredging and removal of approximately 250,000 cubic yards of contaminated sediment caused by industrial waste generated during the 1930s and 1940s, a significant environmental benefit to the City of New Bedford. The terminal, located inside New Bedford Harbor and protected by the hurricane barrier, is in close proximity to the Cape Wind project site and the MA WEA and RI/MA WEA lease areas. It is expected that the terminal will provide key support to the construction of offshore wind projects in these areas. In September 2014, Cape Wind entered into a lease agreement with MassCEC to stage its construction operations out of the terminal. Cape Wind is expected to begin operations at the terminal site in January 2015.

- **Tidal Energy** - Several areas in Massachusetts waters have been identified as having potential for tidal renewable energy (also known as marine hydrokinetic energy). Technology for tidal energy is still developing, with pilot projects and a few commercial-scale projects underway in Europe and recently in Maine. The 2009 ocean plan identified four areas in Massachusetts state waters where tidal projects had applied for preliminary permits under the Federal Energy Regulatory Commission's (FERC) hydrokinetic licensing process. As of September 2014, only one project—the Muskeget Channel Tidal Energy Project—has met the FERC-specified schedule of activities, target dates, and reporting on the status of studies, and the project is now in pre-filing license status for a pilot project with FERC (Figure 4). The Muskeget Project is a partnership of the Town of Edgartown, the Marine Renewable Energy Collaborative of New England, and the University of Massachusetts Dartmouth's School for Marine Science and Technology. The proposed project will be phased and at its full pilot scale will include 14 tidal energy units with a nameplate capacity of five MW, suspended approximately 25 feet below the sea surface and anchored to the seabed in areas of the channel at least 100 feet deep. A total of approximately 206 acres of channel

area is required for all 14 units, including the anchoring system and space between units. A submarine cable will connect the tidal energy units to an on-shore site at either Chappaquiddick or Katama, in the Town of Edgartown. The Secretary's MEPA certificate on the ENF required the preparation of a Draft Environmental Impact Report (DEIR) and provided a scope for the DEIR that included pre- and post-deployment monitoring of potential impacts to commercial and recreational fisheries, marine mammals, large pelagic species, sea turtles, and avian species.

- **Wave Energy** - The 2009 ocean plan stated that while small, pilot-scale, wave energy projects have been proposed, and at least one demonstration project has been deployed, the prospect for commercial-scale wave energy—another type of marine hydrokinetic energy—is limited in Massachusetts. Based on input from the energy and infrastructure work group and others in the industry, this assessment has not changed since 2009. There may be opportunities for better wave energy resources farther offshore in federal waters, and there has been some consideration of a near-shore wave energy pilot project. The Town of Nantucket was exploring a paddle-type generator at the Madaket Beach area, but this project has been delayed indefinitely, due to a change in test site location by the wave energy developer, Resolute Marine.

- **Appropriate Scale** - The Oceans Act amends the Ocean Sanctuaries Act to allow the development of renewable energy facilities "of appropriate scale," provided that the renewable energy facility is otherwise consistent with an ocean management plan. The act delineates seven factors to be addressed in the appropriate scale test. For each of the factors, the 2009 ocean plan describes how the analysis, compatibility assessment, application of screening criteria, and development of siting and performance standards address the values and concerns of the appropriate scale test. Table 2-3 below lists the appropriate scale factors and summarizes how the ocean plan addresses each.

  The 2009 ocean plan found that pilot tidal projects would be presumed to be of appropriate scale if they: were licensed under the FERC pilot project process, fulfilled the community benefit standards of the plan, and were in compliance other existing regulatory standards. As detailed in FERC's April 2008 Licensing Hydrokinetic Pilot Projects white paper, the licensing approach is designed to test new hydrokinetic technologies, determine appropriate siting of these technologies, and confirm their environmental effects. Under the FERC process, projects eligible to use this process are

small, can be shutdown or removed on short notice, and avoid sensitive locations.

Table 2-3. Appropriate scale factors for the development of renewable energy facilities

Factor	As Addressed by the Ocean Plan
Protection of the public trust	The exclusionary screening criteria for Wind Energy Areas and the siting and performance standards associated with renewable energy facilities allowed in the Multi-use Area are designed to avoid, minimize, and mitigate impacts to activities associated with fishing, fowling, and navigation, in reasonable balance with the siting requirements of renewable energy.
Public safety	The exclusionary screening criteria for Wind Energy Areas and the siting and performance standards associated with renewable energy facilities allowed in the Multi-use Area address public safety by locating renewable energy facilities away from concentrations of human activities, including shipping and commercial navigation, commercial and recreational fishing, and recreational boating, to the maximum extent practicable.
Compatibility with existing uses	The exclusionary screening criteria for Wind Energy Areas and the siting and performance standards associated with renewable energy facilities allowed in the Multi-use Area are designed to avoid, minimize, and mitigate impacts to existing uses while not unduly limiting opportunity for renewable energy development.
Proximity to the shoreline	Wind Energy Areas may be sited no closer than 1 mile to the shoreline of inhabited land, where feasible. If a community pursues a project in the Multi-use Area, the determination of proximity will be a factor in community support for the project, as required below.
Environmental protection	The exclusionary screening criteria for Wind Energy Areas and the siting and performance standards associated with renewable energy facilities allowed in the Multi-use Area are designed to avoid, minimize, and mitigate impacts to important resources.
Community benefit	For wind, tidal, or wave energy allowed in the Multi-use Area, the project is required to demonstrate that the host community or communities formally support the project and—for projects other than test or demonstration-scale projects[3]—must provide an economic benefit to the community.
Appropriateness of technology and scale	"Appropriateness" is a function of the environmental, social, and economic interests assessed above and guides the distinction between community-scale wind (small because it may be located in busier, more visible waters) and Wind Energy Areas (larger, and sited to minimize conflicts).

[3] Test or demonstration-scale renewable energy projects are wind, tidal, or wave energy projects of a limited scale designed to pilot, test, and demonstrate renewable energy technology.

An important provision related to the determination of appropriate scale for renewable energy facilities was added in an amendment to the Ocean Sanctuaries Act in 2010. The legislative language in the amendment specified that a regional planning agency (RPA) with regulatory authority shall define the appropriate scale of offshore renewable energy projects within its jurisdiction and review such projects as developments of regional impact.

In October 2011, the Cape Cod Commission approved the Cape Cod Ocean Management Plan, describing the commission's regional definition of appropriate scale for renewable energy facilities. It also contains guidance on the siting for cables, pipelines, and sand and gravel extraction, including minimum performance standards for the commission's development of a regional impact review process. The Cape Cod Ocean Management Plan delineates wind energy conversion facility prohibited areas, which include a 2-nautical mile landward buffer and a series of SSU resources and concentrations of water-dependent uses as defined and mapped by the 2009 ocean plan. The prohibited area excludes large areas of Cape Cod Bay, the Cape Cod Ocean Sanctuary, and Nantucket Sound from wind energy facilities.

In October 2012, a Wind Energy Plan for Dukes County was adopted by the Martha's Vineyard Commission that delineated exclusionary areas and areas of special concern for offshore wind projects. Exclusionary areas are defined as "highly critical areas where no turbines or infrastructure shall be located." The commission formally defined a wind energy facility of appropriate scale as a facility that conforms to the Wind Energy Plan of Dukes County. In this plan, the vast majority of the Martha's Vineyard and Gosnold Wind Energy Areas are covered by the exclusionary areas designation.

This 2014 draft ocean plan affirms the definition of appropriate scale in the 2009 ocean plan as follows: A renewable energy facility will be of appropriate scale if the facility is capable of being sited in a given location such that the factors in Table 2-3 are addressed at a level of detail necessary for the EEA Secretary to make a determination of adequacy on an EIR, and, where applicable, for the Massachusetts Department of Environmental Protection (MassDEP) to authorize a project under the Chapter 91 and Water Quality Certificate regulations, such that:

1. Public trust rights are protected.
2. Public safety is protected.
3. Significant incompatibilities with existing uses are avoided.

4. Proximity to shoreline avoids and minimizes conflicts with existing uses and minimizes visual impact to the maximum extent feasible.
5. Impacts to environmental resources are avoided, minimized, and mitigated to the maximum extent practicable.
6. For community-scale wind and pilot-scale wave or tidal projects, the host community[4] (or communities) must formally support the project and, for projects other than test or demonstration-scale projects[5], must receive an economic benefit from the renewable energy facility. Further, other conditions described in the Management Standards section below apply to community wind projects.
7. The technology and scale of the facility are appropriate to the proposed location as demonstrated by consistency with 1 through 5, above.

- **Management Standards** - In addition to the requirements discussed in the Appropriate Scale section above, the 2009 ocean plan included the following Management Standards for renewable energy projects. These standards are affirmed in the 2014 draft ocean plan.

  As described above, commercial-scale wind energy projects are only allowed in designated Wind Energy Areas. Community-scale wind projects are also allowed in the two designated Wind Energy Areas. In the Multi-use Area, community-scale wind, pilot-scale tidal and wave, and commercial-scale tidal energy facilities are allowed subject to the siting and performance standards for SSU resources and for concentrations of water-dependent uses described in the Management Areas section above, additional standards detailed below, and other applicable law. The SSU resources and concentrations of water-dependent uses to be addressed for community-scale wind facilities are contained in Table 2-4. The SSU resources and concentrations of water-dependent uses to be addressed for commercial-scale tidal and pilot-scale tidal and wave energy facilities are contained in Table 2-5. It is important to note that pursuant to the ocean plan, the electric transmission cabling component of renewable energy projects, from the project to landside interconnect, is considered a cable project and must meet the siting and performance standards described in that section below.

[4] Host community means any town or city in which all or part of a renewable energy project's energy generating facilities (i.e., turbines not cables) are located.
[5] Test or demonstration-scale renewable energy projects are wind, tidal, or wave energy projects of a limited scale designed to pilot, test, and demonstrate renewable energy technology.

Table 2-4. SSU resources and concentrations of water-dependent uses to be addressed for community-scale wind energy facilities (see Figure 22)

Allowed Use	SSU Resource
Community-scale wind energy facilities	• North Atlantic right whale core habitat • Humpback whale core habitat • Fin whale core habitat • Roseate Tern core habitat • Special concern (Arctic, Least, and Common) tern core habitat • Sea duck core habitat • Leach's Storm-Petrel important nesting habitat • Colonial waterbirds important nesting habitat • Eelgrass • Intertidal flats
	Concentrations of Water-Dependent Use Area
	• High commercial fishing effort and value • Concentrated recreational fishing • Concentrated commerce traffic • Concentrated commercial fishing traffic • Concentrated recreational boating

Table 2-5. SSU resources and concentrations of water-dependent uses to be addressed for commercial-scale tidal energy facilities (see Figure 23)

Allowed Use	SSU Resource
Commercial-scale tidal energy facilities	• North Atlantic right whale core habitat • Eelgrass • Intertidal flats • Important fish resources
	Concentrations of Water-Dependent Use Area
	• High commercial fishing effort and value • Concentrated recreational fishing • Concentrated commerce traffic • Concentrated commercial fishing traffic • Concentrated recreational boating

- In addition to the siting and performance standards, additional management standards apply to community-scale wind facilities, as follows:
    1. Community-scale wind energy facilities are projects of a scale designed to provide energy for an individual community (or communities).

2. Working with the Massachusetts Association of Regional Planning Agencies, a methodology was developed for allocating the maximum number of allowed turbines on the basis of each RPA's offshore territory within the planning area, linear distance along the nearshore plan boundary, number of municipalities, and total wind energy potential (Figure 24). On the basis of the methodology, the 2009 ocean plan established an allocation of turbines that may be approved within each coastal area represented by an RPA, to be allocated in a manner to be determined by the individual RPAs. This allocation is contained in Table 2-6. The maximum allocation may be raised by the Secretary based on a demonstration by an RPA that the existing cap for a community-scale wind energy facility is not economically viable or that raising the allocation will cause no significant impact to appropriate scale interests.
3. Project proponents must demonstrate that the host community formally supports the project. Such support may be demonstrated by a letter from the town's Board of Selectman or the city's Mayor or City Council.
4. For projects not subject to review by RPAs with regulatory authority as developments of regional impact, appropriate scale shall be determined by the Secretary in consultation with the host community.
5. Community-scale wind projects are subject to review under the ocean plan via a mandatory EIR.

Table 2-6. Allocation of turbines for community-scale wind projects based on methodology developed with Massachusetts Association of Regional Planning Agencies

Regional Planning Agency	Maximum number of allowed turbines
Merrimack Valley Planning Commission	7
Metropolitan Area Planning Council	22
Old Colony Planning Council	9
Southeastern Regional Planning and Economic Development District	10
Cape Cod Commission	24
Nantucket Planning and Economic Development Commission	11
Martha's Vineyard Commission	17
TOTAL	100

- In addition to the siting and performance standards, additional management standards apply to commercial-scale tidal and pilot-scale tidal and wave energy facilities, as follows:
    1. Commercial-scale tidal energy facilities are projects at scale greater than could be authorized by FERC as a pilot project under its Hydrokinetic Pilot Project Licensing Process.
    2. Pilot tidal and wave energy facilities are projects at scale that could be authorized by FERC as a pilot project under its Hydrokinetic Pilot Project Licensing Process.
    3. Commercial-scale tidal energy facilities are subject to review under the ocean plan via a mandatory EIR.
    4. Pilot-scale projects are subject to review if they exceed existing MEPA thresholds for a mandatory EIR or if the Secretary requires a discretionary EIR based on review of an ENF. If subject to review, using the siting and performance standards for commercial-scale tidal energy facilities in Table 2-5 as guidance, the Secretary will determine the SSU resources and concentrations of water-dependent uses that apply in the MEPA scope.
    5. Project proponents must demonstrate that the host community formally supports the project. Such support may be demonstrated by a letter from the town's Board of Selectman, or the city's Mayor or City Council.
    6. For projects not subject to review by RPAs with regulatory authority as developments of regional impact, appropriate scale shall be determined by the Secretary in consultation with the host community.

Offshore Sand for Beach Nourishment

Coastal shorelines shift continuously in response to a variety of factors. Wind, waves, tides, seasonal variations, human alterations, and sea level rise influence the movement of sediment within shoreline systems. Areas of Massachusetts coastal communities are vulnerable to erosion and flooding, which can lead to damage to property and infrastructure as well as diminished habitat and recreational values. In developed areas, especially where coastal engineering structures are used to stabilize shorelines, natural sediment transport processes can be interrupted, and under conditions of reduced sediment, the ability of coastal resource areas such as dunes and beaches to provide storm damage prevention and flood control benefits is continually reduced.

Climate change will exacerbate these issues—higher sea levels and future storm events will result in greater erosion and flooding impacts over time. Under accelerated rates of sea level rise, low-lying coastal areas will be particularly vulnerable to increased erosion, flooding, and inundation. In addition, these impacts will extend farther inland, resulting in greater loss of land and damage to development and natural resources along the coast of Massachusetts.

As options for addressing current and future erosion and flooding issues are considered and strategies developed, interest in utilizing ocean sand resources for beach and dune nourishment and restoration is expected to increase. Offshore sand resources are one of several alternatives for projects seeking to add compatible material to beaches and dunes, the others being sand sourced from upland locations and from coastal navigational and other dredging projects. While the beneficial re-use of sand from dredging projects and the use of upland sand sources is common in Massachusetts (Figure 25), offshore sand has been used in only a very small number of projects. In many other states, including New Jersey, New York, Delaware, North Carolina, and Florida, offshore sand is routinely used for beach nourishment. While there are considerable sand resources in certain areas offshore in both state and federal waters, the extraction of this material for beach nourishment must be balanced with the protection of marine ecosystems—especially impacts on spawning and juvenile habitat for commercial and another important fish species—and water-dependent uses.

Beach and dune nourishment and restoration represent "living" or "green" approaches to erosion management and storm surge protection that are appropriate in specific locations under certain conditions. As an alternative to shoreline armoring with revetments, seawalls, or similar coastal structures, beach nourishment can provide environmental benefits as coastal habitat enhancement and by restoring sediment to down drift coastal landforms. Beach nourishment can also greatly improve public access and recreational opportunities and values. Like other engineered projects, beach nourishment projects have design lives based on water levels, wave heights, and other factors. These projects will eventually need additional sediment replenishment to continue to function as planned, and depending on actual conditions, may exceed or fall short of the project design life. The 2007 guidance document, *Beach Nourishment: Guide to Best Management Practices for Projects in Massachusetts*, developed by MassDEP and CZM, contains important guidelines, specifications, best management practices, and applicable regulatory references for potential beach nourishment projects.

Updates and changes to information on offshore sand for beach nourishment since 2009 are summarized in the following bullets.

- **Massachusetts Climate Change Adaptation Report** - The state's 2008 Global Warming Solutions Act (GWSA) directed the EEA Secretary to convene an advisory committee to analyze strategies for adapting to the predicted changes in climate and develop a report. Prepared by EEA and its Climate Change Adaptation Advisory Committee, the *2011 Massachusetts Climate Change Adaptation Report* is the first broad overview of climate change for the Commonwealth. The report describes the predicted impacts of a changing climate and the vulnerabilities of multiple sectors ranging from natural resources, infrastructure, public health, and the economy. It also provides an analysis of potential strategies that could better prepare Massachusetts for anticipated changes.

  The report is organized into two parts. Part I includes an overview of the observed and predicted changes to Massachusetts's climate and their anticipated impacts. It also includes key findings, a set of guiding principles, and key adaptation strategies that cut across multiple sectors. One of the 12 overarching strategies is to encourage ecosystem-based adaptation, highlighting the ability of natural ecosystems to reduce the vulnerability of the natural and built environments. The report states that "using natural habitats as 'green' infrastructure can help impede and potentially eliminate the risk posed by some climate change impacts while supporting crucial biota, enhancing quality of life, and serving as a carbon sink." Other important strategies highlighted in the report include advancing risk and vulnerability assessments, improving planning and land use practices, and supporting local communities.

  Part II of the report covers five broad issue areas—including a chapter on Coastal Zone and Oceans—describing each issue area's vulnerabilities to climate change and outlining adaptation strategies that could help increase resilience and preparedness. The Coastal Zone and Oceans chapter includes recommendations for "sector" specific strategies, including the following related to beach and dune nourishment and restoration:

  - Continue to advance use of soft engineering approaches that supply sediment to resource areas such as beaches and dunes in order to manage the risk to existing coastal development.
  - Consider prioritizing placement of sediment on public beaches over offshore disposal.
  - Promote habitat enhancement projects that would serve as green infrastructure, such as: oyster or mussel reefs for storm surge attenuation, constructed wetlands for floodwater control and storm

surge attenuation, planted coir fiber sills for erosion control and storm surge protection, and beach or dune nourishment for erosion control and storm surge protection.

Work on implementation of many of the elements of the *2011 Massachusetts Climate Change Adaptation Report* is in progress through programs and efforts across state agencies and by municipalities, non-governmental organizations, and the private sector. In January 2014, the Patrick Administration announced a coordinated plan for climate preparedness to increase resiliency across the Commonwealth, which included investments to reduce risk associated with coastal storms and sea level rise. In April 2014, $1 million in grants was awarded to 10 cities and towns through CZM's Coastal Community Resilience Grants Program to support local climate preparedness efforts to address the effects of coastal storms, flooding, erosion, and sea level rise. In May 2014, over $1 million was awarded to nine municipalities and non-profit organizations through CZM's Green Infrastructure for Coastal Resilience Pilot Grant Program to support community-based efforts to reduce risks associated with coastal storms, erosion, and sea level rise through natural and nonstructural approaches called green infrastructure. A second round of these grant programs was announced in September 2014.

- **Coastal Erosion Commission** - In July 2013, the Massachusetts Legislature passed the 2014 Budget Bill that included a section establishing a Coastal Erosion Commission. The commission was charged with investigating and documenting the levels and impacts of coastal erosion in the Commonwealth and developing strategies and recommendations to reduce, minimize, or eliminate the magnitude and frequency of coastal erosion and its adverse impacts on property, infrastructure, public safety, and beaches and dunes.

  Among several key first steps for the commission was the development of shoreline characterization profiles for cities and towns to better understand the coastal erosion issue and the many factors involved. Using data and maps on shoreline change, presence of coastal structures, wetland resource areas, and land use, CZM developed a series of maps and summary charts for the commission that compiled information along 50-meter segments of about 1,028 miles of exposed open-water facing shoreline (excluding protected harbors, embayments, and estuaries). Organized by five regions, the shoreline characterization and change analyses profiles contain information for each of the 57 coastal communities assessed and are available on the Coastal Erosion Commission website at www.mass.gov/eea/erosion-commission.

In terms of statewide summaries, Table 2-7 identifies and Figure 26 displays the communities with some of the highest short-term erosion rates (i.e., approximately last 30 years, from ~1970 to 2008/2009). Table 2-8 and Figure 27 contain public beaches with highest short-term erosion rates. While these summaries serve to illustrate, in part, the scope of the erosion issue, there are many additional communities and public beach areas that also have areas of concern.

Long- and short-term shoreline change information from CZM's Shoreline Change Program is available via its interactive online mapping tool, the Massachusetts Ocean Resource Information System (or MORIS), via www.mass.gov/eea/agencies/czm/program-areas/stormsmart-coasts/shoreline-change. Figure 28 depicts the extent of shoreline with shore-parallel coastal structures (i.e., seawalls, revetments, and bulkheads). Figure 29 shows areas of shoreline where shore-parallel coastal structures are at or near the limit of mean high water and therefore restrict landward movement of shoreline. In these locations, there is often no dry beach at high tide. Storm impacts at these locations can be greater, as fronting beaches help to dissipate wave energy, and with an engineered structure "fixing" the shoreline in place, there is no landward migration of the shoreline to keep pace with sea level rise.

Table 2-7. Communities with highest short-term (i.e., past ~30 year) erosion rates

Town	Short-term rate (ft/yr)
Yarmouth**	-8.7
Eastham*	-5.7
Orleans*	-5.7
Salisbury	-3.7
Ipswich	-3.6
Rowley	-3.3
Wellfleet*	-3.1
Truro*	-3.0
Nantucket	-2.7
Edgartown	-2.4
Newbury	-2.4
Wellfleet**	-2
Weymouth	-1.9
Chilmark	-1.8
Orleans**	-1.7
Eastham**	-1.7

Town	Short-term rate (ft/yr)
Truro**	-1.6
Hull	-1.5
Provincetown	-1.4
Scituate	-1.3
* Location on Outer Cape Cod	
** Location on Cape Cod Bay	

Table 2-8. Public beaches with highest short-term erosion rates

Beach	Town	Short-term rate (ft/yr)
Lighthouse	Chatham	-51.0
Norton Point State Park	Edgartown	-19.0
Dyer Prince	Eastham	-7.9
Duck Harbor	Wellfleet	-6.7
Nauset	Orleans	-5.5
Egypt	Scituate	-5.0
Sandy Point Reservation	Ipswich	-5.0
Newcomb Hollow	Wellfleet	-4.8
Town Neck (Boardwalk)	Sandwich	-4.8
Sconset	Nantucket	-4.7
Cranes	Ipswich	-4.6
Coast Guard	Eastham	-4.4
Ballston	Truro	-4.2
Demarest Lloyd	Dartmouth	-4.2
Good Harbor	Gloucester	-4.1
Plum Island	Newbury	-4.1
Salisbury	Salisbury	-3.9
Nauset Light	Eastham	-3.8
Town Landing (Breakwater)	Provincetown	-3.7
Popponesset	Mashpee	-3.3

As another key part of its initial work, the commission held five regional workshops in May and June 2014 to solicit public input and feedback on a range of issues related to coastal erosion affecting residents and communities in Massachusetts. Workshop attendees identified a number of specific geographic areas of particular concern and shared suggestions about scientific, information, and mapping needs; regulations and state involvement; local assistance desired; and best management practices and approaches the commission should support. One of several themes coming from workshop participants was broad support for utilizing offshore sand

for beach nourishment as an erosion management approach, with caveats expressed about potential impacts and the need for more information.

As of the date of publication of the 2014 draft ocean plan, work by the commission is ongoing. To provide assistance in completing its charge, the commission has established three working groups: science and technical; erosion impacts; and legal and regulatory. Using information, resources, and preliminary recommendations from the working groups, the commission is working to develop a report with its findings and a series of recommended strategies and actions to better manage coastal erosion and its adverse impacts on property, infrastructure, public safety, and beaches and dunes. A draft report is expected in late 2014 for public review and comment. More background and information on the Coastal Erosion Commission is available at www.mass.gov/eea/erosion-commission.

- **Potential Offshore Sand Resource Areas Siting** - The 2009 ocean plan called for further work to advance the identification of potential areas with suitable sand resources for beach nourishment. Since 2009, CZM has continued its long-term partnership with the U.S. Geological Survey (USGS) and other partners on a cooperative seafloor mapping program. As of 2014, the cooperative has mapped 1,393 square miles of state marine waters and has published or is preparing to release these data as USGS Open-File Reports. Geophysical data, including bathymetry, acoustic backscatter (a measure of seafloor hardness and roughness), and seismic-reflection profiles (pictures of sub-surface sediment layers), have been collected in these areas. In addition, seafloor sediment samples and photographs/videos of the seafloor were gathered to validate the geophysical data. CZM and the state Division of Marine Fisheries (*MarineFisheries*) undertook three research surveys in 2010, 2011, and 2012 aboard the U.S. Environmental Protection Agency's Ocean Survey Vessel (OSV) *Bold*, visiting 870 stations to collect seafloor imagery and grab samples and conduct sediment and benthic infaunal analysis as part of its seafloor mapping program to inform ocean planning and management. These data have been used to create interpretive data products such as maps of surficial seafloor sediments, seafloor sediment depth to bedrock, and physiographic zones (a term used by geologists to define regions of the seafloor based on morphology and sediment types). CZM, with guidance from and in close consultation with the USGS Woods Hole Science Center, has also worked to identify areas of sand deposits based on geologic mapping by USGS, other published geologic maps, and available information from seismic data and sediment cores.

The scope for the update of the 2009 ocean plan called for work to advance the planning for and identification of appropriate potential locations for offshore sand areas, taking into account important criteria including compatible sand resources, potential environmental impacts, interactions with existing water-dependent uses, and consideration of other key factors. Responding to this scope and building on the work and approaches in the 2009 ocean plan, the 2014 draft ocean plan employs a compatibility assessment and screening analysis to identify offshore areas for further characterization, investigation, and assessment work, with the goal of advancing a few pilot projects in the next five years.

To implement this approach, a preliminary map of sand resources that encompasses state waters and extends seven nautical miles seaward of the planning area was developed. First, deposits composed primarily of sand, formed by reworking of glacial deposits, were identified based on geologic mapping by USGS and other published geologic maps, and were then refined using available surficial sediment data, seismic sub-bottom profiles, and sediment cores characterizing the deposits as medium- to coarse-grained sand (Appendix 3). Figure 30 depicts the preliminary map of sand resources from this process.

Areas to avoid were then identified based on potential biological and physical environmental impacts, incompatibility and/or adverse interactions with existing uses and sites, and limitations and specifications of dredging operations. Table 2-9 lists the areas to avoid and Figure 31 depicts a map of these areas overlain on the sand resources. Appendix 4 contains maps of all of the designated areas to avoid.

Table 2-9. Areas to avoid for siting of potential offshore sand areas

Category	Areas to avoid
Prohibited and Protected Areas	Cape Cod Ocean Sanctuary
	Stellwagen Bank National Marine Sanctuary
SSU Resource Areas	North Atlantic right whale core habitat*
	Humpback whale core habitat*
	Fin whale core habitat*
	Roseate Tern core habitat*
	Hard/complex seafloor
	Eelgrass
	Intertidal flats
	Important fish resources**
Critical Fisheries Management Areas	Winter Cod Conservation Zone
	Spring Cod Conservation Zone

Category	Areas to avoid
Depth of Closure and Shoals	Areas of water depth <30 ft
Transportation and Navigation Uses	Anchorage areas (C, D, L, and M)
	Pilot boarding areas
Infrastructure Uses	Cable areas and existing cables with 250-m buffers
	Pipeline areas and existing pipelines with 500-m buffers
	Liquefied natural gas deepwater ports
Aquaculture Uses	Aquaculture sites
Sites to Avoid	Nomans Danger Zone
	Cape Wind project footprint
	U.S. Army Corps of Engineers disposal sites
Areas of Operational Limitation	Water depth <16 ft (minimum draft of dredge when loaded) or >125 ft (maximum operating depth of dredge)
* Avoidance of these SSU areas could be met by the enforceable application of time of year controls (TOY) such that the activity will not occur when the SSU resource is present or may be adversely affected.	
** Areas of two delineated important fish resources SSU areas have been designated as provisional, subject to further analysis and consultation with *MarineFisheries*, the National Marine Fisheries Service, and the fisheries work group.	

Among the areas to avoid are four SSU resource areas for North Atlantic right whale core habitat, humpback whale core habitat, fin whale core habitat, and Roseate Tern core habitat. The ocean plan and its implementing regulations allow for proponents to demonstrate compliance with siting standards by incorporating measures to avoid resources and impacts through TOY controls such that offshore sand project will not occur when the SSU resource is present or may be adversely affected. As described below as part of the 2014 draft ocean plan's management standards, enforceable TOY preclusions for the North Atlantic right whale core habitat, humpback whale core habitat, fin whale core habitat, and Roseate Tern core habitat resource areas will be mandatory for potential offshore sand areas, based on consultations with *MarineFisheries*, the Department of Fish and Game's Natural Heritage and Endangered Species Program, and federal agencies. Additional provisions to avoid, minimize, and mitigate impacts to concentrations of water-dependent uses will also apply.

In the last part of the sand source analysis, the areas of sand resources outside of areas to avoid were identified and resulting polygons were put onto a 250-meter grid and smoothed. Shown in Figure 32, the output of the analysis results in 12 areas identified for further investigation: areas that are designated as preliminary sand resource areas and those designated as provisional sand resource areas. In total, these areas constitute seven percent

of the planning area. The provisional sand resource areas are areas adjacent to two of the preliminary sand resource areas with apparent deposits of medium- to coarse-grained sand that fall within the mapped important fish resources SSU area. Given the mapping methodology for the important fish resources SSU area, which utilizes data from the *MarineFisheries* long-term resource assessment surveys based on sampling "strata" designed and defined for the survey, and understanding that within individual important fish resources SSU areas there are variations in species composition, abundance, and potential vulnerability to dredging, these provisional areas will be subject to further analysis and consultation with *MarineFisheries*, the National Marine Fisheries Service (NMFS), and the fisheries work group. Based on these consultations, areas within the provisional sand resource areas will either be designated as preliminary sand resource areas or eliminated as potential sites.

There are also sections of three of the preliminary sand resource areas that fall within federal waters. BOEM has recently initiated a comprehensive study to acquire geophysical and geological data to support the identification, characterization, and delineation of sand resources on the Outer Continental Shelf (OCS) for future coastal restoration, beach nourishment, and/or wetland restoration efforts. As described in Chapter 1, the Northeast Regional Planning Body (Northeast RPB) is working on the development of a regional ocean plan and associated products to guide agency decision making, consistent with existing authorities. A stated goal in the Northeast RPB's regional ocean planning framework, which identifies the goals, objectives, actions, and products to build a regional ocean plan by early 2016, is to identify opportunities to enhance inter-agency coordination for review of certain ocean-based projects, including offshore sand for beach nourishment. Coordination and integration with these efforts will advance the further investigation and consultation called for in the 2014 draft ocean plan.

It is critical to emphasize that these areas are being further characterized with the goal of finding sites within them that would support a few pilot beach and dune nourishment projects over the next five years, in order to evaluate the efficacy, effects, and performance of this allowed activity. Pilot beach nourishment projects would be community-based projects ranging from ~100,000 to 500,000 cubic yards (yd^3) and would have to meet the standards and conditions described in the Management Standards section below. The inset in Figure 32 illustrates three project footprints: 100,000 yd^3, 250,000 yd^3, and 500,000 yd^3. These footprints assume a one yard deep dredge area,

which is the benchmark minimum for operational planning, and in most cases the depth would range from one to about three yards, reducing the footprint accordingly.

The actual placement of sand on the beach and dune would be outside of the jurisdiction of the ocean plan. Thus the prioritization, evaluation, and determination of the pilot beach nourishment projects will be a separate but parallel process to the ocean plan update and amendment process. As mentioned above, the Coastal Erosion Commission is working on developing strategies and recommendations to address coastal erosion management, and commission discussions to date, as well as feedback received during public workshops, have included the concept of using pilot projects to evaluate certain types of coastal erosion management practices. It is anticipated that the commission will provide recommendations to the EEA Secretary as to options for integrating the ocean plan work on potential offshore sand resources with an approach to determine the pilot community-based sites to demonstrate and evaluate beach and dune nourishment projects with offshore sand sources.

Two phases are anticipated to further investigate the preliminary and provisional sand resource areas. More detail on this proposed work is provided in the Science Framework section in Volume 2 of this document. Key elements in phase one will include: consultation with *MarineFisheries*, NMFS, and the fisheries work group to examine the sections of the important fish resources SSU area within the provisional sand resource areas to identify species of concern and initial survey work via seismic-reflection profiling and core sampling to verify geologic conditions. Phase two will include finer-scale core sampling and biological surveys, as necessary. Based on the data and information resulting from the investigation and characterization work, preliminary sand resource areas are subject to change under future updates to the ocean plan.

- **Management Standards** - The 2009 ocean plan allows offshore sand projects for beach nourishment in the Multi-use Area, subject to the siting and performance standards for SSU resources and for areas of concentrations of water-dependent uses described in the Management Areas section above, additional standards detailed below, and other applicable law. The SSU resources and concentrations of water-dependent uses to be addressed for offshore sand projects for beach nourishment are contained in Table 2-10.

Table 2-10. SSU resources and concentrations of water-dependent uses to be addressed with offshore sand projects for beach nourishment (see Figure 33)

Allowed Use	SSU Resource
Offshore sand projects for beach nourishment	• North Atlantic right whale core habitat • Humpback whale core habitat • Fin whale core habitat • Roseate Tern core habitat • Hard/complex seafloor • Eelgrass • Intertidal flats • Important fish resources
	Concentrations of Water-Dependent Use Area
	• High commercial fishing effort and value • Concentrated recreational fishing

These management standards are proposed as part of the 2014 draft ocean plan:

- Pilot projects proposed in the preliminary sand resource areas are subject to review under the ocean plan via a mandatory EIR and other applicable law.
- Pilot projects proposed in the preliminary sand resource areas are in presumptive compliance with the siting standards of the ocean plan, provided that:
    1. Investigations and surveys confirm the presence of sand-dominated sediments (e.g., medium- to coarse-grained sand are dominant fractions) in deposits that exceed one yard in sediment depth.
    2. TOY controls are in place such that operations and dredging will avoid damage and cause no significant alteration to the following SSU resources:
        - North Atlantic right whale core habitat,
        - Humpback whale core habitat,
        - Fin whale core habitat, and
        - Roseate Tern core habitat.
    3. Potential impacts to the following concentrations of water-dependent uses are avoided, minimized, and mitigated to the maximum extent practicable:
        - High commercial fishing effort and value, and
        - Concentrated recreational fishing.

4. Public benefits associated with the proposed project outweigh public detriments, such that:
    - Sand resources must be for a community-based project on a public beach that protects public infrastructure, natural resources, and other public interest factors, such as increased access and recreation; and
    - Alternative sand sources from beneficial re-use associated with navigational or other dredging projects are not reasonably practicable, taking into consideration cost, geographic proximity, timing, and other logistics.

- Pilot projects proposed in the preliminary sand resource areas must develop and implement a biological and physical monitoring plan for the sand source area and beach nourishment site, in consultation with EEA agencies and subject to the Secretary's approval.

The 2014 draft ocean plan does not preclude potential project proponents from exploring and advancing offshore sand projects outside of the designated preliminary sand resource areas within the Multi-use Area. Any proposed project would have to meet the siting and performance standards for SSU resources and for areas of concentrations of water-dependent uses described in the Management Areas section above, the management standards detailed above, and other applicable law.

Cables and Pipelines

Cables and pipelines are important infrastructure components for the transmission and distribution of electricity, fuels, and telecommunications. The provision of these particular goods and services is connected to national energy and communication supply and security matters. With the development of high-bandwidth fiber-optic cables, these technologies are now replacing traditional wire cabling for communications networks. This linear infrastructure has several installations already in Massachusetts waters including electric and telecommunication connections between both Nantucket and Martha's Vineyard and the mainland (Cape Cod) as well as the Hibernia cross-Atlantic communication cable system connected in Lynn. More recently, a combined fiber-optic communications and electric cable bundle from Falmouth to Tisbury by Comcast and NSTAR was installed in spring 2014. This project was the first to complete review and permitting and found to be consistent with the ocean plan.

On the fuel side, the transport of liquefied natural gas (LNG), in particular, through new pipeline systems has also greatly increased the range of transport and delivery of this important energy resource. There are currently several pipeline installations in Massachusetts marine waters, including the HubLine high-pressure gas pipeline that transits around Boston Harbor from Beverly to Weymouth and connections to the HubLine from the two deepwater LNG ports of Northeast Gateway and Neptune located southeast of Gloucester. In July 2012, the U.S. Department of Transportation's Maritime Administration approved a request from Neptune LNG LLC to amend its federal Deepwater Port License to include a five-year temporary suspension of port operations. Neptune's request indicated that recent conditions within the Northeast region's natural gas market had significantly impacted the Neptune Port's operational status and its ability to receive a consistent supply of natural gas imports.

As with other allowed uses, the 2009 ocean plan addressed cables and pipelines through siting and performance standards. For both cables and pipelines, the intent of the ocean plan is to minimize the cumulative impact of future development by requiring that linear infrastructure be "bundled" within common corridors to the maximum extent practicable. The standards from the 2009 ocean plan, along with updates and proposed amendments for the 2014 draft ocean plan, are described in the bullets below.

- **Offshore Wind Energy on the Outer Continental Shelf** - The 2009 ocean plan stated that a key emerging issue for cables is the future development of offshore wind energy facilities in federal waters on the Outer Continental Shelf (OCS), which will require cable connections to the Massachusetts coast. As described above in the section on Offshore Wind Energy, since 2009 there has been significant progress in the planning and analysis for potential commercial wind leasing in two area offshore federal waters south of Martha's Vineyard and Nantucket and east of Block Island (Figure 4). Massachusetts has been working closely with BOEM and two intergovernmental task forces—comprised of federal, state, tribal, and local elected officials—on the first phases of the federal Offshore Renewable Energy Program, developed pursuant to the Energy Policy Act of 2005. To augment the intergovernmental task force process, EEA and MassCEC established two working groups on fisheries and habitat to engage additional experts and stakeholders and provide a forum for bringing their input, concerns, and advice to BOEM and the federal process. In addition to these working groups, EEA and MassCEC have collaborated with BOEM to host dozens of local public meetings and workshops. Among the many milestones and outcomes since 2009, in July 2013, BOEM held the first-ever

competitive lease sale for offshore wind renewable energy in federal waters and awarded Deepwater Wind New England, LLC two lease areas in the RI/MA WEA. Deepwater Wind must submit a Site Assessment Plan by April 2015. Another major landmark was the release of the Proposed Sale Notice for the MA WEA in June 2014, detailing the proposed auction format, the four lease areas available, proposed lease provisions and conditions, and criteria for evaluating competing bids. The federal lease sale is expected in 2014. Potential projects resulting from the federal auction will need to bring transmission cables from the federal lease areas to landside electric grid connection sites.

- **MassCEC Transmission Study** - In the spring of 2014, MassCEC, working in close coordination with EEA, CZM, and the Massachusetts Department of Energy Resources, commissioned a study to analyze and understand the components and aspects of transmission infrastructure and regional electric grid interconnection associated with potential wind projects offshore Massachusetts. The study report developed by a team of consultants led by the ESS Group Inc. provides important insight into the technical and logistical aspects of transmission, including both high-voltage direct current (HVDC) and high-voltage alternating current (HVAC) systems, the configuration and components of the system, and potential electric grid tie-in locations. The study affirms that there are a number of potential interconnection points in Massachusetts and southern New England where offshore wind projects in the MA WEA and the RI/MA WEA could link into the existing electric grid. These Independent System Operator-New England 345 kV substations could integrate the large block of energy generated by potential offshore wind projects with certain upgrades and improvements. Based on analysis contained in the report, the three most advantageous interconnection points based on a number of criteria are: Brayton Point Substation in Somerset, MA; Canal Substation in Sandwich, MA; and Kent County Substation in West Warwick, RI. (Other potential interconnect points include: Carver Substation in Carver, MA; Oak Street Substation in Barnstable, MA; State Forest Transition Station at Myles Standish State Forest, MA; Millstone Substation, Waterford, CT; Montville Substation, Montville, CT; and Shoreham Substation, Brookhaven, NY). Of the three top-tier substation sites identified in the MassCEC report, only one—Sandwich Canal—would involve a potential route within the planning area (Figure 34). The study also describes integral system components including inter-array alternating current (AC) cabling, offshore AC collector stations, offshore and land-based converter stations, and the long distance cable bundle(s).

The preferential siting of, and potential impacts from, transmission cables are strongly influenced by installation methods. Under both state and federal regulatory programs, projects will have to ensure that transmission cables be buried approximately 6 feet under the seafloor and have an approved plan for inspection and maintenance to ensure that adequate coverage is maintained. Proper burial of transmission cables avoids or minimizes impacts to water-dependent uses, including commercial and recreational fishing, shipping, and boating (when anchoring is required). As opposed to methods such as mechanical plowing and dredging, installation via jet plowing or remotely operated seabed tractor techniques is strongly preferred. These methods are considerably more precise with significantly smaller footprint, width of trench, and associated impacts. The MassCEC report contains additional information on the installation methods. In locations where seafloor bottom conditions prevent target burial depth, cover is required to protect the cable. This involves the addition of rock armoring, concrete mattresses, or clean sediment. These materials are put down over the cable to provide necessary coverage and protection. Installing the transmission cable in areas of the seafloor away from hard bottom is strongly recommended so that preferred installation techniques can be used, target burial depths can be achieved, and impacts to environmental resources and water-dependent uses can be avoided and minimized.

Near the landfall location, Horizontal Directional Drilling (HDD) operations will likely be employed to avoid significant resources (e.g., eelgrass, wetlands, beaches, shellfish areas, etc.) and other land-based or estuarine impacts from construction. HDD may also be used at certain linear crossings along the land-based cable route (e.g., streams, railroads, major crossing streets). HDD operations include a land-based drilling rig system that drills down and under land and water for distances of up to approximately 3,000 feet or more. The MassCEC study is an initial, high-level technical assessment to support planning and stakeholder discussions around transmission and is intended to describe the relationship between sequential development of the Wind Energy Areas—which is still years out—and associated transmission infrastructure, independent of markets and policy. The MassCEC transmission report is available at: mapping.masscec.com.s3.amazonaws.com/MassCEC-OSW-Transmission-Study-2014.pdf.

- **Potential Offshore Wind Energy Transmission Siting** - The scope for the 2014 draft ocean plan called for work to advance important initial steps in the planning and siting of offshore wind energy transmission corridor(s) to

bring renewable energy from the projects in federal waters across state waters to landside grid tie-in location(s), with the goal of minimizing environmental impacts and conflicts with existing water-dependent uses. Building on the work and approaches in the 2009 ocean plan, the 2014 draft ocean plan employed a compatibility assessment, screening analysis, and optimization tool to identify potential transmission corridor routes for further characterization, investigation, and assessment work, with the goal of synchronizing transmission planning and siting with the next stages in the BOEM process, including leasing, site assessment, and NEPA analysis.

For the 2014 draft ocean plan, in the first part of the siting method, the projected federal lease areas within the MA WEA and RI/MA WEA, as delineated by BOEM, were used as the areas of origin, and the Canal Substation in Sandwich was identified as the target top-tier substation destination (Figure 34).

Through the compatibility assessment and screening analysis, areas to avoid and areas of concern were identified based on potential biological and physical environmental impacts, incompatibilities, limitations and specifications of transmission cable installation operations, and/or adverse interactions with existing uses and sites to avoid. Table 2-11 lists the areas to avoid and areas of concern, and Figure 35 depicts a map of these areas with the Wind Energy Areas and substations. Appendix 5 contains maps of the areas to avoid and areas of concern.

Table 2-11. Areas to avoid and areas of concern for siting of potential offshore wind transmission cables corridors

Category	Areas to avoid
SSU Resources	North Atlantic right whale core habitat
	Humpback whale core habitat
	Fin whale core habitat
	Hard/complex seafloor
	Eelgrass
	Intertidal flats
Seafloor Substrate	Areas of rock from surficial sediment dataset
Transportation and Navigation Uses	Anchorage Areas (C, D, L, and M)
Aquaculture Uses	Aquaculture sites
Sites to Avoid	Nomans Danger Zone
	Cape Wind project footprint
	U.S. Army Corps of Engineers disposal sites
Areas of Operational Limitation	Water depth <16 feet (limitations to cable installation vessels due to draft, currents, navigational hazards)

Category	Areas of concern
SSU Resources	Important fish resources
Infrastructure Uses	Cable areas and existing cables with 250-m buffers
	Pipeline areas and existing pipelines with 500-m buffers

The optimization analysis then generated routes that would steer clear of the areas to avoid while minimizing cable distance. Because potential landfall locations fall outside the planning area and there are many available options (and therefore uncertainty) related to specific sites, the 2014 draft ocean plan focuses on the planning area and identifies routes that fall outside the areas to avoid. Based on the outputs, four 500-meter wide corridors were mapped: (1) a northern route in Buzzards Bay, (2) a southern route in Buzzards Bay, (3) a route in Vineyard Sound, and (4) a route through Muskeget channel into the western part of Nantucket sound. In the corridor areas closer to the landward boundary of the planning area, the areas for further investigation were expanded to include wider planning area sections. The outputs of the analysis showing the with the areas to avoid and areas of concern and the preliminary areas for offshore wind transmission cables for further investigation are shown in Figure 36, with a close-up version contained in Figure 37. Figure 38 contains the preliminary areas for offshore wind transmission cable corridors.

Important fish resources SSU area was not identified as a protected area to be addressed by cable projects in the 2009 ocean plan. However, as areas of concern, cables should avoid this SSU resource where feasible. In small sections of the important fish resources SSU area, where the avoidance of these areas is not possible, consultation with *MarineFisheries*, NMFS, and the fisheries work group will help to identify whether there are specific locations of significance and whether measures are needed to avoid resources and impacts through TOY controls, such that the construction of a project will not occur when the SSU resource is present or may be adversely affected. TOY preclusions for North Atlantic right whale core habitat, humpback whale core habitat, and fin whale core habitat will be mandatory for transmission cable installation projects. Additional provisions to avoid, minimize, and mitigate impacts to areas of concentrations of water-dependent uses will also apply.

With respect to the tasks and efforts to further investigate the preliminary areas for offshore wind transmission cables, more detail on this proposed work is provided in the Science Framework in Volume 2 of this document. Key elements will include: ongoing consultation with agencies, survey work

that includes seismic-reflection profiling, core sampling, and magnetometry work. Based on the data and information resulting from the investigation and characterization work, preliminary areas for offshore wind transmission cables are subject to change under future updates to the ocean plan.

- **Management Standards** - The 2009 ocean plan allows cables and pipelines in the Multi-use Area, subject to the siting and performance standards for SSU resources and concentrations of water-dependent uses described in the Management Areas section above, additional standards detailed below, and other applicable law. The SSU resources and concentrations of water-dependent uses to be addressed for cable projects are contained in Table 2-12 and Figure 39 and for pipeline projects in Table 2-13 and Figure 40.

Table 2-12. SSU resources to be addressed for cables (see Figure 39)

Allowed Use	SSU Resource Area
Cable projects	• North Atlantic right whale core habitat • Humpback whale core habitat • Fin whale core habitat • Hard/complex seafloor • Eelgrass • Intertidal flats

Table 2-13. SSU resources and concentrations of water-dependent uses to be addressed for pipelines (see Figure 40)

Allowed Use	SSU Resource Area
Pipeline projects	• North Atlantic right whale core habitat • Humpback whale core habitat • Fin whale core habitat • Hard/complex seafloor • Eelgrass • Intertidal flats • Important fish resources
	Concentrations of Water-Dependent Use Area
	• High commercial fishing effort and value • Concentrated recreational fishing

These management standards are proposed as part of the 2014 draft ocean plan:

  - Projects proposed in the preliminary areas for offshore wind transmission cables are in presumptive compliance with the siting standards of the ocean plan, provided that:

1. Investigations and survey confirm the absence of hard-bottom substrate, or the presence of small areas within the corridor such that the cable route cannot be practicably located without going through these areas of hard-bottom substrate, to be determined by EEA in consultation with its agencies.
2. TOY controls are in place such that operations and dredging will avoid damage and cause no significant alteration to the following SSU resources:
    - North Atlantic right whale core habitat,
    - Humpback whale core habitat, and
    - Fin whale core habitat.

- Projects proposed in the preliminary areas for offshore wind transmission cables must develop and implement a biological and physical monitoring plan, in consultation with EEA agencies and subject to the Secretary's approval.

The 2014 draft ocean plan does not preclude potential project proponents from exploring and advancing transmission cable projects outside of the designated preliminary areas for offshore wind transmission cables within the Multi-use Area. Any proposed project would have to meet the siting and performance standards for SSU resources and for concentrations of water-dependent uses described in the Management Areas section above, the management standards detailed above, and other applicable law.

Fishing and Aquaculture

Fishing in the Commonwealth has a long and deep history. Commercial and recreational fishing are significant drivers of the marine economy and are important for their contributions to shoreside business. New Bedford, Gloucester, Provincetown, and Boston are home to the state's major commercial fleets, but nearly all harbors and inlets in Massachusetts support some type of commercial fishing activity. The Massachusetts marine aquaculture industry is also an important and growing trade. Although currently focused on shellfish, with technological advances and improved understanding of oceanographic conditions, offshore aquaculture has considerable promise for the future. Recreational boating and fishing are also widespread and important marine water-dependent uses in the Bay State.

Commercial and recreational fishing are allowed uses managed by *MarineFisheries*, which maintains the sole authority for the opening and closing of areas for the taking of any and all types of fish, and works closely with its Marine Fisheries Advisory

Commission, the New England Fishery Management Council, and Atlantic States Marine Fisheries Commission to manage species on a consistent basis across the region.

As directed by the Oceans Act, the ocean plan reflects the importance of commercial and recreational fishing by identifying areas of high commercial fishing activity and concentrations of recreational fishing activity. Current efforts are underway as part of the Northeast regional ocean planning initiative to more fully understand and characterize commercial and recreational fishing activities. This information will assist in evaluating the potential impacts of specific projects. EEA and its agencies will continue to collaborate and track these efforts to increase understanding of the spatial and other aspects of these important water-dependent uses.

Aquaculture is licensed by the towns, *MarineFisheries*, and the U.S. Army Corps of Engineers (USACE). Additionally, the Department of Agricultural Resources (DAR) provides a variety of services aimed at the promotion and development of Massachusetts aquaculture. DAR's Aquaculture Program, located within the Division of Agricultural Conservation and Technical Assistance, fosters development of the Massachusetts aquaculture industry through efforts aimed at implementation of the Commonwealth's Aquaculture Strategic Plan.

In addition to other applicable regulatory authorities, aquaculture projects are subject to review and permitting by *MarineFisheries* (322 CMR 15.00). The regulations control the siting and operation of five categories of aquaculture. Facilities most likely to occur within the planning area are bottom-anchored cages for finfish and bottom-anchored long-line systems for shellfish. The 2009 ocean plan stated that *MarineFisheries* will utilize the maps and standards in the ocean plan in their site review and regulatory process, which includes evaluation of: water quality, benthic habitat, submerged aquatic vegetation, endangered species, competing uses, navigation, access, and other topics. The 2014 draft ocean plan does not alter the existing municipal and state jurisdictions regarding the granting of licenses and permits for aquaculture. The use of ocean plan maps and information and consultation between project proponents, *MarineFisheries,* and other EEA agencies in the siting of proposed facilities will provide a mechanism to identify issues that proponents should address in their project development process.

To better convey the Commonwealth's siting priorities with respect to ocean-based aquaculture projects, the fisheries work group recommended that new larger, offshore aquaculture projects should be addressed in a similar manner as other ocean-based development projects such as offshore sand for beach nourishment and cables and pipelines. In order to fully analyze the types of ocean-based aquaculture

facilities that could be reasonably foreseeable and their potential impacts to, or conflict with, SSU resources and concentrations of water-dependent uses, EEA will establish an advisory group to examine the issue of aquaculture siting and formal review under the ocean plan. Work by the advisory group will include examination and potential recommendations as to what appropriate review thresholds should be, what SSU resources and concentrations of water-dependent uses should be addressed in the plan's siting and performance standards, and what additional conditions, if any, should apply. The advisory group will also explore the benefits and feasibility of proactive identification and siting of potential areas for certain aquaculture project types.

Other Uses, Activities, and Facilities Allowed under the Ocean Sanctuaries Act and Fail-Safe Review

Other projects that are allowed under the Ocean Sanctuaries Act and may be of a scale to have potentially significant impacts include:

- Projects authorized under Chapter 91 and deemed to be of public necessity and convenience
- Municipal wastewater treatment discharges and facilities
- Operation and maintenance of existing municipal, commercial, or industrial facilities and discharges
- Channel and shore protection projects
- Improvements not specifically prohibited by the Oceans Sanctuaries Act

This 2014 draft plan affirms that for projects proposed within the planning area that are not specifically addressed by the ocean plan but allowed under the Ocean Sanctuaries Act, the EEA Secretary retains discretion under the MEPA statute and regulations to review these projects for any issue(s) deemed necessary and appropriate, based on information presented by the project proponent and agency or public comment. If a project is subject to review under the ocean plan through the Secretary's MEPA certificate, the scope shall indicate the applicable siting and performance standards. Reviewing agencies shall use the ocean plan and maps as the guidance for their review.

Chapter 3 - Plan Administration

The development of the 2009 Massachusetts Ocean Management Plan was guided by the goals of integrated management, effective stewardship and protection of marine ecosystems, support for sustainable uses and services, and adaptive management. To carry these goals forward in implementation, mechanisms were established to help ensure successful ocean plan execution and continued evolution. This document—the Draft Massachusetts Ocean Management Plan, September 2014—presents the first formal amendment of the 2009 ocean plan for public review and comment. This chapter details the administrative components of the 2014 draft ocean plan, highlighting progress since 2009 and describing key implementation components, the review and revision process, continued mechanisms for input and engagement with experts and stakeholders, and an approach for tracking and reporting on plan implementation.

Plan Implementation Components

This section describes key components of ocean plan implementation to date, which were developed pursuant to directives in the Oceans Act or to ensure effective administration of specific provisions in the 2009 ocean plan.

Secretarial Functions and Responsibilities

The Oceans Act confers upon the Secretary of the Executive Office of Energy and Environmental Affairs (EEA) oversight, coordination, and planning authority over the Commonwealth's ocean waters, resources, and development. The Act further stipulates that all state agency authorizations for structures, uses, or activities in state waters must be consistent with the ocean plan. In addition to coordinated agency review of projects, there is an important need to ensure that other agency actions related to ocean management—including policy development, scientific research, and regulatory decision-making—are in harmony with and advance the goals of the ocean plan.

In the 2009 ocean plan, the EEA Secretary designated an interagency ocean management team, chaired by the Office of Coastal Zone Management (CZM) and comprised of personnel from CZM, the Department of Environmental Protection's Wetlands and Waterways Program, the Department of Fish and Game's Natural Heritage and Endangered Species Program and Division of Marine Fisheries (*MarineFisheries*), and the Massachusetts Environmental Policy Act (MEPA) Office. This interagency team serves as a coordinating body, offering assistance and advice to the Secretary; coordinated project review; recommendations for validation and

synthesis of data used in the plan; and ocean-related policy and research support. The 2014 draft ocean plan affirms the importance of the interagency team in plan implementation and administration.

Implementing Regulations for the Ocean Plan

The Oceans Act requires the EEA Secretary to promulgate regulations to implement and administer the ocean plan. In August 2011, an advisory group consisting of a broad cross-section of stakeholders and interests was convened by EEA to assist in the rule-making function. Chaired by CZM, the advisory group held seven meetings, reviewing draft language and providing valuable input, guidance, and feedback. In April 2012, the draft regulations developed with the input from the advisory group were reviewed and endorsed by the Ocean Advisory Commission. After formal public comment and public hearings in March and April 2013, the final regulations were promulgated in August 2013. The regulations are contained in 301 CMR 28.00 et seq. and are provided in Appendix 2 of this document.

Incorporation into the Massachusetts Coastal Program

Another requirement of the Oceans Act is that the ocean plan be incorporated into the Massachusetts coastal zone management program. Under the federal Coastal Zone Management Act (CZMA), the National Oceanic and Atmospheric Administration (NOAA) has established a flexible framework that enables states to develop individual coastal management programs, with policies and approaches that meet their specific needs, within a framework that addresses national goals and objectives and meets standardized criteria. The Massachusetts coastal management program was approved by NOAA in 1978, and several years later the legislature established the Office of Coastal Zone Management within EEA.

The CZMA gives states the authority to review projects that require federal licenses and permits (and other federal activities) to ensure that they abide by state-defined enforceable coastal policies. This process is called federal consistency review. Formal incorporation of the ocean plan into the state's approved coastal management program is required for CZM to apply ocean plan standards in federal consistency review. In August 2011, after significant consultation with and preliminary review by NOAA, CZM submitted a formal request to incorporate the ocean plan and its enforceable policies into the Massachusetts coastal management program, and in September 2011, NOAA approved the program change. The enforceable standards of the ocean plan are listed in an appendix in the *Massachusetts Office of Coastal Zone Management Policy Guide - October 2011*, which is the official record of the state's coastal program policies and legal authorities.

Coordinated Project Review

Chapter 2 of this document details the ocean plan's management framework, which establishes three types of management areas (i.e., Prohibited, Wind Energy, and Multi-use) and describes management standards to protect special, sensitive, or unique (SSU) natural resources and important existing water-dependent uses. Under this framework, ocean plan performance standards are implemented through the administration of the Massachusetts Environmental Policy Act. Through MEPA review, the project proponent develops information necessary to characterize potentially affected resources and uses, evaluate siting alternatives, and describe measures taken to avoid, minimize, and mitigate potential project impacts. Because SSU resources and concentrations of water-dependent uses are not aligned exclusively with specific agency jurisdiction or sole expertise, the interagency team described in the Secretarial Functions and Responsibilities section above serves as the appropriate venue for coordinating agency review for projects subject to the ocean plan.

Since the release of the 2009 ocean plan, there have been three proposed projects subject to the plan's siting and performance standards: (1) a fiber-optic communications cable from Fairhaven to Tisbury by GPCS Fiber Communications, Inc.; (2) a pilot tidal energy project located in Muskeget Channel by the Town of Edgartown; and (3) a combined fiber-optic communications and electric cable bundle from Falmouth to Tisbury by Comcast and NSTAR. The interagency team provided coordinated review functions, including pre-application consultations with project proponents, review of MEPA filings, and individual agency permit and license issuance. Details on these projects and their review under the ocean plan are provided in the *Review of the Massachusetts Ocean Management Plan, January 2014*.

The 2014 draft ocean plan acknowledges the benefits and efficiencies of agency coordination and affirms the continued role of the interagency team in project review. For ocean-based projects that may be subject to plan jurisdiction, pre-application consultation with the interagency team is strongly encouraged. In pre-application consultation, agencies will assist proponents to determine whether the project is subject to MEPA review and ocean plan jurisdiction. Agencies will also provide additional guidance and recommendations as to what documentation and characterization will be required by the proponent in the regulatory review process. Upon written request, the Secretary (or his or her designee) will provide project proponents with an advisory opinion regarding the applicability of the ocean plan to a proposed project.

In the preparation of an Environmental Notification Form (ENF) under MEPA, project proponents are required to document: (1) whether they are subject to the

ocean plan based on criteria established in MEPA thresholds and the ocean plan and (2) any potential impacts of the project to SSU resources or areas of concentrations of water-dependent uses. In the ENF review, agencies will assess the project's potential impacts to protected resources and uses and provide comments to the Secretary that describe the type and extent of information and analysis that must be developed and submitted as part of an Environmental Impact Report (EIR) so that the project's conformance with the ocean plan's management standards can be evaluated. As explained in Chapter 2 of this document, the Secretary retains discretion under the Oceans Act and MEPA to review a project for any issue deemed necessary and appropriate, based on information presented by the project proponent and agency or public comment.

In the EIR review, agencies will assess the information submitted, including project alternatives and measures to be taken to avoid, minimize, and mitigate impacts to SSU resources or areas of concentrations of water-dependent uses as well as public benefits of the project for conformance with the ocean plan's siting and performance standards.

In the issuance of the final MEPA Certificate, the Secretary will consider agency and public comments and analysis from the MEPA Office, and determine the project's conformance with the ocean plan's management standards. The Oceans Act requires that all agencies must ensure that all certificates, licenses, permits, and approvals for any proposed project subject to the ocean plan are consistent, to the maximum extent practicable, with the management standards and conditions contained in Chapter 2 of the ocean plan and its implementing regulations. The Secretary's MEPA Certificate will therefore direct each agency to include in its Section 61 Findings a determination that all feasible measures have been taken such that its approval of the project is consistent with the ocean plan and implementing regulations. In its Section 61 Findings, each agency shall specify: any measures required by the project proponent to meet ocean plan requirements, the entity responsible for funding and implementing such measures, and the anticipated implementation schedule needed to ensure that the measures shall be implemented as appropriate to prevent or avoid impacts.

Ocean Development Mitigation Fee and Ocean Resources and Waterways Trust

The Oceans Act includes a requirement that any project subject to the ocean plan shall be assessed an ocean development mitigation fee as established by the EEA Secretary. Section 301 CMR 28.06 of the ocean plan regulations, promulgated in 2013, addresses the ocean development mitigation fee and establishes that the

purpose of the fee is to compensate the Commonwealth for unavoidable impacts of ocean development projects to the broad public interests and rights in the lands, waters, and resources of the Massachusetts Ocean Management Planning Area (planning area), as well as to support the planning, management, restoration, or enhancement of marine habitat, resources, and uses pursuant to the Oceans Act. The Oceans Act and its implementing regulations state that commercial or recreational fishing permits and licenses are not subject to the fee.

The 2013 regulations require the Secretary to promulgate a fee structure for ocean development projects that reflects differences in the scope and scale of projects and their effects on protected resources or uses. With input from an advisory working group comprised of representatives from the regulated community (including an energy utility and a legal firm representative), commercial fishing and environmental interests, and state agencies, a proposed fee structure and accompanying guidance was developed. The 2014 draft ocean plan contains the proposed fee structure and provides specifics on the administration of the fee, as described below.

Using the three defined activity classes and the guidelines as to the proposed project's scope, scale, and effects contained in the fee structure listed in Appendix 6 of this document as guidance, project proponents will provide information and analysis to inform the determination of the fee in MEPA in the Draft EIR filing, or in the case of a Single EIR, in the Expanded ENF. The information required by MEPA in an EIR submittal should be utilized to determine the proposed fee class by the project proponent. Such information includes the detailed description and analysis of:

- The nature and location of the project;
- Project alternatives;
- Impacts of the project and its alternatives, including both short-term and long-term impacts for all phases and cumulative impacts;
- Measures and management techniques to be taken to avoid, minimize, and mitigate potential impacts to the environment, water-dependent uses, and public trust interests;
- Public benefits of the project, and other mitigation proposed, separate and distinct from the ocean development fee;
- Proposed Section 61 Findings; and
- Information for a Public Benefits Determination, including the nature of the tidelands affected by the project and the public benefit of the project.

A proponent may request a payment plan for the fee or a reduction of the fee based on a clear demonstration of need or hardship. The MEPA filing shall include a

statement of the specific circumstances that constitute the need or hardship, and the relief requested.

In comments on the MEPA EIR, agencies, stakeholders, and the public may concur with the proponent's proposed fee class or recommend a different class. Based on the MEPA filing, comments received, the evaluation of the proposed project and its effects, public benefits, other mitigation proposed, and other applicable information, the Secretary shall issue a determination of the final fee to be referenced in the final MEPA Certificate. As administrator of the fee, the Secretary retains broad discretion in determining the fee amount and any conditions necessary to ensure that the "as-built" project is consistent with the project as described in the final MEPA EIR filing.

The Oceans Act created a new ocean resources and waterways trust to receive all proceeds from ocean development mitigation fees as well as appropriations or other credits. In Fiscal Year 2009, the trust fund was established by the Executive Office for Administration and Finance. The Oceans Act identifies the EEA Secretary as trustee and contains provisions pertaining to expenditures from the trust. The 2009 ocean plan provided additional direction on the management of the trust. Based on the statutory and management requirements contained in the Oceans Act and the 2009 ocean plan, EEA established the *Ocean Resources and Waterways Trust Implementation Guidelines* to direct the administration and management of the trust (Appendix 7). Expenditures from the fund are directed to the restoration, enhancement, or management of marine habitat and resources impacted by an ocean development project. Funds derived from impacts to public navigation by an ocean development project will be used for navigational improvements. Funds derived from impacts to fisheries resources are targeted for use for fisheries restoration and management programs. Other funds credited to the trust fund are to be used only for environmental enhancement, restoration, and management of ocean resources and uses generally consistent with the Oceans Act and the ocean plan. To date, there have been three deposits to the trust. The amount and sources of these funds are summarized in Appendix 8 of this document, which also details the six projects supported by the trust.

The 2009 ocean plan contained the following guidance relative to royalty fees that may be established for renewable energy projects:

- For pilot/community scale renewable energy projects, the renewable energy benefits (e.g., energy, jobs) will stand for any royalty fees.
- For commercial-scale renewable energy projects, as part of any request for proposals and related contractual processes, the Commonwealth will negotiate royalty fees to be made as annual payments for a percentage of

total energy production. The royalty shall be matched with a commensurate payment—or combination of energy royalty and benefits of equivalent value (e.g., energy, jobs, municipal improvements)—to the host community (or communities), as defined in Chapter 2 of the ocean plan.

- For both pilot/community and commercial-scale projects, nothing in the ocean plan changes, nor should be construed to change, the authority of a municipality to negotiate impact fees or other community benefits with renewable energy project developers.

Massachusetts Ocean Resource Information System (MORIS)

A key objective of the ocean plan, as detailed in its Science Framework, is to enhance data availability and inform managers, stakeholder, and the public of science- and data-related advancements. In February 2011, CZM released the updated version of the Massachusetts Ocean Resource Information System (MORIS), an online mapping tool that can be used to search and display spatial data pertaining to the Massachusetts coastal zone. Users can interactively view various data layers over different backdrops (aerial photographs, political boundaries, bathymetry, or other data including Google basemaps), create and share maps, and download the data for use in a Geographic Information System (GIS). A stand-alone version of MORIS that contains all of the maps in the ocean plan is available at maps.massgis.state.ma.us/map_ol/mass_ocean_plan.php, and a MORIS user's guide can be found at: maps.massgis.state.ma.us/map_ol/moris_users_documentation.pdf.

Plan Review

The Oceans Act and the ocean plan regulations require the review of the plan and its components—including the Baseline Assessment and enforceable provisions—at least once every five years. In January 2013, EEA initiated a formal review and update of the 2009 ocean plan, beginning with a comprehensive assessment of progress and performance to achieve the requirements and commitments established by the Oceans Act and the ocean plan. In addition to public workshops and a formal public comment period, the review process also sought the views and opinions of the members of the state's Ocean Advisory Commission and Ocean Science Advisory Council. SeaPlan (an independent, nonprofit ocean science and policy group formerly known as the Massachusetts Ocean Partnership) interviewed and surveyed current and previous members of the commission and council to capture their perspectives on the development, implementation, and future revision of the 2009 ocean plan.

The results of this assessment were released in the document, *Review of the Massachusetts Ocean Management Plan, January 2014*, which provides a summary of the background and context for

ocean planning in Massachusetts and reports on the ocean plan development process, including the policies and management framework, plan administration and implementation, and work on science and data priorities identified in the 2009 ocean plan's Science Framework. While not all of the plan components have been fully tested and plan implementation is still ongoing, the review provides important insights into the content of the 2009 ocean plan, as well as a look at the progress and performance of the plan's implementation. See www.mass.gov/eea/mop for an online copy of *Review of the Massachusetts Ocean Management Plan, January 2014*.

Revisions to the Ocean Plan

The provision that the ocean plan be reviewed at least every five years makes the legislative intent of the Oceans Act clear: a comprehensive ocean management plan is not to be a static, standing document; instead it should be regularly revisited and revised. The 2009 ocean plan details two different types of plan modifications and the processes associated with these changes—plan updates and plan amendments. The ocean plan implementing regulations codified the standards for plan updates and amendments at 301 CMR 28.07. These two types of plan revisions are summarized below.

Plan Updates

An ocean plan update is a type of revision that is necessary for effective and efficient administration, but is not of the scope or scale of an amendment (which is described below). The ocean plan implementing regulations allow for the following changes to be made through an update:

- Corrections to address errata and technical discrepancies or errors, or to clarify intent or meaning;
- Updated data and information on the spatial extent or further characterization of SSU resource areas or areas of concentrations of water-dependent uses;
- Minor shifts in existing management area boundaries; and
- Other adjustments that do not result in significant changes to the management framework or geographic extent of the ocean plan.

The regulations also contain guidelines for the Secretary to conduct the ocean plan update process, including the submission of a plan update request that includes: a justification and rationale for the need for the update; a strategy to ensure that the update conforms with data standards and processes; and a plan to secure input from EEA agencies, the Ocean Advisory Commission, and the Ocean Science Advisory Council. A proposed update must be noticed in the *Environmental Monitor* and subject to a 30-day public review and comment period. After the close of the public

comment period, the Secretary will issue a final decision on the proposed update, which would then be noticed in the *Environmental Monitor*.

Plan Amendments

According to the regulations, an ocean plan amendment is required for changes to substantive management elements of the ocean plan, including:

- Revision of existing or creation of new management area locations or boundaries, excepting minor adjustments;
- Substantial revision of existing or creation of new management standards;
- Identification of new or removal of current protected SSU resource areas;
- Identification of new or removal of current protected areas of concentrations of water-dependent uses; or
- Other changes that would result in significant alteration to the management framework or geographic extent of the plan.

The 2014 draft ocean plan is a formal proposed amendment to the 2009 ocean plan. Consistent with the regulatory guidelines, the amendment process was initiated with a public notice in the May 22, 2013, *Environmental Monitor*, which announced the review and amendment of the 2009 ocean plan. Public hearings were held in Boston on June 6, 2013; in New Bedford on June 17, 2013; in Gloucester on June 18, 2013; and in Barnstable on June 19, 2013. Input and advice on the scope and development of the plan amendment were provided by the Ocean Advisory Commission at meetings held in April 2013, September 2013, January 2014, and September 2014. Similarly, input and advice on the update of the Baseline Assessment and in the review of science-related elements of the plan amendment were provided by the Ocean Science Advisory Council at meetings held in May 2013, October 2013, February 2014, and September 2014.

On September 24, 2014, the availability of this draft plan amendment for public review and comment was noticed in the *Environmental Monitor*. Public hearings have been scheduled for:

- **North Shore** - October 8, 5:30 p.m.-7:30 p.m. at the Ipswich Public Library, Collins Room, 25 N. Main Street, Ipswich, MA 01938.

- **Cape Cod** - October 14, 5:00 p.m.-7:00 p.m. at the Heritage House Hotel, Chauncy's Room, 259 Main Street, Hyannis, MA 02601.

- **South Coast** - October 20, 5:30 p.m.-7:30 p.m. at the New Bedford Whaling Museum, Memorial Theater, 18 Johnny Cake Hill, New Bedford, MA 02740.

- **Islands** - October 22, 5:00 p.m.-7:00 p.m. at the Katharine Cornell Theater, 54 Spring Street, Vineyard Haven, MA 02568.

- **Boston Harbor and South Shore** - October 27, 5:30 p.m.-7:30 p.m. at the Executive Office for Energy and Environmental Affairs, 100 Cambridge Street, 2nd Floor Rooms C-D, Boston, MA 02114.

The 60-day public comment period closes at 5:00 p.m. on Tuesday, November 25, 2014. To finalize the plan amendment process, a final amended ocean plan will be promulgated by the Secretary and will be filed with the House of Representatives and Senate clerks. After the release of the final plan, the regulations will be revised as necessary.

Stakeholder Input, Expert Advice, and Partnerships

An important requirement of the Oceans Act and a fundamental tenant of the ocean planning process is a strong program for input from and engagement with experts, stakeholders, and the public. The 2014 draft ocean plan affirms the importance of this approach and describes key aspects of moving this work forward.

Ocean Advisory Commission and Ocean Science Advisory Council

The Ocean Advisory Commission is a formal consultative body created by the Oceans Act to assist the Secretary in the development of the ocean plan. It is comprised of 17 members representing communities and stakeholder interests, legislators, and public agencies, with mandated composition and terms.

The Ocean Science Advisory Council was established by the Oceans Act to provide support and advice on the science information compiled for the ocean plan. The Ocean Science Advisory Council is made up of nine members from institutions or interests specified in the statute.

The Ocean Advisory Commission and the Ocean Science Advisory Council both played very strong roles in the development of both the 2009 ocean plan and the 2014 draft ocean plan. EEA will continue to look to these formal bodies for stakeholder advisory and science and technical expertise in matters pertaining to the ongoing implementation of and future revisions to the ocean plan, as well as to ongoing efforts related to the Northeast regional ocean planning initiative, described

later in this chapter. These two groups will provide key forums for bringing Massachusetts input, advice, and concerns into the regional ocean planning process by discussing new and emerging ocean planning and policy issues. Meetings of the Ocean Advisory Commission and the Ocean Science Advisory Council are public and will continue to be noticed appropriately.

Interstate, Federal, and Tribal Government Coordination

In addition to direct agency-to-agency coordination and communication, several regional entities serve as key vehicles for dialogue, collaboration, and consultation with other states, federal government agencies, and tribes on issues related to ocean planning. Major interstate, federal, and tribal government ocean planning coordination efforts that involve the Commonwealth of Massachusetts are described below.

Massachusetts is an active participant in the Northeast Regional Ocean Council (NROC), a state and federal partnership that provides a forum for coordination and collaboration on regional approaches to balance resource use and conservation in the Northeast. NROC was formed in 2005 by the Governors of the New England states, and in recognition of the importance of the national role in regional issues, NROC was expanded to include federal agencies. NROC works to augment the functions and activities of existing entities in the region and to build upon current state, multi-state, and federal governance and institutional mechanisms to improve management of ocean and coastal resources. NROC serves as an important resource for and contributor to the Northeast regional ocean planning initiative. In this role, NROC greatly benefits the Commonwealth by expanding the scope and extent of data and information available on marine resources and uses and by utilizing and building on stakeholder engagement efforts. Examples of these benefits include new data and maps on recreational boating, commercial vessel traffic, and commercial fishing activity developed through this partnership. NROC also sponsored workshops with various ocean-based industries in 2012 to learn more about key issues facing different sectors in New England, anticipate changes in coming years, and discuss the role of regional ocean planning to address issues and opportunities. More information on NROC is available at www.northeastoceancouncil.org.

The data and information developed by NROC and its members and partners directly support the efforts of the Northeast Regional Planning Body (Northeast RPB), which has the responsibility of developing an ocean management plan for New England. Convened in November 2012, under the *National Policy for Stewardship of the Ocean, Our Coasts, and the Great Lakes*, the Northeast RPB includes representatives from the six New England states, 10 federal agencies, 10 federally recognized tribes, and the New England Fishery Management Council. CZM

Director Bruce Carlisle and *MarineFisheries* Director Paul Diodati serve as representatives for the Commonwealth. The Northeast RPB is not a regulatory body and has no authority to create new regulations. Rather, its mandate is to develop a regional ocean plan and associated products to guide future agency decision-making, consistent with existing authorities. Through meetings in November 2012, April 2013, and January 2014, and with public and stakeholder review and input, the Northeast RPB worked to develop two key products: (1) a charter that describes the purpose of the Northeast RPB and operational roles and responsibilities of its members, and (2) a framework that identified the goals, objectives, actions, and products to build a regional ocean plan by early 2016. Work is underway by the Northeast RPB on a number of projects that will advance the understanding of spatial and other information on water-dependent uses and marine ecosystems. The projects are collaborative efforts that include scientists, fishermen, boaters, and environmental groups, as well as leaders in the shipping, aquaculture, and energy industries.

While all of the Northeast RPB projects are broadly applicable to the Massachusetts Ocean Management Plan, several in particular help to address the plan's science priorities. One such effort is a project to map commercial fisheries in New England that began in 2012. Using existing data available for certain fisheries, map products were developed and discussed with the fishing industry, scientists, and managers, and between August 2012 and July 2013, more than 50 gatherings were held throughout New England to obtain advice and input to further develop maps of commercial fishing activity. A report on the initial phase of this effort is available on the Northeast RPB website (www.neoceanplanning.org), and work will continue to produce more complete information. Another important project is on natural resource characterization, with work underway to: (1) compile both observational and model-based information on the abundance and distribution of marine mammals, sea turtles, birds, and fish, and (2) examine options for a regional approach to identify areas of ecological importance. In June 2014, the Northeast RPB convened a natural resources workshop where approximately 125 participants from tribes, federal and state agencies, industry groups, academic institutions, and nonprofit organizations, as well as interested citizens, provided input on these two aspects of the natural resource characterization project.

Massachusetts is also a member of the Gulf of Maine Council on the Marine Environment. This regional organization was established in 1989 by the Governments of Nova Scotia, New Brunswick, Maine, New Hampshire, and Massachusetts to foster cooperative actions within the Gulf of Maine watershed. Its mission is to maintain and enhance environmental quality in the Gulf of Maine to allow for sustainable resource use by existing and future generations. Among other functions and programs of the

Gulf of Maine Council, it serves as a forum to share key information, knowledge, and data on ocean planning initiatives in both the United States and Canada. The council provides a unique opportunity to promote cross-border coordination and collaboration, track and exchange information on ocean planning strategies and activities, and share information and knowledge on best practices, tools and techniques, and data on marine natural systems and human uses.

Formed in 2008, the Northeastern Regional Association of Coastal and Ocean Observing Systems (NERACOOS) is a regional nonprofit organization that leads and coordinates the development, implementation, operation, and evaluation of a sustained, regional coastal ocean observing system for the northeast United States and Canadian Maritime provinces, as part of the United States Integrated Ocean Observing System. NERACOOS develops, assesses, and disseminates important data and data products on a multitude of ocean conditions and parameters, including current observations, forecasted conditions, and information on average weather and ocean conditions between 2001 and the present to examine trends in climate patterns. Massachusetts serves on the NERACOOS board and on its Strategic Planning and Implementation Team.

These regional forums have and will continue to benefit the Commonwealth by providing key inter-governmental coordination and consultation opportunities, expanding stakeholder engagement efforts, and increasing the scope and extent of data and information available on marine resources and uses. Massachusetts will seek to ensure that these efforts continue to support and can be integrated into the state's ocean plan, to the maximum extent practicable.

SeaPlan (Formerly the Massachusetts Ocean Partnership)

The Massachusetts Ocean Partnership, an independent organization of ocean stakeholders, was a key partner in the development of the 2009 ocean plan. A memorandum of understanding (MOU) between EEA and the Massachusetts Ocean Partnership outlined the partnership's role in implementing a stakeholder and public input processes and for filling key data and science gaps during plan development. Through these efforts, the partnership supported a robust and extensive stakeholder involvement process, ensuring that the ocean plan management strategies were based on sound public input. The Massachusetts Ocean Partnership also directly invested in foundational work that, among other things, examined various ocean planning framework models from around the world, assessed the potential compatibilities between uses and among uses and resources in state waters, provided support for key improvements to MORIS that built on an open source mapping engine platform (GeoServer) to provide access to data about Massachusetts coastal ocean areas and

resources and a repository for all the data and maps contained in the ocean plan, and advanced efforts to address identified data and science needs (described more below).

In October 2011, the Massachusetts Ocean Partnership formally changed its name to SeaPlan as part of a transition to an independent nonprofit organization that specializes in science-based, stakeholder-informed, coastal and marine spatial planning around the nation and the globe. SeaPlan provided key support in the development of the 2014 draft ocean plan. With its survey of the members of the Ocean Advisory Commission and the Ocean Science Advisory Council, SeaPlan captured key perspectives on the development, implementation, and future revision of the 2009 ocean plan. SeaPlan has also provided assistance in the revision and advancement of the ocean plan performance framework, described below and in the Science Framework of Volume 2. SeaPlan will also assist with facilitation and logistical support for the public hearings on the 2014 draft ocean plan and is working in support of the regional ocean planning initiative in the Northeast, as well as reaching out to assist other areas conducting coastal and marine spatial planning.

Science and Technical Experts

Both the 2009 ocean plan and the 2014 draft ocean plan are based on the best available science and information, and the Commonwealth is committed to maintaining a strong science foundation for future ocean plan development. The best available information comes from sources both within and outside Massachusetts state government. Through the technical work groups, scientists and subject matter experts assist in the identification and characterization of important trends in ocean resources and uses, help form recommendations for future science and data priorities, provide direct input on data and information, and in many cases, provide direct access to valuable datasets. Beyond the technical work groups, EEA and its agencies will rely on existing partnerships to ensure that ongoing monitoring and assessment efforts continue to provide critical data streams for resource assessment and use characterization. EEA will also seek new collaboration opportunities with other institutions and agencies to address the short- and long-term science priorities outlined in the Science Framework.

Monitoring and Evaluation Framework for Progress and Performance Assessment

The Oceans Act requires that the ocean plan be updated to adapt to changing ocean conditions, availability of new science and better information, evolving policy goals, emerging needs, and increased experience in implementation. The 2009 ocean plan included a list of provisional indicators selected by a panel of experts to evaluate plan effectiveness

and track environmental and socioeconomic conditions in the planning area, along with a commitment that EEA will periodically review these indicators to ensure they are relevant and useful. In addition, a priority of the 2009 ocean plan's Science Framework was the development of a plan performance framework to: (1) identify, track, and assess performance indicators that measure progress in administration and implementation of the ocean plan, and (2) identify ocean resources and uses and track/monitor trends and changes in their condition, state, or health.

The 2014 draft ocean plan proposes an updated Monitoring and Evaluation Framework that builds off of the preliminary indicators in the 2009 ocean plan and provides a structure for monitoring, evaluating, and updating the ocean plan. The development of this proposed updated framework was informed by SeaPlan in consultation with Charles Ehler, author of the new United Nations Educational, Scientific and Cultural Organization's Intergovernmental Oceanographic Commission publication, *A Guide to Evaluating Marine Spatial Plans (October 2014).* The updated Monitoring and Evaluation Framework includes two tracks:

- **Track 1: Management and Administration** - Evaluates progress and performance in implementing management/administration measures and accomplishing ocean plan goals.

- **Track 2: Ocean Conditions and Uses** - Assesses changes and trends in ocean conditions and uses (i.e., state of the system) within the planning area.

Diagram 1 is a graphical representation of how the Monitoring and Evaluation Framework is integrated into the ocean plan review and update process, and Diagram 2 provides details on the development and implementation of the monitoring and evaluation components of each track.

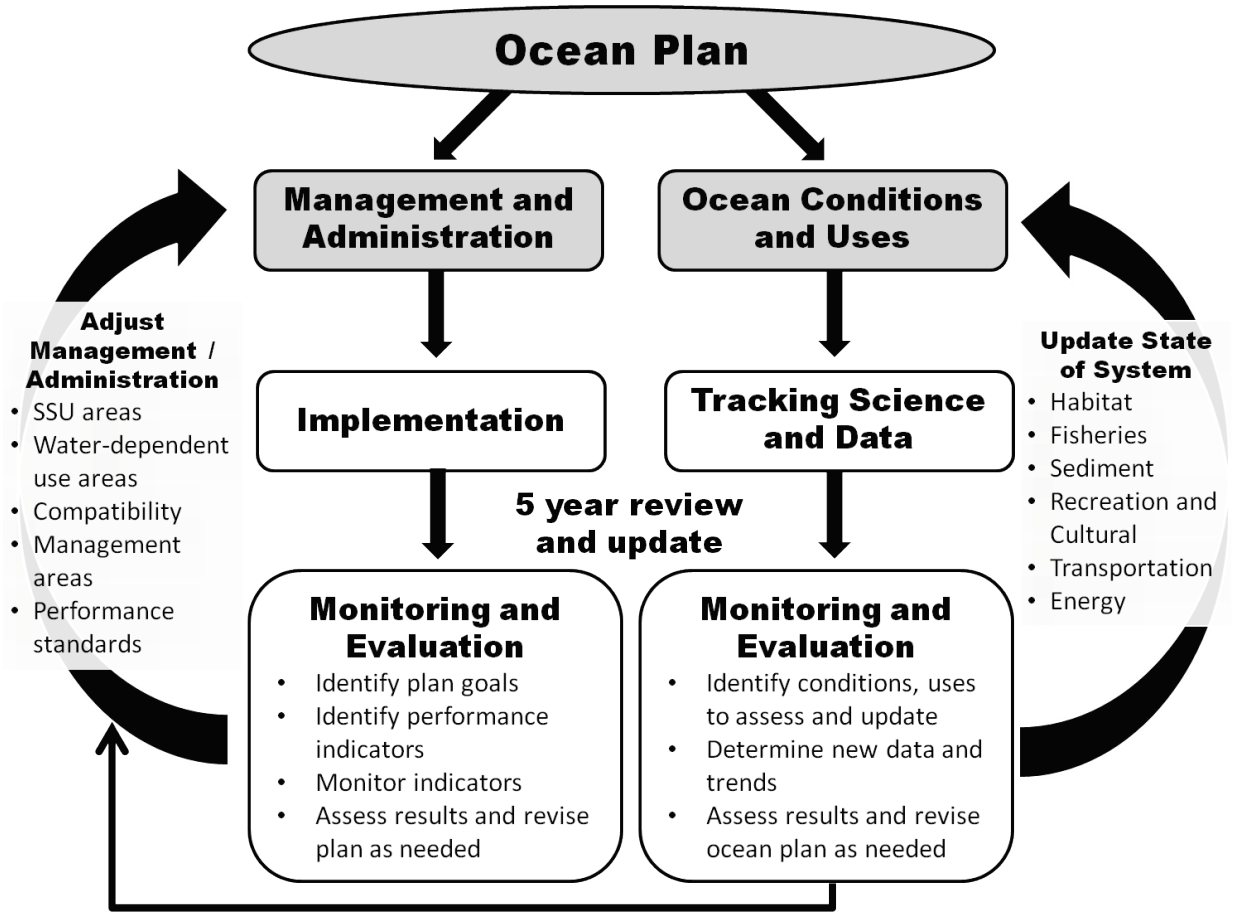

Diagram 1. Graphical representation of the proposed Monitoring and Evaluation Framework

Track 1: Management and Administration

This track monitors the progress and effectiveness of implementation of ocean plan management and administration elements. More specifically, this track is designed to assess, evaluate, and help to identify needs for potential revisions to the ocean plan's: performance and siting standards, SSU resource areas and areas of concentrations of water-dependent uses, and designation of management areas. The development and implementation of this track consists of four steps: (1) identify relevant ocean plan goals, (2) identify indicators and metrics that measure effectiveness in accomplishing goals, (3) monitor indicators, and (4) assess results to inform the ocean plan revision process (see Diagram 2).

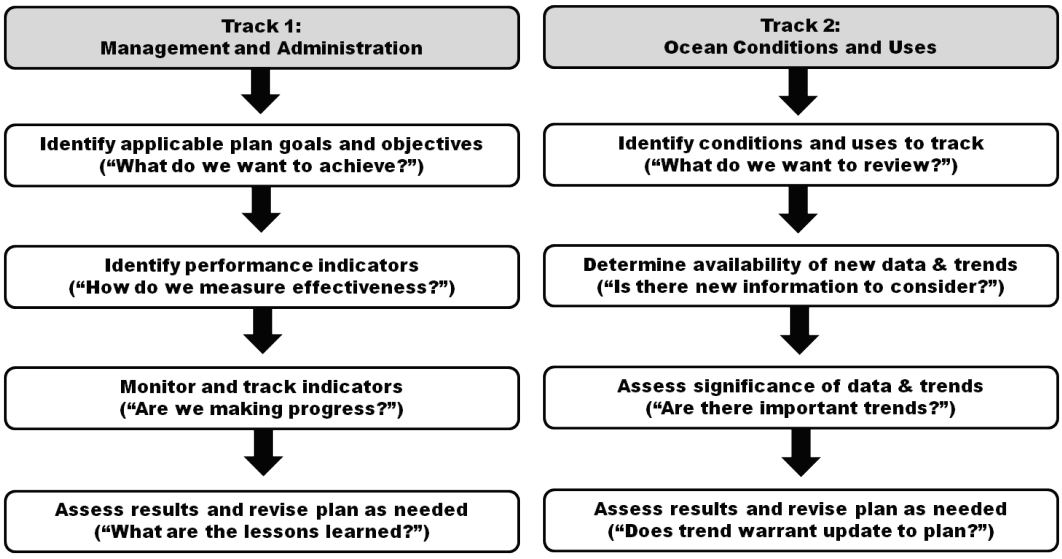

Diagram 2. Proposed Monitoring and Evaluation Framework, highlighting steps to develop and implement the framework for both tracks

The process of identifying indicators and metrics that will measure effectiveness in accomplishing goals is difficult. As detailed in the Science Framework as a top priority, more work is necessary to further examine, assess, and select indicators and metrics, and EEA will work the Ocean Advisory Commission, the Ocean Science Advisory Council, the technical work groups, and stakeholders to develop and finalize an operational Monitoring and Evaluation Framework. Two priority criteria should be used to identify and select indicators: (1) strength of the indicator in linking the ocean plan goals and objectives to the implementation of management and administration elements (i.e., can the indicator measure the important aspects of whether the ocean plan goals and objectives are achieved through implementation of the management and administration elements?); and (2) ability of the indicator to be measured or described (i.e., are data readily available or reasonably attainable?). To illustrate Track 1, a list of ocean plan goals and six potential indicators and metrics are provided in Table 3-1.

Table 3-1. Ocean plan goals and examples of potential indicators and metrics for evaluating performance and efficacy

Plan Goal(s)	Indicator(s)	Metrics
Protect SSU resources based on a first generation of an ecosystem-based management (EBM) approach.	SSU resources are protected, evaluated, and, where applicable, revised using current best practices for EBM.	- SSU resources considered and protected when siting projects and uses. - SSU areas refined using new data and best practices. - Ongoing assessment of other EBM efforts and best practices.

Plan Goal(s)	Indicator(s)	Metrics
Identify use areas and promulgate management measures that streamline permitting.	Permitting process and outcomes are enhanced (e.g., efficiency, final outcome).	- Qualitative analysis of permitting process and outcomes (agency staff and project proponents). - Assessment of benefits over prior process (knowledge base, efficiency of administrative process, project appeal rate).
Develop an adaptive framework that results in science and research in response to identified management and policy issues.	Availability of new data is assessed and integrated into the plan in accordance with relevant provisions of the plan. Science Framework priorities are identified and initiated/ implemented as feasible by EEA/CZM, other state agencies, or outside partners.	- Assessment of status/trends/new data and potential revisions to SSU areas (see flowchart) - New data are integrated into the plan in accordance with relevant provisions of plan. - Number of priorities in Science Framework initiated and/or implemented [status metric].
Develop an adaptive framework that continues to engage stakeholders in future plan iterations.	Level of stakeholder involvement and engagement regarding the planning process. Current method of stakeholder engagement provides productive feedback	- Feedback from stakeholders (Ocean Advisory Commission, Ocean Science Advisory Council, industry, public, other stakeholders). - Number of Ocean Advisory Commission, Ocean Science Advisory Council, stakeholder meetings; attendance at meetings [status metric]. - Assessment of stakeholder engagement methods.
Develop an integrated ocean management plan that achieves balance through the designation of areas for uses and activities. Identify use areas and promulgate management measures that: (1) identify locations and performance measures for allowable uses and infrastructure, and (2) minimize conflicts with/ impacts to existing uses/ resources.	Plan accommodates existing, new, and emerging allowable uses and infrastructure (e.g., recreational boating; transmission infrastructure; offshore aquaculture; sand and gravel extraction).	- Spatial and management measures for existing, new, and emerging allowable uses and infrastructure considered by EEA/CZM. - Presence of process to consider new and emerging uses in coordination with existing uses. - Number of permit applicants and number of permits approved [status metric].

Track 2: Ocean Conditions and Uses

This track monitors changes and trends in ocean resource conditions and uses to enable the ocean plan to adapt to evolving knowledge and understanding of the ocean environment. More specifically, this track will provide a framework for identifying new data and noteworthy trends on conditions and uses (e.g., environmental, ecological, economic, and socio-cultural, etc.) to inform revisions of SSU resources, concentrations of water-dependent use areas, and management actions. The development and implementation of this track consists of these steps: (1) identify relevant ocean conditions and uses to track, assess, and update; (2) determine the availability of new data and information; (3) identify trends in conditions and uses; and (4) assess results and revise the ocean plan as needed (see Diagram 2).

Examples of relevant ocean conditions and uses to assess and update during the ocean plan review process are provided below. The six broad categories and the topics within them align with the technical work groups convened to review the best available scientific data and information and to identify and characterize important trends in ocean resources and uses.

1. Habitat

- Wetlands (eelgrass, intertidal flats)
- Sea turtles
- Marine mammals
- Avifauna

2. Fisheries

- High commercial fishing effort and value
- Concentrated recreational fishing
- Important fish resources
- Aquaculture

3. Seafloor and Sediment Resources

- Hard/complex seafloor
- Surficial sediment and sediment deposits
- Artificial and biogenic reef structures
- Wrecks and obstructions

4. Recreational and cultural services

- Boating
- Fishing

- Marine beaches
- Diving
- Wildlife viewing
- Public access infrastructure
- Land use and scenic landscape
- Archaeological resources and cultural landscape
- Tribal engagement
- Heritage infrastructure

5. Transportation and navigation

- Commercial shipping, transportation, and navigation
- Commercial fishing navigation and routing
- Concentrated recreational boating

6. Energy and Infrastructure

- Energy generating facilities
- Energy consumption
- Transmission
- Offshore/marine renewable energy
- Wastewater, stormwater, and industrial facilities discharges
- Desalination facilities

EEA would work with the technical work groups and the Ocean Science Advisory Council to apply the following questions to each topic above:

- Are new data or information available for the topic (e.g., environmental, ecological, economic, and socio-cultural, etc.)?
- Do the data or information support a potential change to SSU resource areas or concentrations of water-dependent uses areas?
- Do the data or information reveal any significant or noteworthy trends?
- Is there a connection between the trend or change and the ocean plan management standards?
- Is this connection significant enough to warrant revisions or updates to the management standards?

Using the questions above, a decision support flow chart could be developed to guide the assessment of changes in ocean conditions and uses and their relationship to the management areas and standards in the ocean plan. As detailed in the Science Framework, more work is necessary to examine these "state of the system"

questions, assess the connection(s) to the management framework in the ocean plan, and determine the proper sequencing and outcomes in a decision support flow chart.

Appendix 1 - The Oceans Act of 2008

Chapter 114 of the Acts of 2008 - AN ACT RELATIVE TO OCEANS. [As modified by Chapter 131, Section 91 of the Acts of 2010].

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same as follows:

SECTION 1. Chapter 10 of the General Laws is hereby amended by inserting after section 35GG the following section:-

Section 35HH. There shall be established and set up on the books of the commonwealth a separate fund to be administered by the secretary of energy and environmental affairs, as trustee, in consultation with the department of environmental protection, to be known as the Ocean Resources and Waterways Trust Fund. There shall be credited to the fund any revenue from appropriations or other monies authorized by the general court and specifically designated to be credited to the fund, any appropriation or grant explicitly made to the fund and any income derived from the investment of amounts credited to the fund and the proceeds from any ocean development mitigation fees established pursuant to section 18 of chapter 132A. The priority for use of funds derived from compensation or mitigation for ocean development projects shall be to restore or enhance marine habitat and resources impacted by the project for which the compensation or mitigation shall have been received. The funds derived from compensation or mitigation related to public navigational impacts shall be dedicated to public navigational improvements; provided, however, that any funds for the enhancement of fisheries resources shall be directed to conduct fisheries restoration and management programs. Any other amounts credited to the fund shall be used, without further appropriation, only for the purposes of environmental enhancement, restoration and management of ocean resources by the secretary pursuant to section 4C of chapter 21A. No expenditure from the fund shall cause the fund to be in deficiency at the close of a fiscal year. Monies deposited in the fund that are unexpended at the end of the fiscal year shall not revert to the General Fund and shall be available for expenditure in the subsequent fiscal year.

SECTION 2. Chapter 21A of the General Laws is hereby amended by inserting after section 4B the following section:-

Section 4C. (a) The ocean waters and ocean-based development of the commonwealth, within the ocean management planning area described in this section, shall be under the oversight, coordination and planning authority of the secretary of energy and environmental affairs, hereinafter referred to as the secretary, in accordance with the public trust doctrine. Notwithstanding any general or special law to the contrary, the secretary, in consultation with

the ocean advisory commission established pursuant to subparagraph (c) and the ocean science advisory council established pursuant to subparagraph (d), shall develop an integrated ocean management plan, which may include maps, illustrations and other media. The plan shall: (i) set forth the commonwealth's goals, siting priorities and standards for ensuring effective stewardship of its ocean waters held in trust for the benefit of the public; and (ii) adhere to sound management practices, taking into account the existing natural, social, cultural, historic and economic characteristics of the planning areas; (iii) preserve and protect the public trust; (iv) reflect the importance of the waters of the commonwealth to its citizens who derive livelihoods and recreational benefits from fishing; (v) value biodiversity and ecosystem health; (vi) identify and protect special, sensitive or unique estuarine and marine life and habitats; (vii) address climate change and sea-level rise; (viii) respect the interdependence of ecosystems; (ix) coordinate uses that include international, federal, state and local jurisdictions; (x) foster sustainable uses that capitalize on economic opportunity without significant detriment to the ecology or natural beauty of the ocean; (xi) preserve and enhance public access; (xii) support the infrastructure necessary to sustain the economy and quality of life for the citizens of the commonwealth; (xiii) encourage public participation in decision-making; (xiv) and adapt to evolving knowledge and understanding of the ocean environment; and (xv) shall identify appropriate locations and performance standards for activities, uses and facilities allowed under sections 15 and 16 of chapter 132A. The division of marine fisheries, pursuant to chapter 130 and any other applicable general or special law, shall have sole responsibility for developing and implementing any fisheries management plans or fisheries regulations. Marine fisheries shall be managed in compliance with the applicable rules and regulations of the division of marine fisheries and federal or interstate fishery management plans issued pursuant to said chapter 130 or any other applicable general or special law and shall be integrated, to the maximum extent practicable, with an ocean management plan.

(b) An ocean management plan shall include any waters and associated submerged lands of the ocean, including the seabed and subsoil, lying between the line designated as the "Nearshore Boundary of the Ocean Management Planning Area", which is depicted on a plan dated January 31, 2006, prepared by the office of coastal zone management and maintained at the executive office of energy and environmental affairs and with the clerks of the house and the senate, and the seaward boundary of the commonwealth, as defined in 43 U.S.C. § 1312. An ocean management plan may take into account the different regional characteristics of the commonwealth's waters. A plan shall include existing municipal, state and federal boundaries and may include recommendations for clarifying those boundaries.

(c)(i) There shall be an ocean advisory commission to assist the secretary in developing the ocean management plan. The commission shall consist of 3 members of the senate, 1 of whom shall be appointed by the minority leader of the senate; 3 members of the house of representatives, 1 of whom shall be appointed by the minority leader of the house of representatives; the director of coastal zone management or his designee; the director of marine

fisheries or his designee; the commissioner of environmental protection or his designee; and 8 members to be appointed by the governor, 1 of whom shall be a representative of a commercial fishing organization, 1 of whom shall be a representative of an environmental organization, 1 of whom shall have expertise in the development of offshore renewable energy, 1 of whom shall be a representative of the Cape Cod commission, 1 of whom shall be a representative of the Martha's Vineyard Commission, 1 of whom shall be a representative of the Merrimack Valley Planning Commission, 1 of whom shall be a representative of the metropolitan area planning council and 1 of whom shall be a representative of the Southeastern Regional Planning and Economic Development District. Members shall be appointed for terms of 3 years, except that, initially, 4 members appointed by the governor shall be appointed for terms of 2 years and 3 members appointed by the governor shall be appointed for terms of 1 year. The appointing authority may fill any vacancy that occurs in an unexpired term. The members of the commission shall be selected with due regard to coastal geographic distribution.

(ii) The commission shall meet at least quarterly and at the discretion of the secretary. The commission shall hold public meetings relative to matters within the jurisdiction of the ocean management plan and shall make recommendations to the secretary for the proper management and development of the plan. The secretary shall consider the recommendations of the commission.

(iii) The office of coastal zone management and division of marine fisheries shall provide technical support to the commission.

(d) There shall be an ocean science advisory council to assist the secretary in creating a baseline assessment and obtaining any other scientific information necessary for the development of an ocean management plan. The council shall consist of 9 members to be appointed by the secretary, 3 of whom shall be scientists from academic institutions, at least 1 of whom shall be from the School for Marine Science and Technology at the University of Massachusetts at Dartmouth and at least 1 of whom shall be from the Department of Environmental, Earth and Ocean Sciences at the University of Massachusetts at Boston; 3 of whom shall be scientists from private, nonprofit organizations, at least 1 of whom shall be a scientist designated by the Massachusetts Fishermen's Partnership; and 3 of whom shall be scientists from government agencies with demonstrated technical training and experience in the fields of marine ecology, geology, biology, ichthyology, mammalogy, oceanography or other related ocean science disciplines, at least 1 of whom shall be from the division of marine fisheries. The secretary shall serve as coordinator of the council. The council shall meet at least quarterly and at any other time that the secretary shall deem necessary to assist him in compiling the scientific information necessary for the development of an ocean management plan.

(e) Upon the secretary's adoption of an ocean management plan, all certificates, licenses,

permits and approvals for any proposed structures, uses or activities in areas subject to the ocean management plan shall be consistent, to the maximum extent practicable, with the plan.

(f) The secretary shall develop and implement a public outreach and information program to provide information to the public regarding the ocean management planning process.

(g) The secretary shall, at least 6 months before establishing an ocean management plan pursuant to this section, provide for public access to the draft plan in electronic and printed copy form and shall provide for a public comment period, which shall include at least 4 public hearings in at least 4 different coastal regions. The secretary shall publish notice of the hearings in the Environmental Monitor within 30 days of the date of the hearing. A notice of the public hearing shall also be placed, at least once each week for the 4 consecutive weeks preceding the hearing, in newspapers with sufficient circulation to notify the residents of the coastal region where the hearing shall be held. The hearing shall be held not sooner than 30 days and not later than 35 days after the notice is published in the Environmental Monitor. The public comment period shall remain open for at least 60 days from the date of the final public hearing. After the close of the public comment period, the secretary shall issue a final ocean management plan and shall file the plan, together with legislation necessary to implement the plan, if any, by filing the same with the clerks of the house of representatives and senate.

(h) The secretary shall promulgate regulations to implement, administer and enforce this section and shall interpret this section and any regulations adopted hereunder consistent with his power to enforce the laws. These regulations shall include provisions for the review of the ocean management plan, its baseline assessment and the enforceable provisions of relevant statutes and regulations at least once every 5 years.

(i) The joint committee on state administration and regulatory oversight, in this subsection called the committee, may review a proposed ocean management plan or regulations proposed or adopted pursuant to this chapter. The committee shall consult with the joint committee on environment, natural resources and agriculture in performing this review. The committee may hold public hearings concerning a proposed ocean management plan or a proposed or existing regulation and may submit to the secretary comments concerning the merit and appropriateness of the plan or regulations to be promulgated and an opinion on whether the proposed plan or regulations are authorized by, and consistent with, this chapter and existing state laws and regulations. The secretary shall respond in writing within 10 days to the committee's written questions relevant to the committee's review of a proposed plan or proposed or existing regulation. The secretary shall provide to the committee, without charge, copies of all public records in the secretary's custody relating to the proposed plan or regulation or action in question within 10 days of a request by the committee. The committee may issue a report with proposed changes to a proposed plan or proposed or existing regulation and shall transmit this report to the secretary. If the secretary does not adopt the proposed changes

contained in the committee's report, the secretary shall notify the committee in writing of the reasons why he did not adopt the changes either at the time he adopts a proposed plan or proposed regulation or within 21 days of receiving the committee's report on an existing regulation.

(j) The ocean management plan shall be consistent with this section and all other general and special laws. The ocean management plan shall not be construed to supersede existing general or special laws, or to confer rights and remedies in addition to those conferred by existing general or special laws.

(k)(1) In the geographic area subject to the ocean management plan, as described in paragraph (b), commercial and recreational fishing shall be allowable uses, subject to the exclusive jurisdiction of the division of marine fisheries. Any component of a plan which regulates commercial or recreational fishing shall be developed, promulgated and enforced by the division of marine fisheries pursuant to its authority under chapter 130.

(2) A component of an ocean management plan which does not have as its primary purpose the regulation of commercial or recreational fishing but which has an impact on such fishing shall minimize negative economic impacts on commercial and recreational fishing. Prior to inclusion in an ocean management plan, a component with such a reasonably foreseeable impact shall be referred to the division of marine fisheries, which shall, in writing and in a timely and efficient manner, evaluate the component for its impact on commercial and recreational fishing and, if possible, develop and recommend to the secretary any suggestions or alternatives to mitigate or eliminate any adverse impacts.

(3) The director of marine fisheries, subject to the approval of the marine fisheries advisory commission, shall have sole authority for the opening and closing of areas within the geographic area described in subsection (b) for the taking of any and all types of fish, pursuant to section 17A of chapter 130. Nothing in this section shall be construed to limit the powers of the director pursuant to section 17 of chapter 130 or any other provision thereto.

SECTION 3. Section 12B of chapter 132A of the General Laws, as appearing in the 2006 Official Edition, is hereby amended by striking out the definitions of "Commissioner" and "Department" and inserting in place thereof the following definition:-

"Director", the director of coastal zone management.

SECTION 4. Said section 12B of said chapter 132A, as so appearing, is hereby further amended by inserting after the definition of "Facilities plan" the following definition:-

"Office", office of coastal zone management.

SECTION 5. Section 12C of said chapter 132A, as so appearing, is hereby amended by striking out, in lines 1 and 3, the word "department" and inserting in place thereof, in each instance, the following word:- office.

SECTION 6. Section 14 of said chapter 132A, as so appearing, is hereby amended by striking out, in line 2, the word "department" and inserting in place thereof the following word:- office.

SECTION 7. Said chapter 132A, as so appearing, is hereby further amended by striking out section 15 and inserting in place thereof the following section:-
Section 15. Except as otherwise provided in this section, the following activities shall be prohibited in an ocean sanctuary:

(1) the building of any structure on the seabed or under the subsoil;

(2) the construction or operation of offshore or floating electric generating stations, except: (a) on an emergency and temporary basis for the supply of energy when the electric generating station is otherwise consistent with an ocean management plan; or (b) for appropriate-scale renewable energy facilities, as defined by an ocean management plan promulgated pursuant to section 4C of chapter 21A, in areas other than the Cape Cod Ocean Sanctuary; provided, however, that (i) the renewable energy facility is otherwise consistent with an ocean management plan; (ii) siting of all such facilities shall take into account all relevant factors, including but not limited to, protection of the public trust, compatibility with existing uses, proximity to the shoreline, appropriateness of technology and scale, environmental protection, public safety and community benefit; and (iii) in municipalities where regional planning agencies have regulatory authority, a regional planning agency shall define the appropriate scale of offshore renewable energy facilities and review such facilities as developments of regional impact, and the applicant may seek review of the regional planning agency's development of regional impact determination, but not its determination of appropriate scale, pursuant to the authority of the energy facilities siting board to issue certificates of environmental impact and public interest pursuant to sections 69K to 69O, inclusive, of chapter 164;

(3) the drilling or removal of any sand, gravel or other minerals, gases or oils;

(4) the dumping or discharge of commercial, municipal, domestic or industrial wastes;

(5) commercial advertising; or

(6) the incineration of solid waste or refuse on, or in, vessels moored or afloat within the boundaries of an ocean sanctuary.

SECTION 8. Section 16 of said chapter 132A, as so appearing, is hereby amended by striking out, in lines 14 and 15, the words "telecommunications and energy" and inserting in place thereof the following words:- public utilities or the department of telecommunications and cable.

SECTION 9. Said section 16 of said chapter 132A, as so appearing, is hereby further amended by striking out, in line 20 and in lines 28 and 29, the word "department" and inserting in place thereof, in each instance, the following word:- office.

SECTION 10. Said section 16 of said chapter 132A, as so appearing, is hereby further amended by striking out, in lines 29 and 30, the words "fisheries, wildlife and environmental law enforcement" and inserting in place thereof the following words:- fish and game.

SECTION 11. Section 16A of said chapter 132A, as so appearing, is hereby amended by inserting after the word "department", in line 6, the following words:- of environmental protection.

SECTION 12. Section 16B of said chapter 132A, as so appearing, is hereby amended by striking out, in line 26 and in lines 30 and 31, the words "and the division of water pollution control" and inserting in place thereof the following words:- of environmental protection.

SECTION 13. Section 16C of said chapter 132A, as so appearing, is hereby amended by inserting after the word "department", in lines 1 and 5, the following words:- of environmental protection.

SECTION 14. Section 16E of said chapter 132A, as so appearing, is hereby amended by inserting after the word "department", in lines 1 and 2 and line 5, the following words:- of environmental protection.

SECTION 15. Said section 16E of said chapter 132A, as so appearing, is hereby further amended by inserting after the word "commissioner", in lines 13 and 14, the following words:- of environmental protection.

SECTION 16. Section 16F of said chapter 132A, as so appearing, is hereby amended by inserting after the word "department", in line 1, the following words:- of environmental protection.

SECTION 17. Said section 16F of said chapter 132A, as so appearing, is hereby further amended by striking out the last sentence.

SECTION 18. Section 18 of said chapter 132A, as so appearing, is hereby amended by inserting, after the word "of", in line 2, the following words:-energy and.

SECTION 19. Said section 18 of said chapter 132A, as so appearing, is hereby further amended by striking out, in lines 7 and 8 and line 9, the word "department" and inserting in place thereof,

in each instance, the following word:- office.

SECTION 20. Said section 18 of said chapter 132A, as so appearing, is hereby further amended by adding the following paragraph:-

Any permit or license issued by a department, division, commission, or unit of the executive office of energy and environmental affairs and other affected agencies or departments of the commonwealth for activities or conduct consistent with this chapter shall be subject to an ocean development mitigation fee as shall be established by the secretary of energy and environmental affairs; provided, however, that no fee shall be assessed on commercial and recreational fishing permits or licenses. All the proceeds of the ocean development mitigation fee shall be deposited in the Ocean Resources and Waterways Trust Fund established pursuant to section 35HH of chapter 10.

SECTION 21. Nothing in this act shall be construed to alter the jurisdictional authority of the division of marine fisheries. Nothing in this act shall be construed to prohibit the transit of commercial fishing vessels and recreational vessels in state ocean waters.

SECTION 22. Any project that, before the effective date of this act, has: (1) filed a license application under chapter 91 of the General Laws and received a written determination of completeness from the department of environmental protection; (2) if subject to section 61 of chapter 30 of the General Laws, received a certificate of adequacy regarding a final environmental impact report; or (3) if the project is subject to the jurisdiction of the energy facilities siting board, received both a final decision from the energy facilities siting board and a certificate of adequacy regarding a draft environmental impact report, shall not be subject to the requirements of said ocean management plan.

SECTION 23. The secretary of energy and environmental affairs shall promulgate a final ocean management plan by December 31, 2009. Upon adoption, an ocean management plan shall formally be incorporated into the Massachusetts coastal zone management program, as referenced in section 4A of chapter 21A of the General Laws.

SECTION 24. Section 8 of this act shall take effect upon the adoption of an ocean management plan or by December 31, 2009, whichever occurs first.

SECTION 25. The secretary of energy and environmental affairs shall convene an advisory committee for the purpose of reviewing section 16 of chapter 132A of the General Laws and regulations promulgated pursuant thereto. The advisory committee shall review the regulatory definitions of "public necessity and convenience" and "significant alteration". The secretary shall submit a report, together with legislative recommendations, if any, to the joint committee on environment, natural resources and agriculture by December 31, 2009.

Appendix 2 - 301 CMR 28.00 Implementing Regulations for the Ocean Management Plan

301 CMR 28: OCEAN MANAGEMENT PLAN

28.01: Authority and Purpose
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28.01: Authority and Purpose

(1) 301 CMR 28.00 is adopted pursuant to M.G.L. c. 21A §4C and M.G.L. 132A, §§ 12A-16F (Massachusetts Oceans Sanctuary Act) as amended by St. 2008, c. 114 (Massachusetts Oceans Act). These regulations implement, administer, and enforce M.G.L. c. 21A, § 4C and the Ocean Management Plan, developed and promulgated in accordance with the Massachusetts Oceans Act. In accordance with St. 2008, c. 114, § 23 and with the federal Coastal Zone Management Act of 1972 (16 U.S.C. 1451 et seq.) and implementing regulations at 15 CFR §§ 923 and 930, enforceable standards of the Ocean Management Plan form part of the Massachusetts Coastal Zone Management Program and shall be interpreted and applied in a manner consistent with 301 CMR 20.00.

(2) 301 CMR 28.00 is promulgated by the Secretary to fulfill, in part, the statutory responsibility for the oversight, coordination, and planning for ocean waters and ocean-based development in the Commonwealth. The Massachusetts Oceans Act requires the Secretary to develop and implement an integrated ocean management plan for a specified Ocean Management Planning Area. The purpose of 301 CMR 28.00 is also to define, interpret, and clarify the procedures and rules necessary for agencies to carry out responsibilities under the Massachusetts Oceans Act, M.G.L. c. 21A, § 4C, and M.G.L. 132A, §§ 12A-16F. Pursuant to statutory directive, the Ocean Management Plan establishes management areas and standards for certain

Activities allowed under M.G.L. c. 132A, §§ 15-16 within the Ocean Management Planning Area. The Activities subject to the Ocean Management Plan are governed by siting and performance standards, associated with mapped resources and uses, that direct development away from areas with important and high value resources and water-dependent uses. 301 CMR 28.00 establishes the procedures and requirements necessary to interpret, implement, administer, and enforce M.G.L. c. 21A, § 4C and the Ocean Management Plan, including provisions to:

(a) Codify the jurisdiction, management areas, and standards developed by the Ocean Management Plan;

(b) Establish procedures for assessing the Ocean Development Mitigation Fee, pursuant to M.G.L. c. 132A § 18;

(c) Develop provisions for the review of the Ocean Management Plan and its baseline assessment and enforceable measures;

(d) Define the process for making updates or amendments to the Ocean Management Plan; and

(e) Ensure regulatory consistency for pertinent agency decisions regarding ocean development.

(3) Nothing in the Ocean Management Plan or 301 CMR 28.00 shall be construed to supersede existing general or special laws, or to confer rights and remedies in addition to those conferred by existing general or special laws.

28.02: Definitions

Activities means activities, uses or facilities allowed under M.G.L. c. 132A §§ 15 and 16.

Agency means any agency, department, board, commission, or authority of the Commonwealth.

Cables means linear infrastructure for the transmission of telecommunications or electricity.

Commercial Scale Wind Energy means wind energy projects of a scale designed for the generation of energy at commercial scale; that is, greater than wind energy projects for an individual community or subset thereof. Commercial scale wind energy facilities are those that are larger than the community-scale allocations contained in the Ocean Management Plan.

Commercial Scale Tidal Energy means tidal energy facilities at scale greater than could be authorized by the Federal Energy Regulatory Commission (FERC) as a

pilot project under FERC's Hydrokinetic Pilot Project Licensing Process described in the April 2008 *Licensing Hydrokinetic Pilot Projects* White Paper.

Community Scale Wind Energy means wind energy projects of a scale designed to provide energy for an individual community or communities. Community Scale Wind Energy Facilities must conform to the maximum allocation of turbines that may be approved within the areas of the coastal Regional Planning Agencies as contained in the Ocean Management Plan.

Concentrations of Water-dependent Uses means areas described and mapped in the Ocean Management Plan, as may be updated or amended, where the intensity of marine-based commercial and recreational fishing, commercial shipping and navigation, and recreational boating uses are significant. Maps of the Concentrations of Water-dependent Uses and the methods utilized for developing them are available on the Massachusetts Ocean Resources Information System.

Environmental Impact Report means an Environmental Impact Report, or EIR, as defined and used in 301 CMR 11.00: *MEPA Regulations*.

Environmental Monitor means the publication, titled the *Environmental Monitor*, issued by the Executive Office of Energy and Environmental Affairs to provide information on projects under review by the MEPA office, recent MEPA decisions, and other public notices from Agencies. The URL for the online version of the *Environmental Monitor* is http://www.env.state.ma.us/mepa/emonitor.aspx.

Environmental Notification Form means an Environmental Notification Form, or ENF, as defined and used in 301 CMR 11.00: *MEPA Regulations*.

Host Community means any town or city in which all or part of a renewable energy Activity's energy generating facilities (i.e., turbines not cables) are located.

Massachusetts Ocean Resources Information System means the online geographical information system (GIS) data base and mapping tool managed by the Office of Coastal Zone Management. All of the maps and GIS data contained in the Ocean Management Plan are maintained and available in digital format on the Ocean Management Plan Data site of the Massachusetts Ocean Resources Information System. The URL for is http://www.mass.gov/czm/moris/oceanplan/.

MEPA means the Massachusetts Environmental Policy Act, M.G.L. c. 30, §§ 61 through 62H and regulations at 301 CMR 11.00: *MEPA Regulations*.

Ocean Advisory Commission means the advisory commission established by the Oceans Act for the purpose of assisting the Secretary in the development of an Ocean Management Plan. Membership and other terms are defined in M.G.L. c. 21A, § 4C(c)(i) through (iii).

Ocean Management Plan means the Massachusetts Ocean Management Plan developed and promulgated pursuant to St. 2008, c. 114 and M.G.L. c. 21A, § 4C and as updated and amended.

Ocean Management Planning Area means the waters and associated submerged lands of the ocean, including the seabed and the soil, lying between a line designated as the "Nearshore Boundary of the Ocean Management Planning Area" and the seaward boundary of the Commonwealth, as defined in 43 U.S.C. § 1312. The "Nearshore Boundary of the Ocean Management Planning Area" is depicted on a map dated January 31, 2006, prepared by the Office of Coastal Zone Management, and available on the Massachusetts Ocean Resources Information System, that constitutes the landward boundary of the Ocean Management Planning Area.

Ocean Science Advisory Council means the council established by the Oceans Act for the purpose of assisting the Secretary in creating a baseline assessment and obtaining other scientific information necessary for the development of the Ocean Management Plan. Membership and other terms are defined in M.G.L. c. 21A, § 4C(d).

Person means any individual, corporation, partnership, trust, association, or other business or nonprofit organization, or any Federal, municipal, or regional governmental, intergovernmental or other entity that is not an Agency.

Pilot Tidal and Wave Energy Project means a tidal and wave energy (or hydrokinetic) facility at a scale that could be authorized by the Federal Energy Regulatory Commission (FERC) as a pilot project under FERC's Hydrokinetic Pilot Project Licensing Process described in the April 2008 *Licensing Hydrokinetic Pilot Projects* White Paper.

Pipeline means linear infrastructure for the conveyance of such materials as natural gas.

Proponent means any Agency or Person, including a designee or successor in interest, that undertakes, or has a significant role in undertaking, an Activity.

Regional Planning Agency means, for the purposes of these regulations, one of the six coastal regional planning organizations established pursuant to statewide enabling legislation that help communities plan and implement short- and long-range improvements for transportation, economic development, environmental, land use, and community development needs. The six coastal regional planning organizations are: the Cape Cod Commission, the Martha's Vineyard Commission, the Merrimack Valley Planning Commission, the Metropolitan Area Planning Council, the Nantucket Planning and Economic Development Commission, and the Southeastern Regional Planning and Economic Development District.

Renewable Energy Activities means wind, tidal, or wave energy projects allowed under M.G.L. c. 132A §§ 15-16 and includes Commercial Scale Wind Energy, Commercial Scale Tidal Energy, Community Scale Wind Energy, Pilot Tidal and Wave Energy, and Test or Demonstration-Scale Renewable Energy Projects.

Sand and Gravel Extraction means the activity of removing sand or gravel from the seabed and subsoil for the purpose of beach restoration, nourishment or shore protection.

Secretary means the Secretary of the Executive Office of Energy and Environmental Affairs.

Special, Sensitive or Unique Resources means special, sensitive or unique estuarine and marine life and habitats, pursuant to St. 2008, c. 114 and M.G.L. c. 21A, § 4C. Special, Sensitive or Unique Resources are described and mapped in the Ocean Management Plan, as may be updated or amended. Maps of the Special, Sensitive or Unique Resources and the methods utilized for developing them are available on the Massachusetts Ocean Resources Information System.

Test or demonstration-scale renewable energy projects mean wind, tidal, or wave energy projects of a limited scale designed to pilot, test, and demonstrate renewable energy technology.

28.03: Jurisdiction

(1) Areas Subject to Jurisdiction.

(a) Activities listed in 301 CMR 28.03(2) that occur in all or part of the Ocean Management Planning Area are subject to jurisdiction.

(2) Activities Subject to Jurisdiction.

(a) Any Person engaged in the following Activities shall comply with the siting and performance standards set forth in 301 CMR 28.04: Renewable Energy, Sand and Gravel Extraction, Cables, and Pipelines.
(b) Within the Ocean Management Planning Area, the Ocean Management Plan standards apply to Activities that are required to file an Environmental Impact Report.
(c) Proponents of Activities that exceed Environmental Notification Form thresholds are required to document any potential impacts to Special, Sensitive and Unique Resources or areas of Concentrations of Water-dependent Uses.
(d) The Ocean Management Plan may be amended to include other Activities allowed under M.G.L. c. 132A, §§ 15 and 16 pursuant to 301 CMR 28.07.
(e) Upon written request, the Secretary or his or her designee will provide Proponents, Persons, or Agencies with a written advisory opinion regarding the applicability of the Ocean Management Plan or 301 CMR 28.00.
(f) Activities that are allowable pursuant to M.G.L. c. 132A §§ 15 and 16 and that are not required to develop an Environmental Impact Report are presumed to meet the standards in 301 CMR 28.04.

(3) Protected Resources and Uses.

(a) The Ocean Management Plan identifies key components of Massachusetts estuarine and marine ecosystems, defined as Special, Sensitive or Unique Resources, and establishes standards to protect them. The Ocean Management Plan also establishes management guidance for balancing potential impacts to areas with Concentrations of Water-dependent Uses with new Activities in the Ocean Management Planning Area. The standards for protected resources and uses are contained in 301 CMR 28.04.
(b) Maps developed in the Ocean Management Plan and maintained in the Massachusetts Ocean Resources Information System delineate the areas of defined Special, Sensitive or Unique Resources and Concentrations of Water-dependent Uses. These maps shall be used to ensure that the standards in 301 CMR 28.04 are met. Additional information, including more accurate characterization or delineation of Special, Sensitive or Unique Resources and Concentrations of Water-dependent Uses, may be required pursuant to a Secretary's MEPA certificate. This additional information and other information made available during MEPA review will be utilized in the review and authorization of proposed Activities.

(4) Activities and Resources not subject to Ocean Management Plan jurisdiction.

(a) Pursuant to M.G.L. c. 130 and any other applicable general or special law, the Division of Marine Fisheries shall have sole responsibility for developing

and implementing any fisheries management plans or fisheries regulations. Marine fisheries shall be managed in compliance with the applicable rules and regulations of the Division of Marine Fisheries and federal or interstate fishery management plans issued pursuant to M.G.L. c. 130 or any other applicable general or special law and shall be integrated, to the maximum extent practicable, with the Ocean Management Plan.

(b) Maps and information contained in the Ocean Management Plan will assist the Division of Marine Fisheries in the review of proposed Aquaculture Facilities pursuant to 322 CMR 15.00: *Management of Marine Aquaculture*.

28.04: Management Areas and Standards

(1) Management areas. Within the Ocean Management Planning Area, the following management areas are defined in the Ocean Management Plan:

(a) Prohibited areas. Areas where Activities are expressly prohibited by either the Ocean Sanctuaries Act or Ocean Management Plan.

(b) Wind Energy Areas. Areas suitable and presumptively allowed for commercial-scale wind energy facilities and other renewable energy Activities subject to standards and conditions contained in the Ocean Management Plan and these regulations.

(c) Multi-use Areas. Areas, including portions of state waters not identified as Ocean Sanctuaries pursuant to the M.G.L. c. 132A § 13(a), where Activities allowed under the Ocean Sanctuaries Act are subject to the standards and conditions contained in the Ocean Management Plan and 301 CMR 28.00.

(2) Management Standards for Special, Sensitive or Unique Resources. The following standards apply only to those Activities that are required to file an Environmental Impact Report pursuant to MEPA:

(a) Activities proposed in the Ocean Management Planning Area are presumptively excluded from the Special, Sensitive or Unique Resource areas delineated on maps contained in the Ocean Management Plan and maintained in the Massachusetts Ocean Resources Information System.

(b) This presumption may be overcome by demonstrating to the Secretary that:

1. The maps delineating the Special, Sensitive or Unique Resources do not accurately characterize the resource based on substantial site-specific information collected in accordance with data standards and processes contained in 301 CMR 28.08; or

2. No less environmentally damaging practicable alternative exists. For the purposes of this standard, an alternative is practicable if it is available and capable of being done after taking into consideration

cost, existing technology, and logistics with respect to the purpose of the Activity; and,

3. The Proponent has taken all practicable measures to avoid damage to Special, Sensitive or Unique Resources, and the Activity will cause no significant alteration Special, Sensitive, or Unique Resources. Demonstrating compliance with this standard may include the incorporation of measures to avoid resources and impacts through time of year controls such that the construction, operation, or removal of the Activity will not occur when the Special, Sensitive or Unique Resource is present or may be adversely effected; and,

4. The public benefits associated with the proposed Activity outweigh the public detriments to the Special, Sensitive or Unique Resource.

(3) Management Standards for Concentrations of Water-dependent Uses. The following standard applies only to those Activities which are required to develop an Environmental Impact Report pursuant to MEPA. To the maximum extent practicable, Proponents of Activities must avoid, minimize, and mitigate impacts to areas of Concentrations of Water-dependent Uses delineated on maps developed in the Ocean Management Plan and maintained in the Massachusetts Ocean Resources Information System.

(4) Additional Management Standards for Renewable Energy Activities. The following standards apply to Renewable Energy Activities:

(a) Pursuant to M.G.L. c. 132A, § 15, a Regional Planning Agency shall define the appropriate scale of offshore renewable energy Activities and review such Activities as developments of regional impact in municipalities where Regional Planning Agencies have regulatory authority. A Proponent may seek review of the Regional Planning Agency's development of regional impact determination, but not its determination of appropriate scale, pursuant to M.G.L. c. 164 §§ 69K through 69O.

(b) For Commercial Scale Wind Energy Activities, the following standard applies. For Activities not subject to review by Regional Planning Agencies with regulatory authority as developments of regional impact, appropriate scale shall be determined by the Secretary in consultation with the Host Community and shall include consideration of economic benefits that the Host Community must receive from the Commercial Scale Wind Energy Activity.

(c) For Community Scale Wind Energy Activities, the following standard applies. The Ocean Management Plan lists the maximum number of turbines allocated for Community-Scale Wind Energy Activities within each Regional Planning Agency's planning area. The maximum allocation may be raised by

the Secretary based on a demonstration by a Regional Planning Agency that the existing cap for a community-scale wind energy facility is not economically viable or that raising the allocation will cause no significant impact to appropriate scale interests.

(d) For Community-Scale Wind and Pilot Wave or Tidal Activities, the following standards apply:

1. For Activities not subject to review by Regional Planning Agencies with regulatory authority as developments of regional impact, appropriate scale shall be determined by the Secretary in consultation with the Host Community.

2. Proponents of Activities must demonstrate that the Host Community formally supports the project. Such support may be demonstrated by a letter from the town's Board of Selectman, or the city's Mayor or City Council; and,

3. Proponents of Activities other than test or demonstration-scale renewable energy projects must provide an economic benefit to the Host Community.

28.05: Consistency of Agency Authorizations

(1) It shall be the responsibility of all Agencies to ensure that all certificates, licenses, permits and approvals for any proposed Activities in the Ocean Management Planning Area and subject to the jurisdiction of the Ocean Management Plan, as contained in 301 CMR 28.03, are consistent, to the maximum extent practicable, with the provisions of said plan.

(2) In issuing licenses, permits and approvals for the Activity, Agencies shall act consistently, to the maximum extent practicable, with the Secretary's findings and determinations contained in a MEPA certificate, including as they may apply to the Activity's compliance with the management standards contained in 301 CMR 28.04(2). An Agency may also rely upon such findings and determinations of the Secretary when reviewing and taking action on an application or request by a proponent for a license, permit or approval from the Agency for the Activity.

(3) An Agency shall include a determination in its § 61 findings pursuant to MEPA, that all feasible measures have been taken such that its approval of the Activity is consistent with the Ocean Management Plan and 301 CMR 28.00. The Agency shall specify any measures required to achieve consistency, the Person or Agency responsible for funding and implementing such measures, and the anticipated implementation schedule that will ensure that the measures shall be implemented prior to, or when appropriate, in relation to timing of unavoidable impacts.

28.06: Ocean Development Mitigation Fee

(1) Any Activity subject to the jurisdiction of the Ocean Management Plan and these regulations and requiring a permit or license issued by a department, division, commission, or unit of the Executive Office of Energy and Environmental Affairs and other affected agencies or departments of the commonwealth shall be subject to an Ocean Development Mitigation Fee as established by the Secretary. The purpose of the fee is to compensate the Commonwealth for unavoidable impacts of ocean development Activities on the broad public interests and rights in the lands, waters, and resources of the Ocean Planning Area and to support the planning, management, restoration, or enhancement of marine habitat, resources, and uses pursuant to the Massachusetts Oceans Act. No portion of the fee assessed by the Secretary shall be based on the Activity requiring a commercial or recreational fishing permit or license.

(2) All fees assessed by the Secretary shall be deposited in the Ocean Resources and Waterways Trust pursuant to M.G.L. c. 10, § 35HH and shall be administered in accordance with the purposes of the Fund and guidelines established by the Secretary.

(3) Under 301 CMR 28.06, the Secretary shall promulgate a fee structure for ocean development Activities subject to the Ocean Management Plan and 301 CMR 28.00. The Ocean Development Mitigation Fee should reflect differences in the scope and scale of Activities and their effects on protected resources or uses.

(4) The Ocean Development Mitigation Fee as determined by 301 CMR 28.06(3) will be listed in the final MEPA certificate.

(5) Nothing in 301 CMR 28.06 shall modify or otherwise affect an Agency's independent authority to require the Proponent to provide mitigation or compensation in *lieu* of mitigation as a condition of a permit or license issued by the Agency for the Activity.

28.07: Standards for Plan Review, Amendments, and Updates

(1) Consistent with M.G.L. c. 21A, § 4C, the development and revision of the Ocean Management Plan is the authority and responsibility of the Secretary. The Office of Coastal Zone Management will support the Secretary, and act on his or her behalf as delegated, in the administration, implementation, and oversight of the Ocean Management Plan and 301 CMR 28.00.

(2) The Secretary shall ensure that the Ocean Management Plan, its baseline assessment, and the enforceable provisions of relevant statutes and regulations are reviewed at least once every five years.

(3) The scope of such review will be determined by the Secretary in consultation with the Ocean Advisory Commission and the Ocean Science Advisory Council.

(4) The following changes to the Ocean Management Plan shall be made only through an amendment:

(a) The revision of existing or the creation of new management area locations or boundaries, excepting minor adjustments;
(b) The substantial revision of existing or the creation of new management standards;
(c) The identification of new or removal of current protected Special, Sensitive, or Unique Resources;
(d) The identification of new or removal of current protected areas of Concentrations of Water-dependent Uses; or,
(e) Other changes that would result in significant alteration to the management framework or geographic extent of the plan.

(5) The Secretary will conduct the review and amendment process in accordance with the following guidelines:

(a) The plan amendment process will be initiated with a public notice in the *Environmental Monitor* announcing the intent to review and amend the current Ocean Management Plan.
(b) Public hearings will be held to receive input on the content and implementation of the current Ocean Management Plan. Generally, a hearing will be held in the each of the following regions: North Shore, Metro Boston, South Shore, Cape and Islands, and South Coastal.
(c) The Secretary will consult with the Ocean Advisory Committee in determining the scope of the plan amendment and in the development of amendments pursuant to said scope.
(d) The Secretary will consult with the Ocean Science Advisory Council in determining the scope of the updated baseline assessment scope and in the review of science related to the plan amendment scope.
(e) The Secretary will make a draft of the plan amendment available in electronic and printed copy form for public comment. Public hearings will be held on the draft amended plan. The public comment period will remain open for a minimum of 60 days after the last hearing.

(f) After the close of the public comment period, the Secretary will promulgate a final amended Ocean Management Plan and will file the plan with the House of Representatives and Senate clerks.
(g) 301 CMR 28.00 will be revised as necessary to implement, administer and enforce M.G.L. c. 21A, § 4C and the Ocean Management Plan.

(6) Distinct from an amendment to the Ocean Management Plan, updates are revisions to the plan intended for proposed changes necessary for effective and efficient administration but not at the scope or scale of an amendment. The following changes to the Ocean Management Plan may be made through an update:

(a) Corrections to address errata, technical discrepancies or errors, or to clarify intent or meaning;
(b) Updated data and information on the spatial extent or further characterization of Special, Sensitive and Unique resources or Concentrations of Water-dependent Uses;
(c) Minor shifts in existing management area boundaries; and,
(d) Other adjustments that do not result in significant changes to the management framework or geographic extent of the Ocean Management Plan.

(7) The Secretary will conduct the update process in accordance with the following guidelines:

(a) Requests for an update by an Agency or Person will be submitted to the Secretary. Proposed updates must meet a confirmed need for adjustments to the plan or clarify the management or administrative framework of the current and any proposal for an update must include a clear summary statement and rationale for the purpose of the update.
(b) For a proposed update that pertains to new or updated data on Special, Sensitive, or Unique Resources or Concentrations of Water-dependent Uses, the update must conform with the data standards and processes contained in 301 CMR 28.08.
(c) The Secretary will seek input from Agencies and will consult with the Ocean Advisory Commission and the Ocean Science Advisory Council on the proposed update.
(d) The Secretary will provide for public notice in the *Environmental Monitor* of the intent to update the Ocean Management Plan upon a determination that the update meets the above criteria and will further the goals of the Ocean Management Plan. The public comment period will be at least 30 days. The Secretary may hold one or more public hearings on the proposed update.

(e) After the close of the public comment period, the Secretary will issue a final decision on the proposed update. This decision will be noticed in the *Environmental Monitor*.

28.08: Data Standards

(1) For Proponents seeking to demonstrate that the maps contained in the Ocean Management Plan do not accurately characterize the protected resource or use pursuant to 301 CMR 28.04 (2)(a)1, the following standards apply:

(a) Consultation with the Secretary, the Office of Coastal Zone Management, and other Agencies with expertise or authority is advised in order to review any proposed effort to map or otherwise characterize protected resources or uses.

(b) Information presented must be based on site-specific investigation or characterization that conforms with contemporary and accepted standards.

(2) For proposed updates to or the delineation of new areas of mapped Special, Sensitive and Unique Resources or Concentrations of Water-dependent Uses pursuant to 28.07, the following standards apply:

(a) Prior to initiating a proposed investigation or mapping effort, Persons or Agencies shall consult with the Secretary, the Office of Coastal Zone Management and other Agencies with expertise or authority to determine study requirements and data products.

(b) Any new or revised data set for Special Sensitive and Unique Resources or Concentrations of Water-dependent Uses should be based on site-specific studies that conform with contemporary and accepted standards, and adhere to other customary principles such as peer review.

(c) Any final data product must include acceptable geospatial meta-data, including the identification and description of any data modification or transformation, synthesis, or extraction.

28.99: Severability. If any section or clause of 301 CMR 28.00 is held invalid or unconstitutional by a court of competent jurisdiction, the remainder shall not be affected thereby.

Appendix 3 - Data Sources Used for Developing Potential Sand Resources Map

The comprehensive map of potential sand resources in Massachusetts waters and adjacent federal waters was derived from a number of U.S. Geological Survey (USGS) publications spanning 1987 to the present with one dataset originating from the Massachusetts Geological Survey. Using these maps, geologic units (a volume of rock or sediment of identifiable origin and age) representing deposits composed primarily of sand, formed by reworking of glacial deposits, were identified. These areas were then refined based on available surficial sediment data, seismic sub-bottom profiles, and sediment cores characterizing the deposits as medium- to coarse-grained sand. The age of the data are roughly equivalent to the confidence or assumed accuracy of the resource mapping (i.e., older work was reliant on acoustic data collection techniques that have now been superseded in both resolution and areal coverage).

The following data sources were used to create the potential sand resources map (listed by region):

- **Salisbury to Ipswich** - Mapped and refined geologic unit Qsrt (late Pleistocene-Holocene regressive-transgressive shoreline deposits) from the following publication:

  Hein, Christopher J., FitzGerald, Duncan M., Barnhardt, Walter A., and Stone, Byron D., 2013. Onshore-offshore surficial geologic map of the Newburyport East and northern half of the Ipswich Quadrangles, Massachusetts: Massachusetts Geological Survey Geologic Map GM 13-01, 3 sheets, http://www.geo.umass.edu/stategeologist/frame_maps.htm?./Products/Surficial_Geology/Newburyport_East/index.html.

- **Massachusetts Bay** - Mapped and refined geologic unit Qb (beach or bar deposits) shown on Figure 11 in the following publication:

  Oldale, Robert N., and Bick, Jennifer, 1987. Maps and seismic profiles showing geology of the inner continental shelf, Massachusetts Bay, Massachusetts: U.S. Geological Survey Miscellaneous Field Studies Map MF-1923, 4 sheets.

- **Nahant to Northern Cape Cod Bay** - Mapped and refined sediment thickness of geologic units Qmn (Holocene nearshore marine sediments) and Qmd (Holocene deepwater marine sediments) from the following publication:

Pendleton, Elizabeth A., Baldwin, Wayne E., Barnhardt, Walter A., Ackerman, Seth D., Foster, David S., Andrews, Brian D., and Schwab, William C., 2013. Shallow geology, seafloor texture, and physiographic zones of the Inner Continental Shelf from Nahant to northern Cape Cod Bay, Massachusetts: U.S. Geological Survey Open-File Report 2012-1157, 53 p., http://pubs.usgs.gov/of/2012/1157/.

- **Cape Cod Bay** - Mapped and refined geologic units Qb (beach deposits) and Qob (older beach or bar deposits) shown on Figure 12 in the following publication:

  Oldale, Robert N., and O'Hara, Charles J., 1990. Maps showing the geology of the inner continental shelf, Cape Cod Bay, Massachusetts: U.S. Geological Survey Miscellaneous Field Studies Map MF-2118, 4 sheets.

- **Nantucket Sound** - Mapped and refined geologic unit Qb (marine beach and bar deposits) shown on Figure 10 in the following publication:

  O'Hara, Charles J., and Oldale, Robert N., 1987. Maps showing geology, shallow structure, and bedform morphology of Nantucket Sound, Massachusetts: U.S. Geological Survey Miscellaneous Field Studies Map MF-1911, 4 sheets.

- **Vineyard Sound** - Mapped and refined sediment thickness of geologic units Qmn (Holocene nearshore marine sediments) and Qmd (Holocene deepwater marine sediments) from the following unpublished report in progress:

  Baldwin, Wayne E., Foster, David S., Pendleton, Elizabeth A., Barnhardt, Walter A., Schwab, William C., Andrews, Brian D., and Ackerman, Seth D. Shallow geology, sea-floor texture, and physiographic zones of Vineyard and western Nantucket Sounds, Massachusetts: U.S. Geological Survey Open-File Report. [in prep.]

- **Buzzards Bay** - Mapped and refined sediment thickness of geologic units Qfe (Holocene fluvial and estuarine sediments) and Qmn (Holocene nearshore marine sediments) from the following unpublished report in review:

  Foster, David S., Baldwin, Wayne E., Barnhardt, Walter A., Schwab, William C., Ackerman, Seth D., Andrews, Brian D., and Pendleton, Elizabeth A., Shallow geology, sea-floor texture, and physiographic zones of Buzzards Bay, Massachusetts: U.S. Geological Survey Open-File Report. [in prep.]

Appendix 4 - Areas to Avoid Used in Siting Analysis for Offshore Sand Projects for Beach Nourishment

As described in Chapter 2 (of Volume 1), building on the work and approaches in the 2009 ocean plan, the 2014 draft ocean plan employs a compatibility assessment and screening analysis to identify offshore sand areas for further characterization, investigation, and assessment work, with the goal of advancing a few pilot projects in the next five years.

To implement this approach, a preliminary map of sand resources that encompasses state waters and extends seven nautical miles seaward of the planning area was developed. First, areas with sand attributes from a surficial sediment dataset were extracted and then deposits composed primarily of sand, formed by reworking of glacial deposits, were identified based on geologic mapping by USGS, other published geologic maps, available seismic sub-bottom profiles, and sediment cores characterizing the deposits as medium- to coarse-grained sand (Appendix 3).

Areas to avoid were then identified based on potential biological and physical environmental impacts, incompatibility and/or adverse interactions with existing uses and sites, and limitations and specifications of dredging operations.

This Appendix contains all of the maps of the designated areas to avoid for siting of potential offshore sand areas, listed in Table Appendix 4-1.

Table Appendix 4-1. Areas to avoid for siting of potential offshore sand areas

Category	Areas to avoid
Prohibited and Protected Areas	Cape Cod Ocean Sanctuary
	Stellwagen Bank National Marine Sanctuary
SSU Resource Areas	North Atlantic right whale core habitat*
	Humpback whale core habitat*
	Fin whale core habitat*
	Roseate Tern core habitat*
	Hard/complex seafloor
	Eelgrass
	Intertidal flats
	Important fish resources**
Critical Fisheries Management Areas	Winter Cod Conservation Zone
	Spring Cod Conservation Zone
Depth of Closure and Shoals	Areas of water depth <30 ft
Transportation and Navigation Uses	Anchorage areas (C, D, L, and M)
	Pilot boarding areas
Infrastructure Uses	Cable areas and existing cables with 250-m buffers
	Pipeline areas and existing pipelines with 500-m buffers
	Liquefied natural gas deepwater ports
Aquaculture Uses	Aquaculture sites
Areas to Avoid	Nomans Danger Zone
	Cape Wind project footprint
	U.S. Army Corps of Engineers disposal sites
Areas of Operational Limitation	Water depth <16 ft (minimum draft of dredge when loaded) or >125 ft (maximum operating depth of dredge)
* Avoidance of these SSU areas would be met by the enforceable application of time of year controls (TOY) such that the activity will not occur when the SSU resource is present or may be adversely affected.	
** Areas of two delineated important fish resources SSU areas have been designated as provisional, subject to further analysis and consultation with the Massachusetts Division of Marine Fisheries, the National Marine Fisheries Service, and the fisheries work group.	

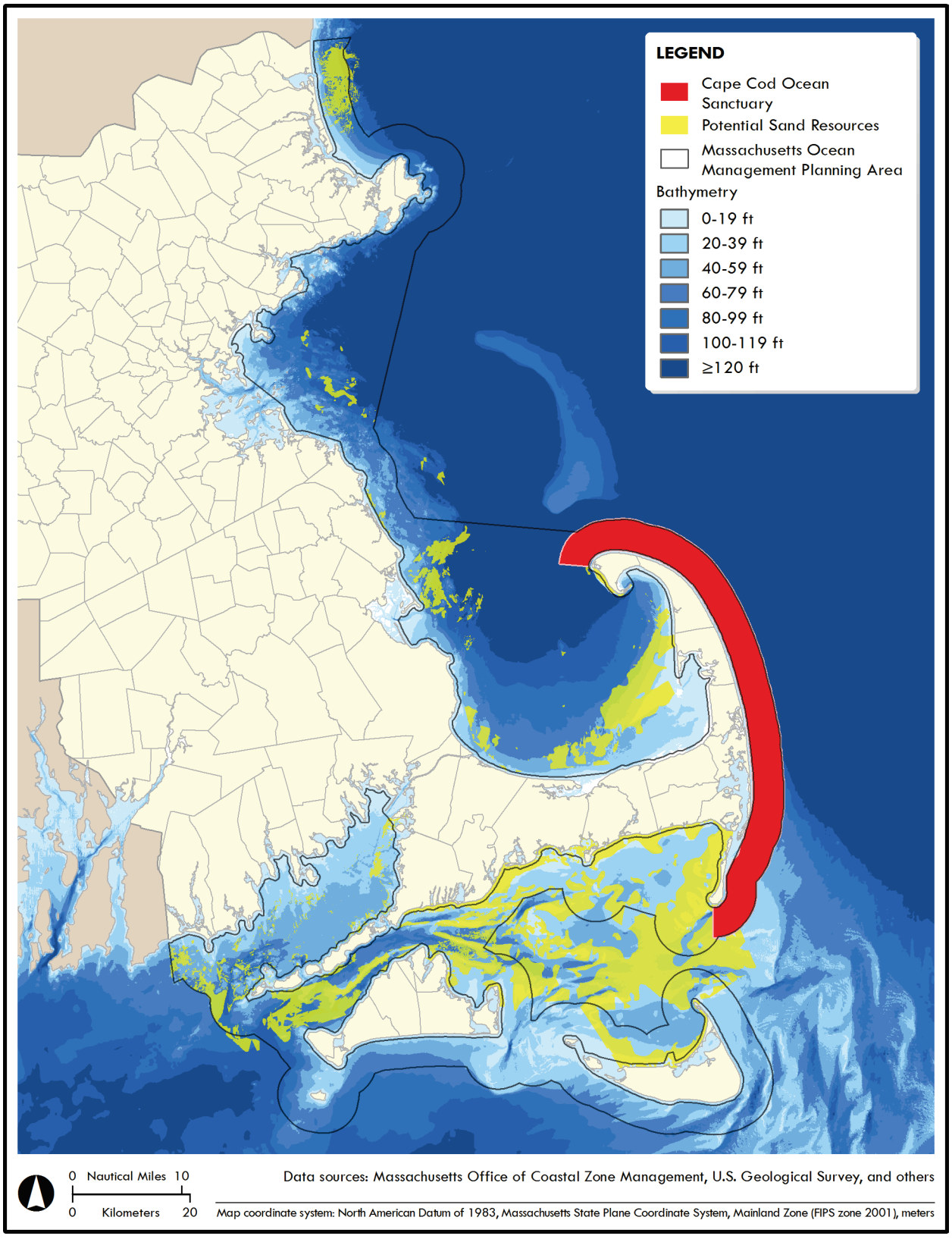

Figure Appendix 4-1. Areas to avoid for siting of potential offshore sand areas: Cape Cod Ocean Sanctuary

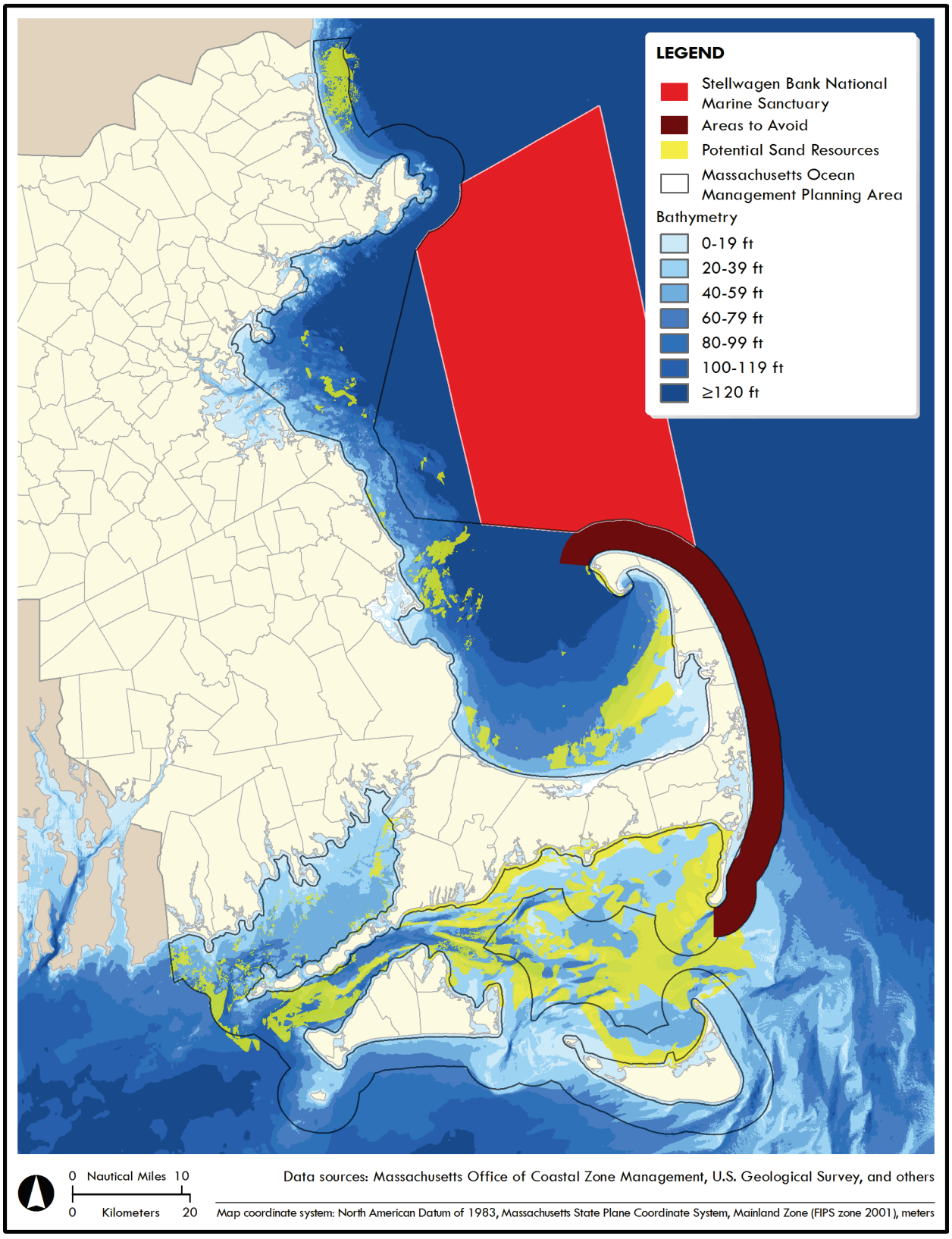

Figure Appendix 4-2. Areas to avoid for siting of potential offshore sand areas: Stellwagen Bank National Marine Sanctuary

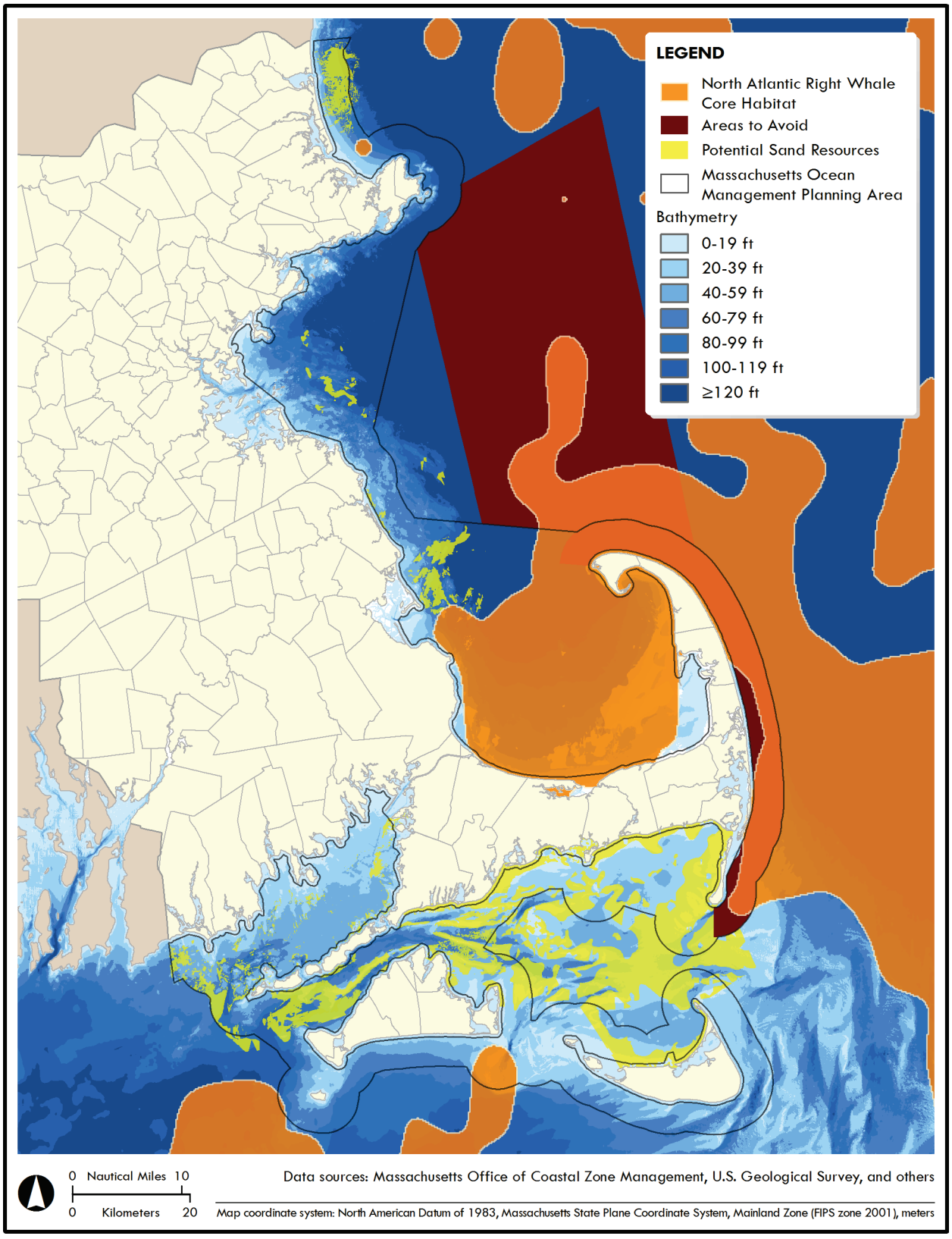

Figure Appendix 4-3. Areas to avoid for siting of potential offshore sand areas: North Atlantic right whale core habitat

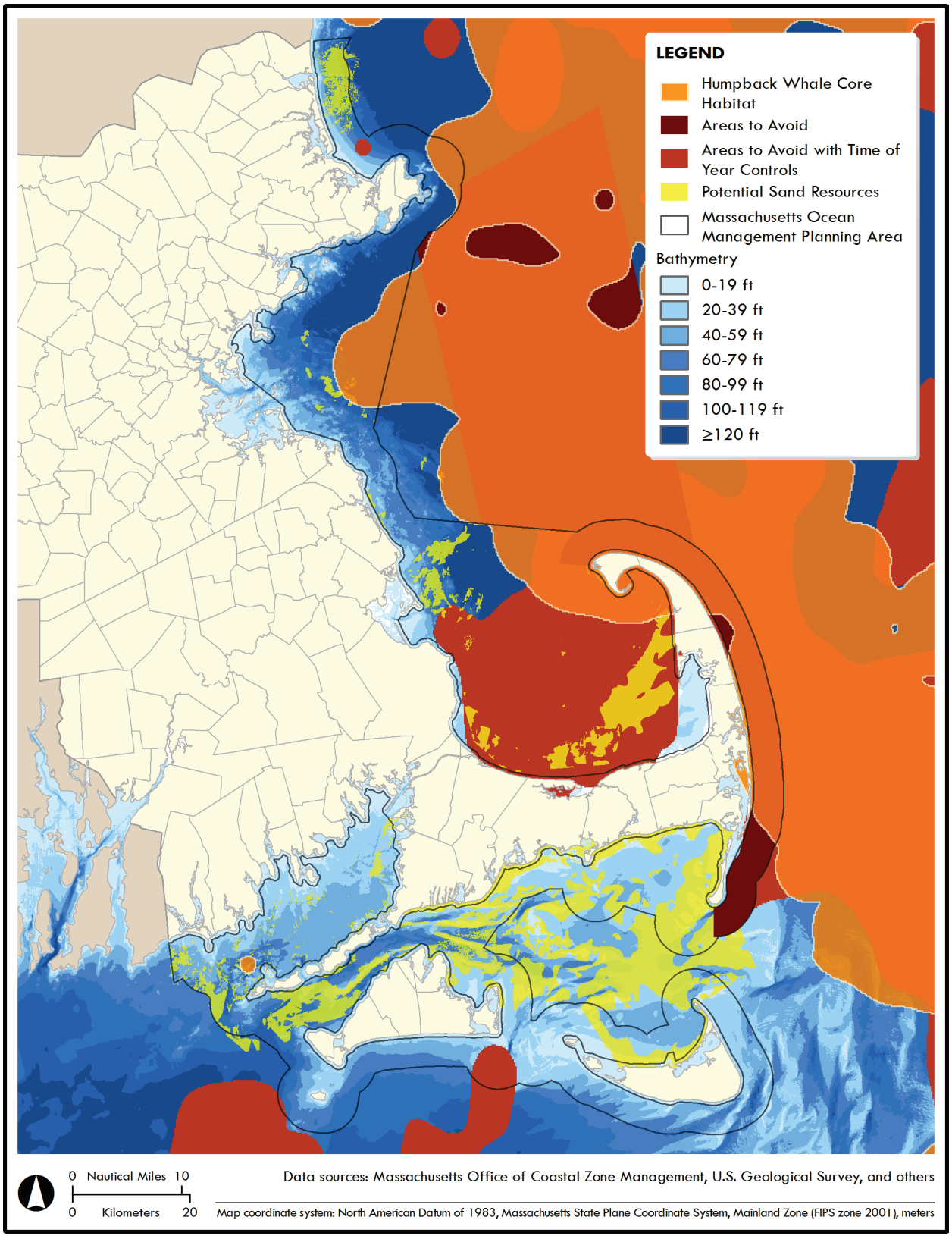

Figure Appendix 4-4. Areas to avoid for siting of potential offshore sand areas: humpback whale core habitat

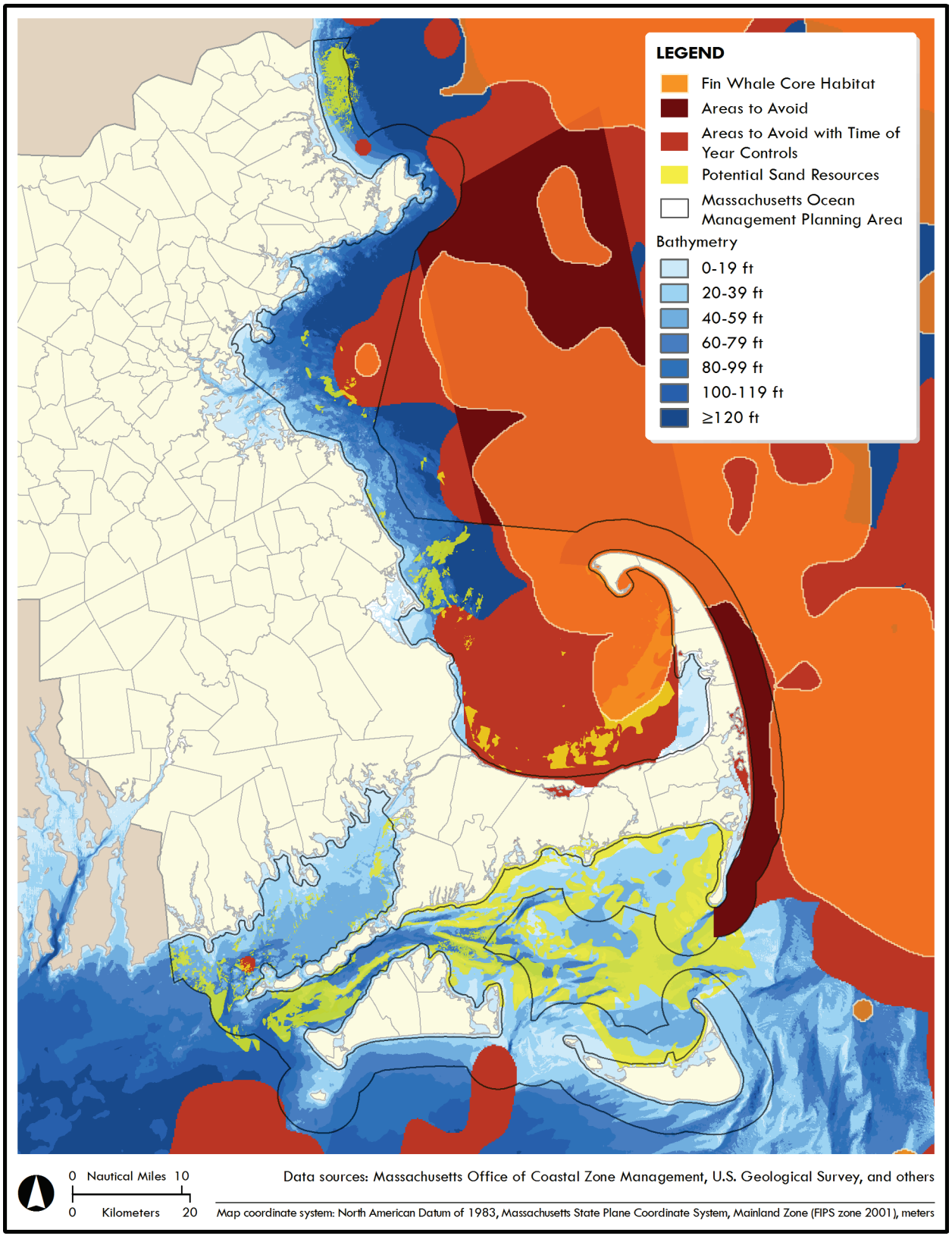

Figure Appendix 4-5. Areas to avoid for siting of potential offshore sand areas: fin whale core habitat

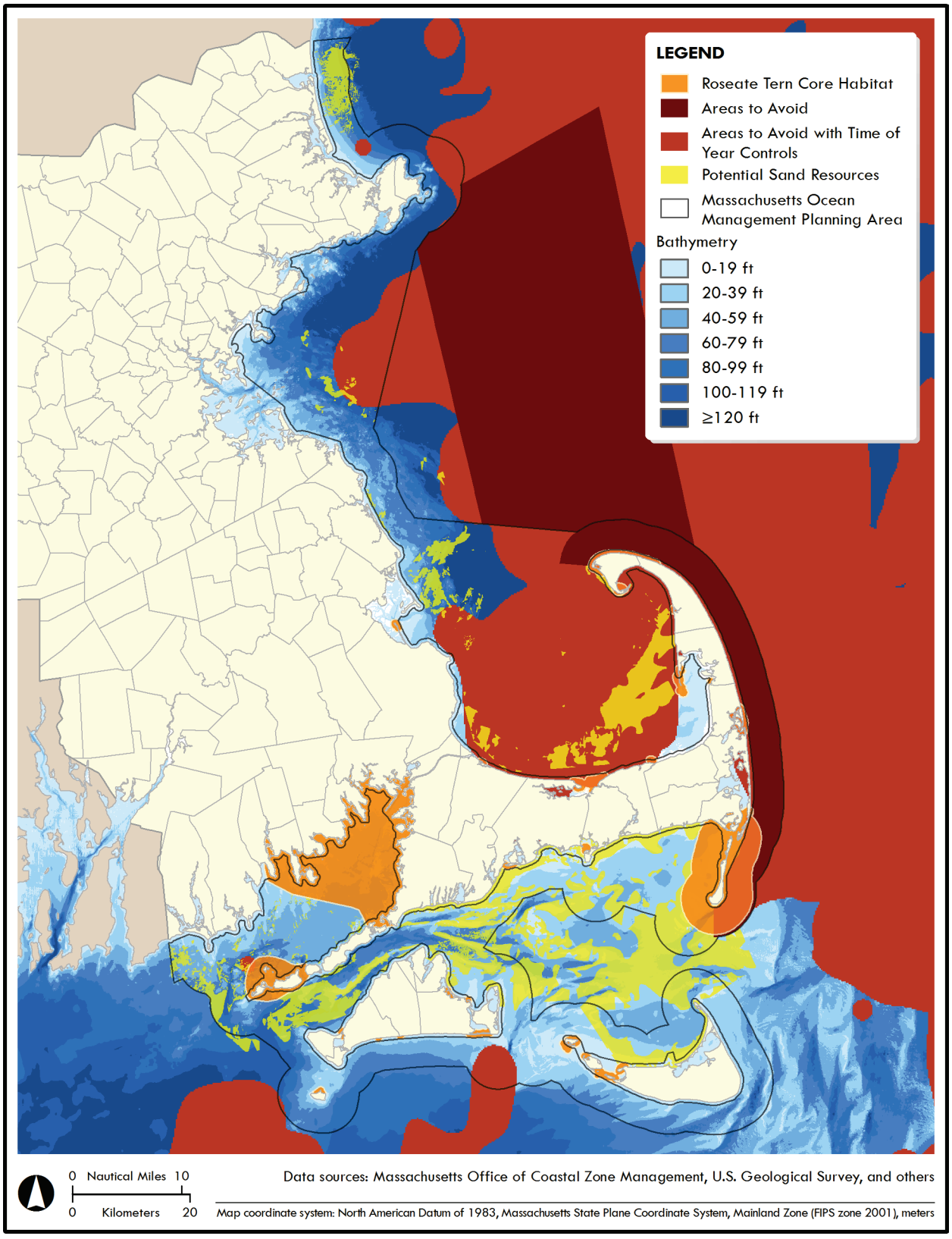

Figure Appendix 4-6. Areas to avoid for siting of potential offshore sand areas: Roseate Tern core habitat

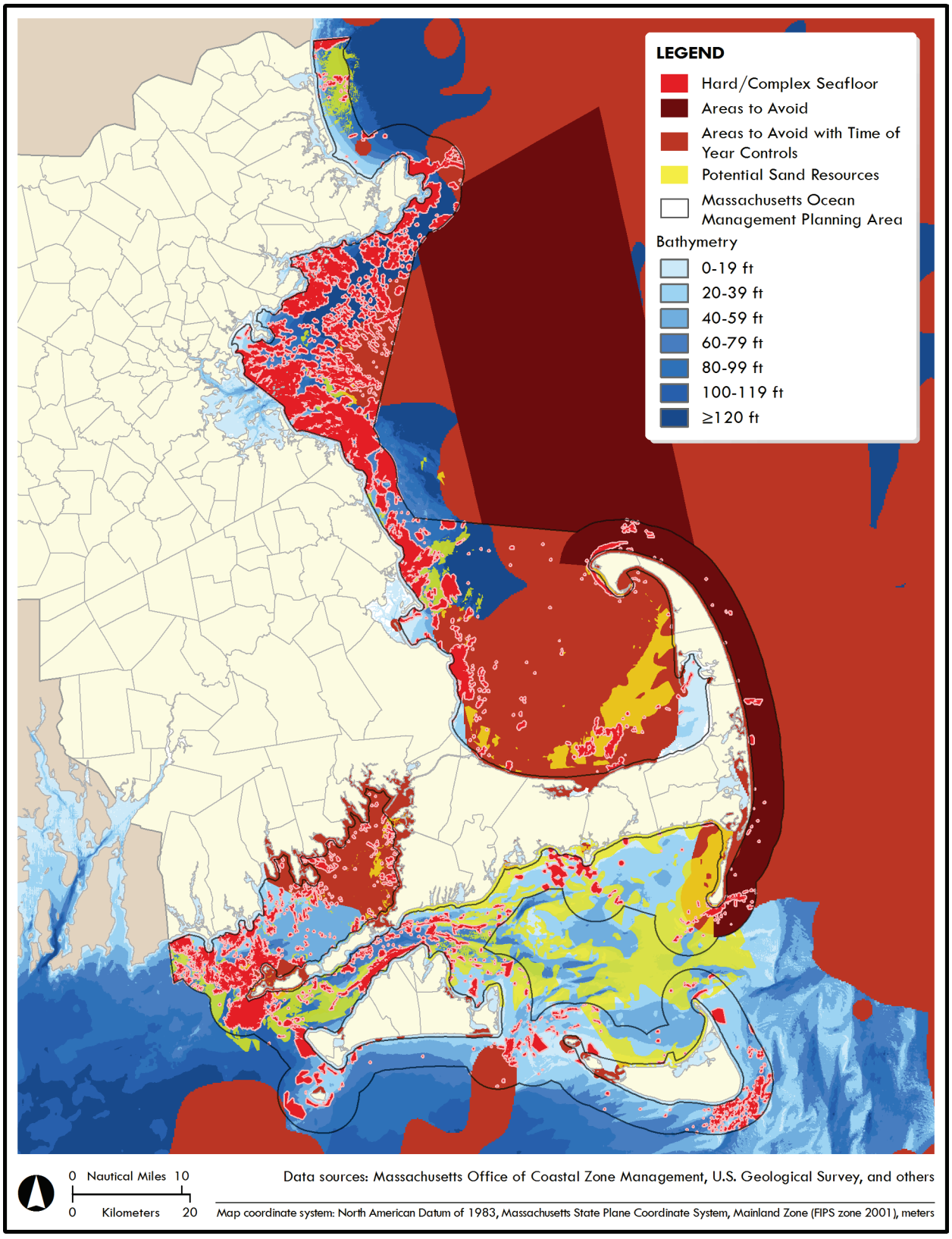

Figure Appendix 4-7. Areas to avoid for siting of potential offshore sand areas: hard/complex seafloor

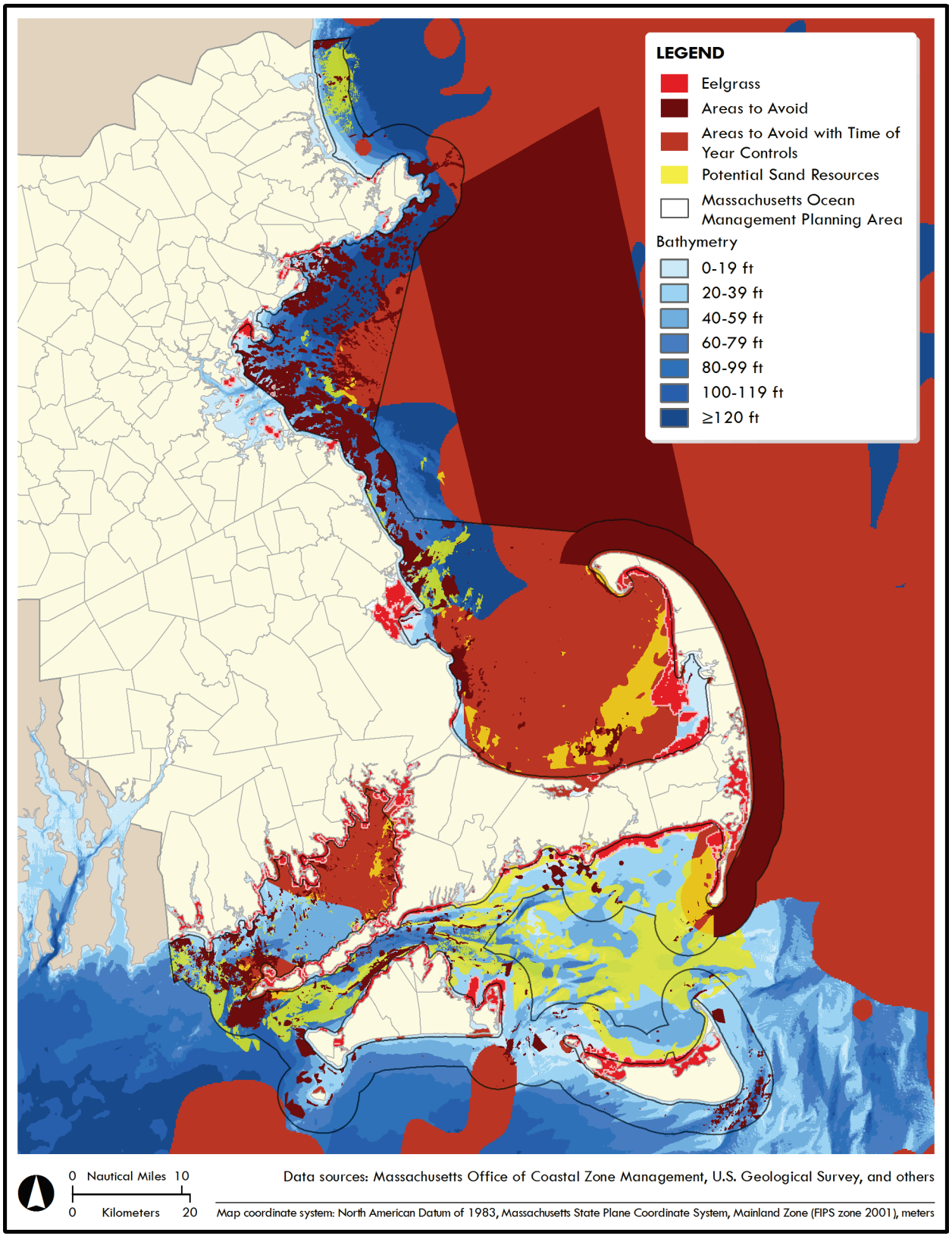

Figure Appendix 4-8. Areas to avoid for siting of potential offshore sand areas: eelgrass

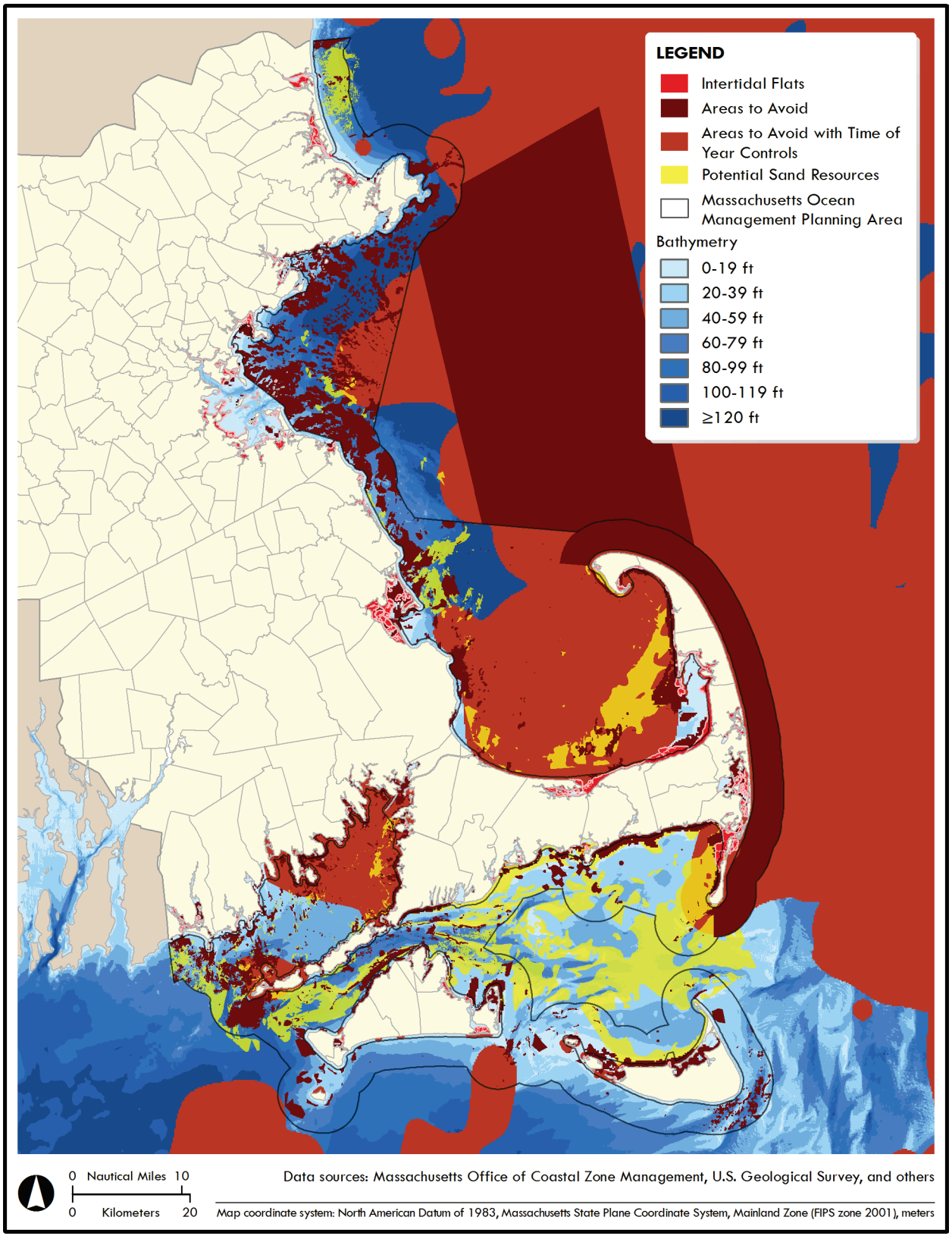

Figure Appendix 4-9. Areas to avoid for siting of potential offshore sand areas: intertidal flats

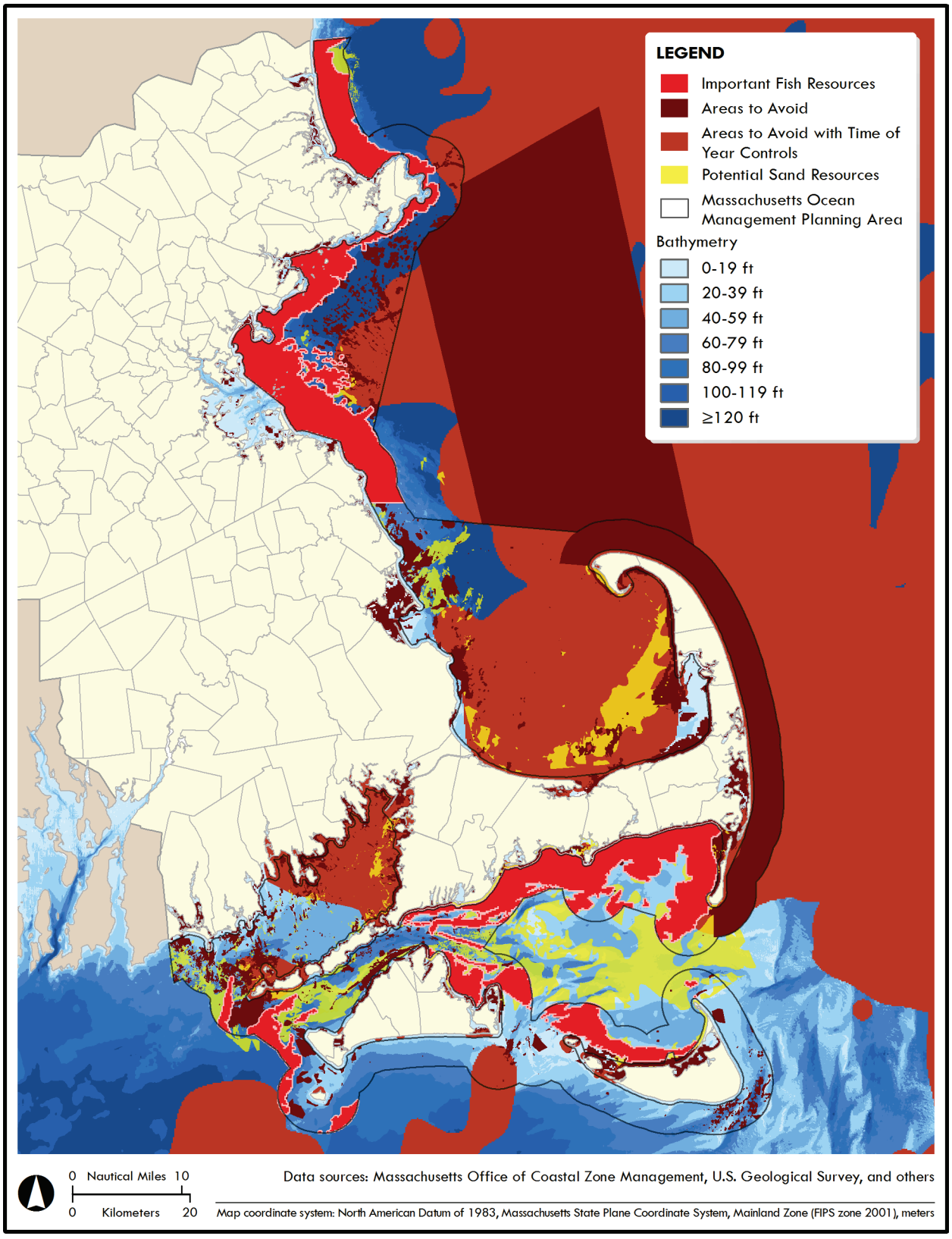

Figure Appendix 4-10. Areas to avoid for siting of potential offshore sand areas: important fish resources

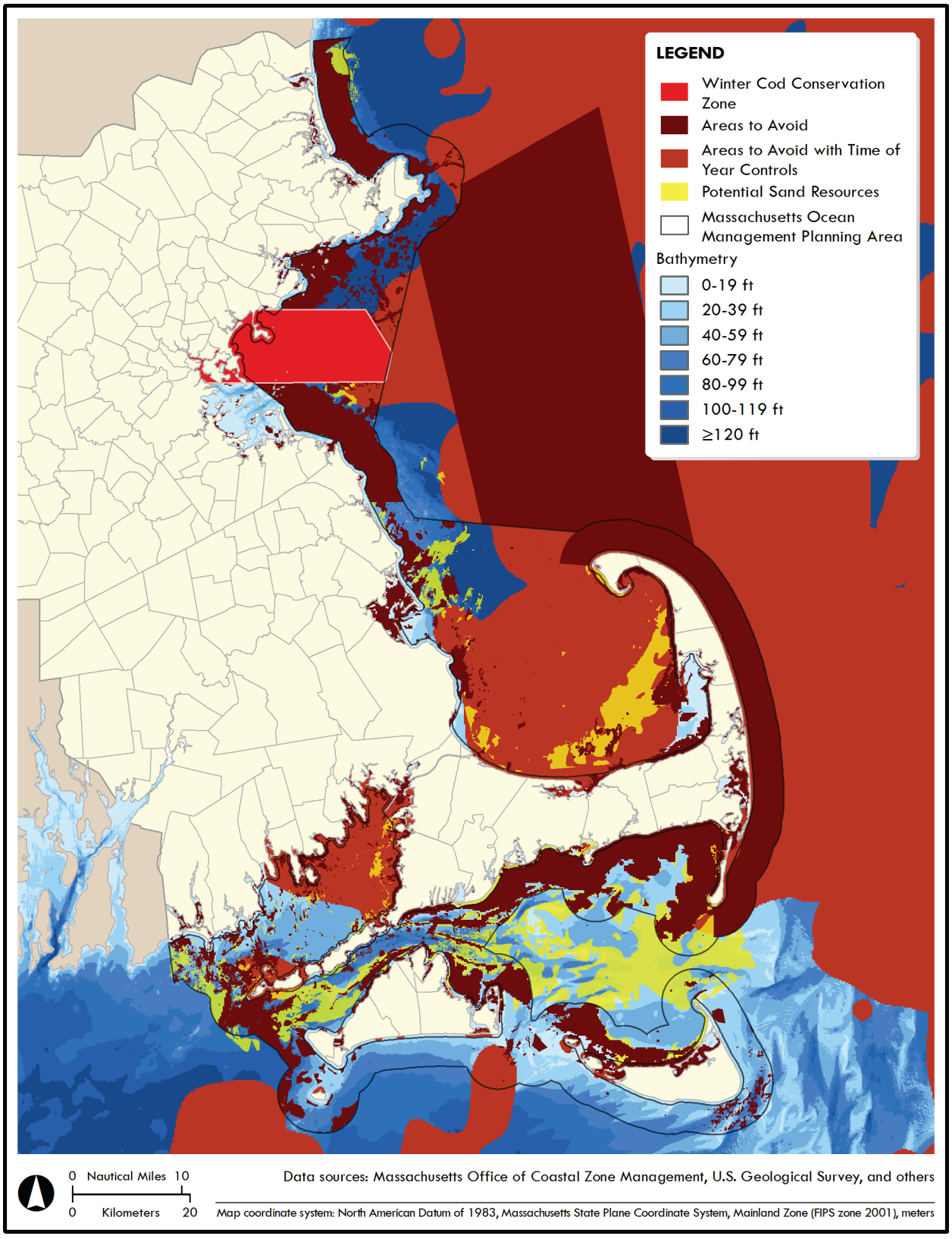

Figure Appendix 4-11. Areas to avoid for siting of potential offshore sand areas: Winter Cod Conservation Zone

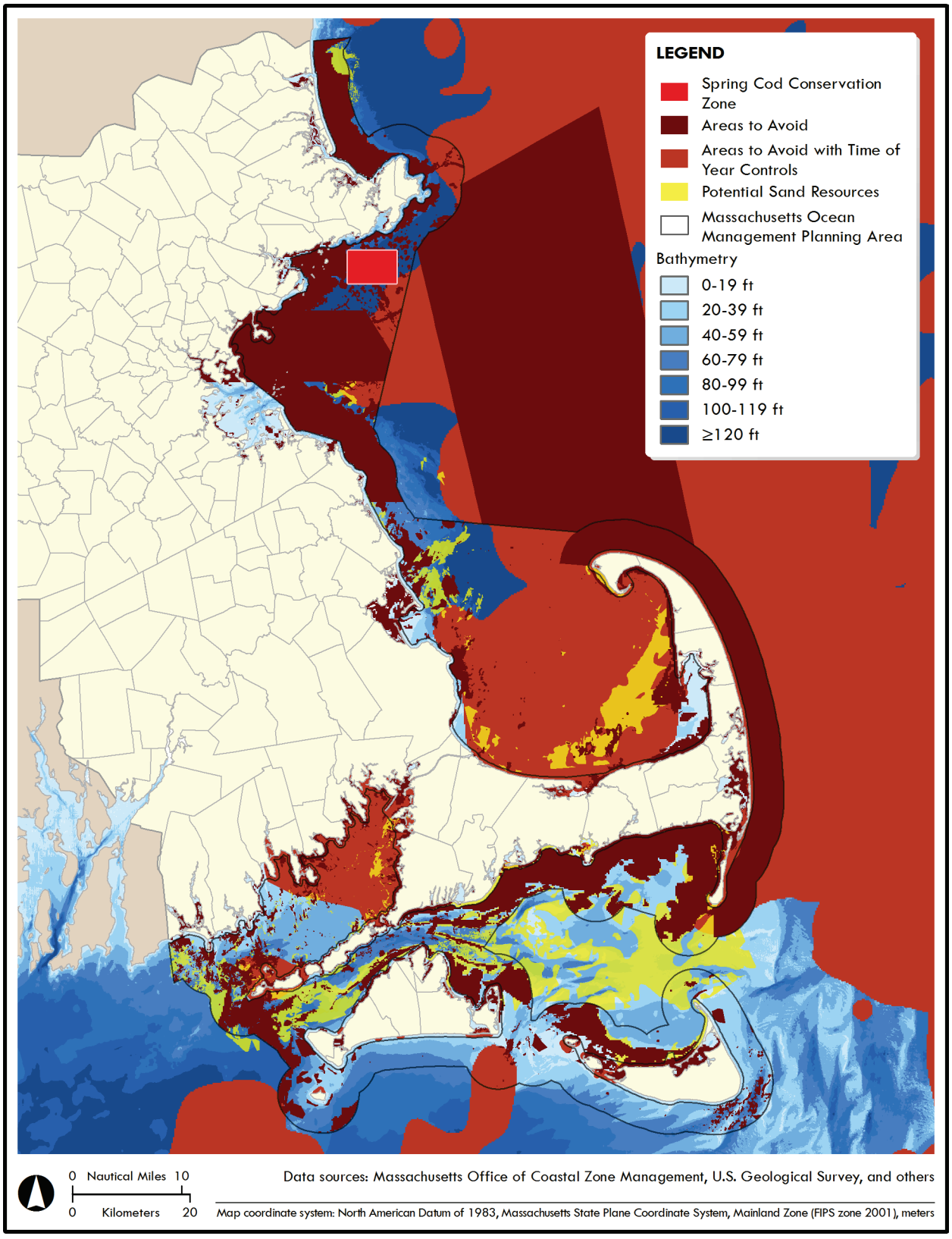

Figure Appendix 4-12. Areas to avoid for siting of potential offshore sand areas: Spring Cod Conservation Zone

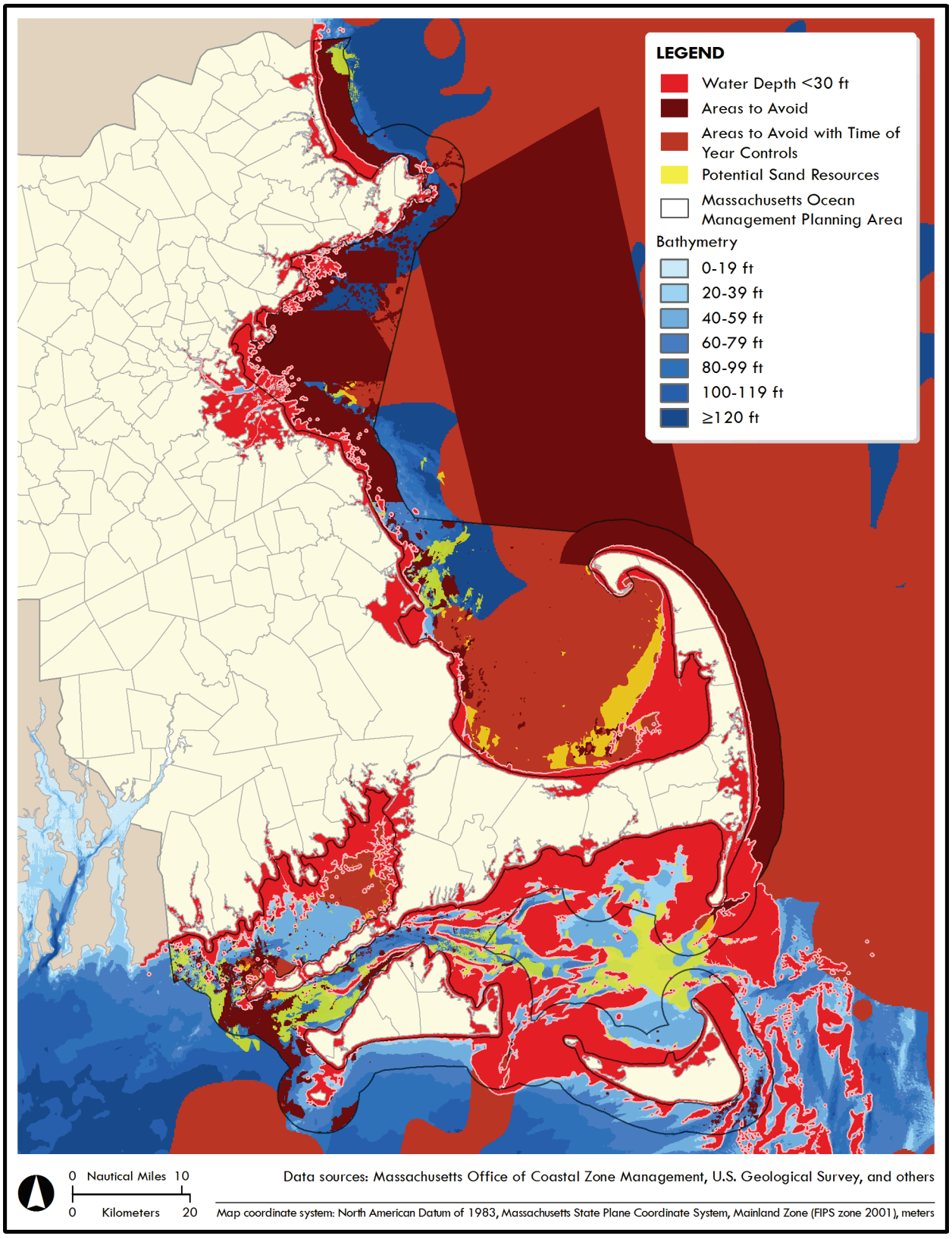

Figure Appendix 4-13. Areas to avoid for siting of potential offshore sand areas: areas of water depth <30 ft

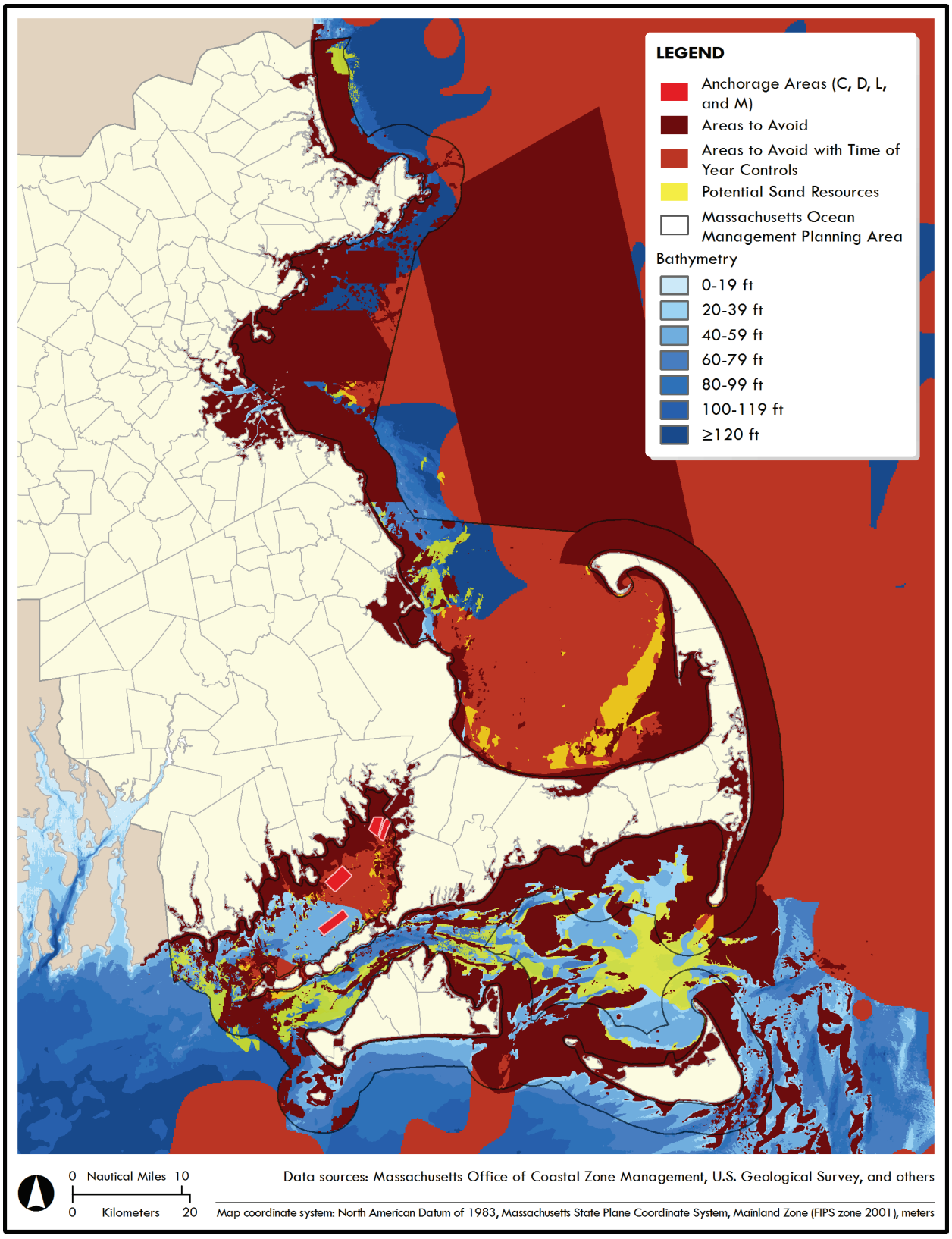

Figure Appendix 4-14. Areas to avoid for siting of potential offshore sand areas: anchorage areas (C, D, L, and M)

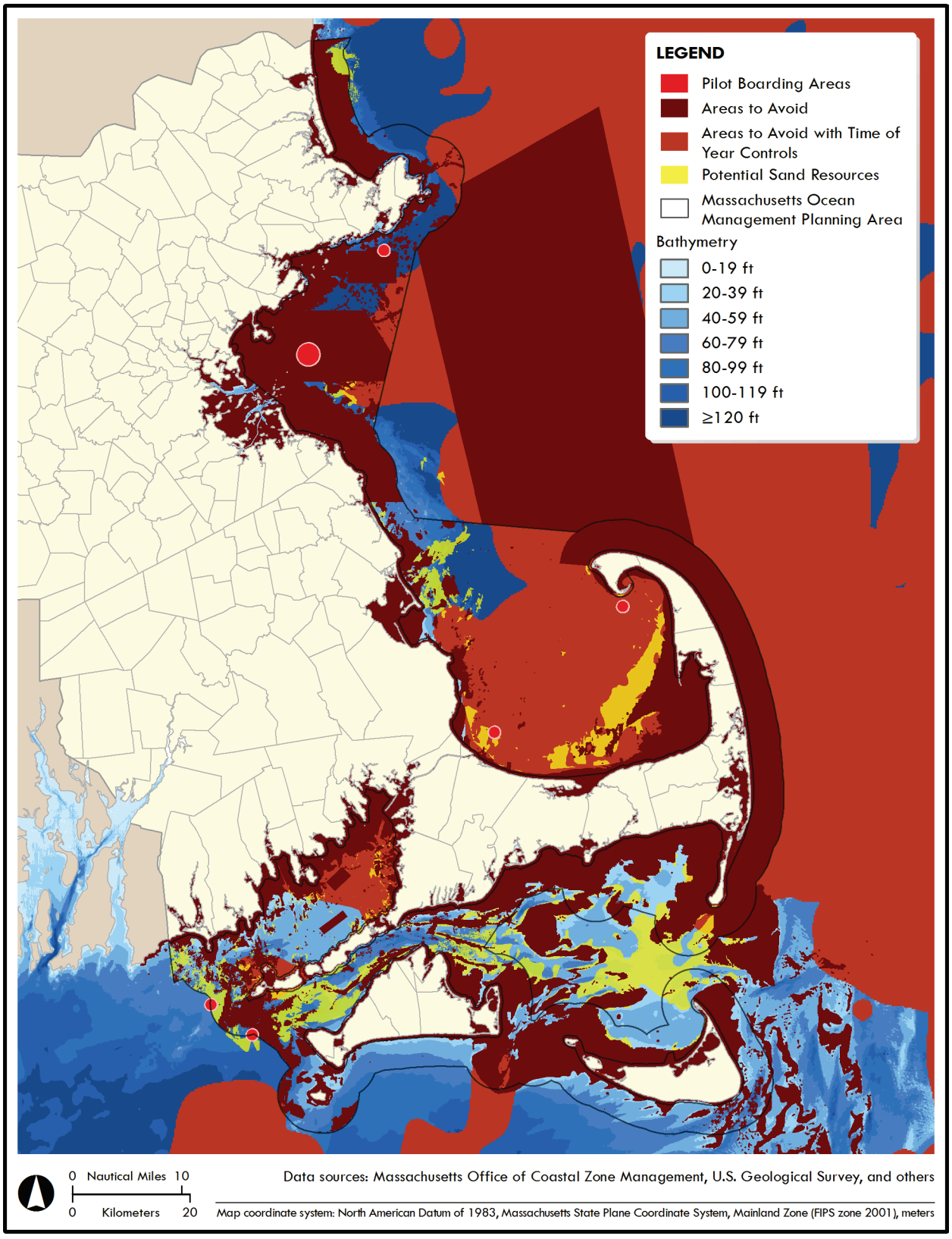

Figure Appendix 4-15. Areas to avoid for siting of potential offshore sand areas: pilot boarding areas

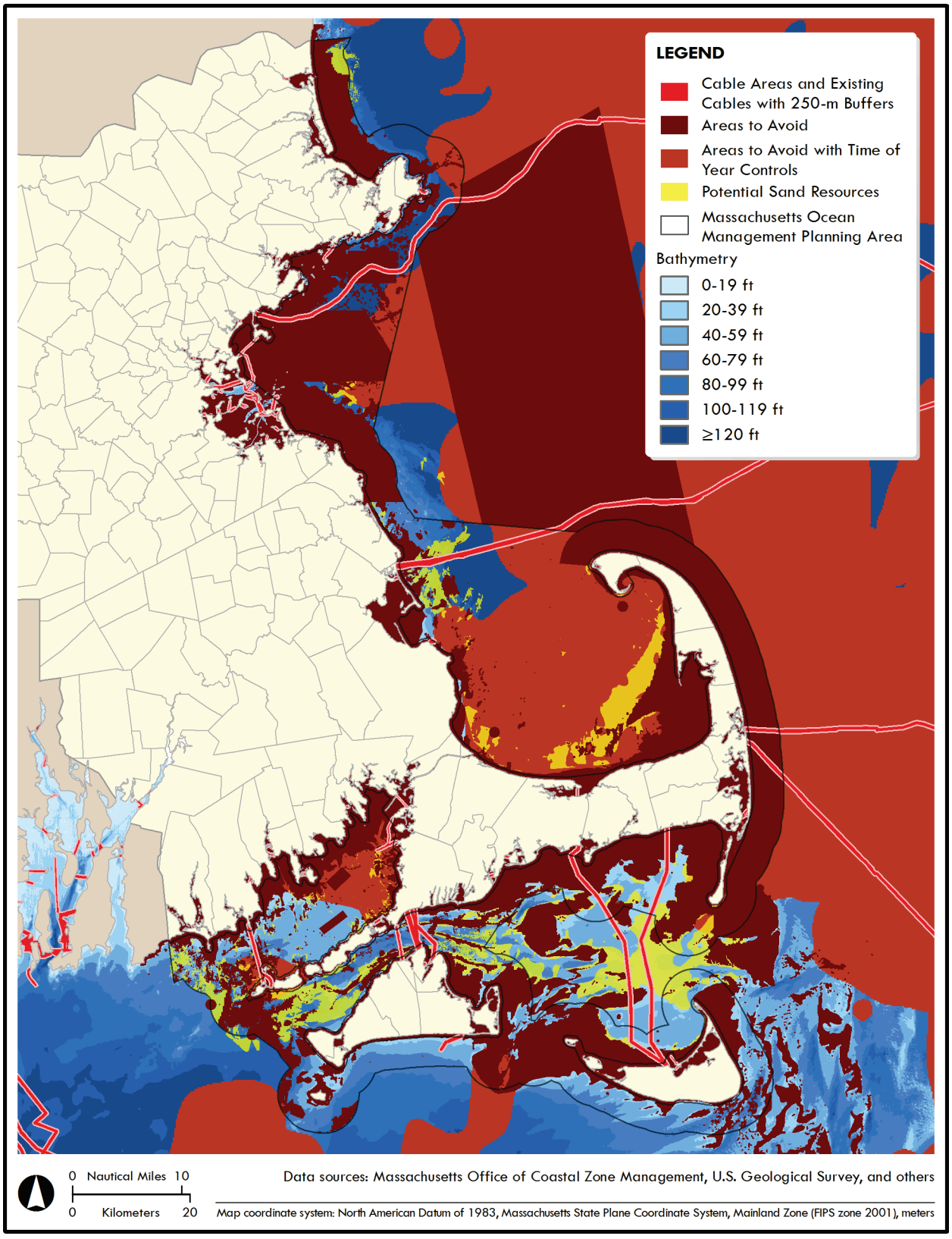

Figure Appendix 4-16. Areas to avoid for siting of potential offshore sand areas: cable areas and existing cables with 250-m buffers

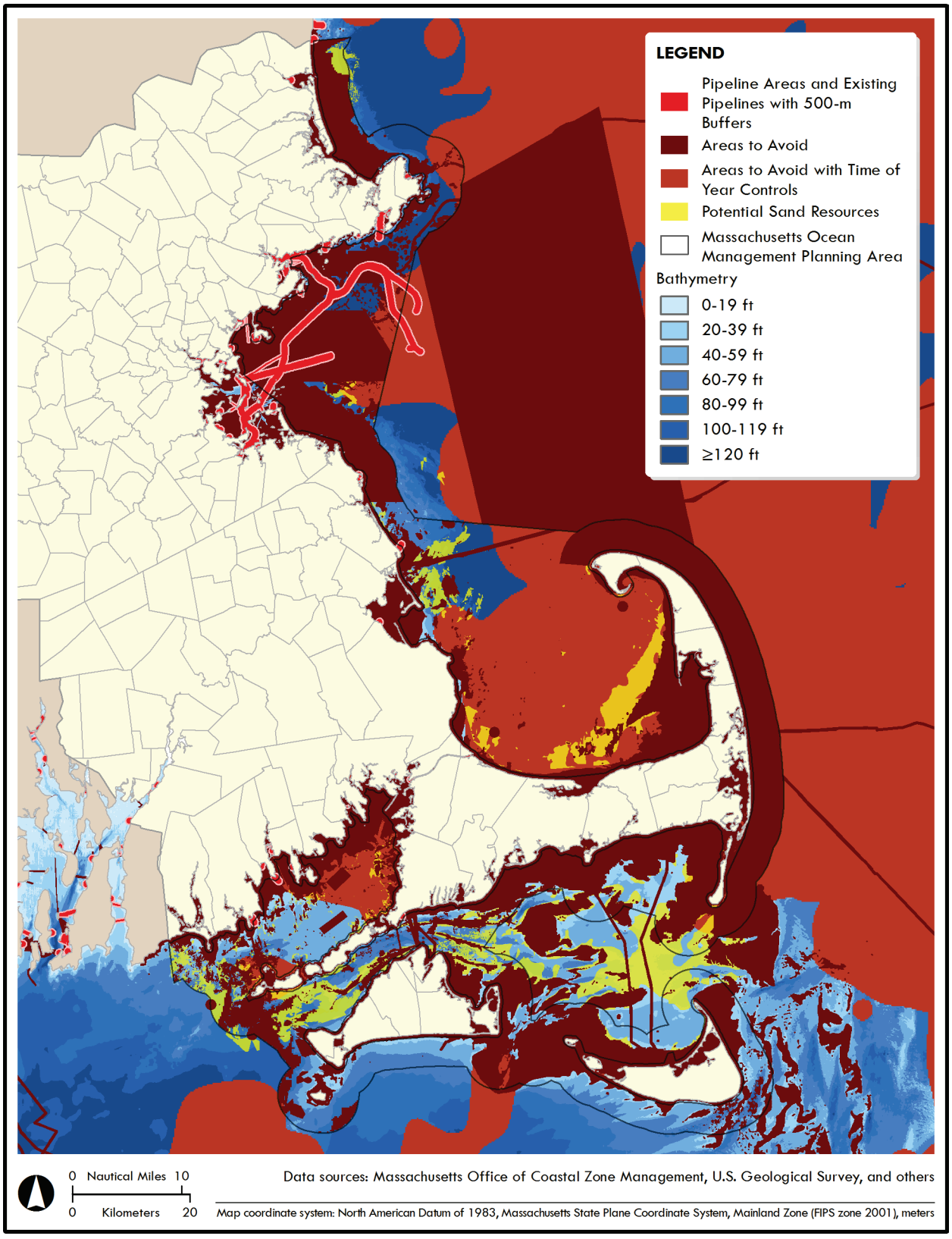

Figure Appendix 4-17. Areas to avoid for siting of potential offshore sand areas: pipeline areas and existing pipelines with 500-m buffers

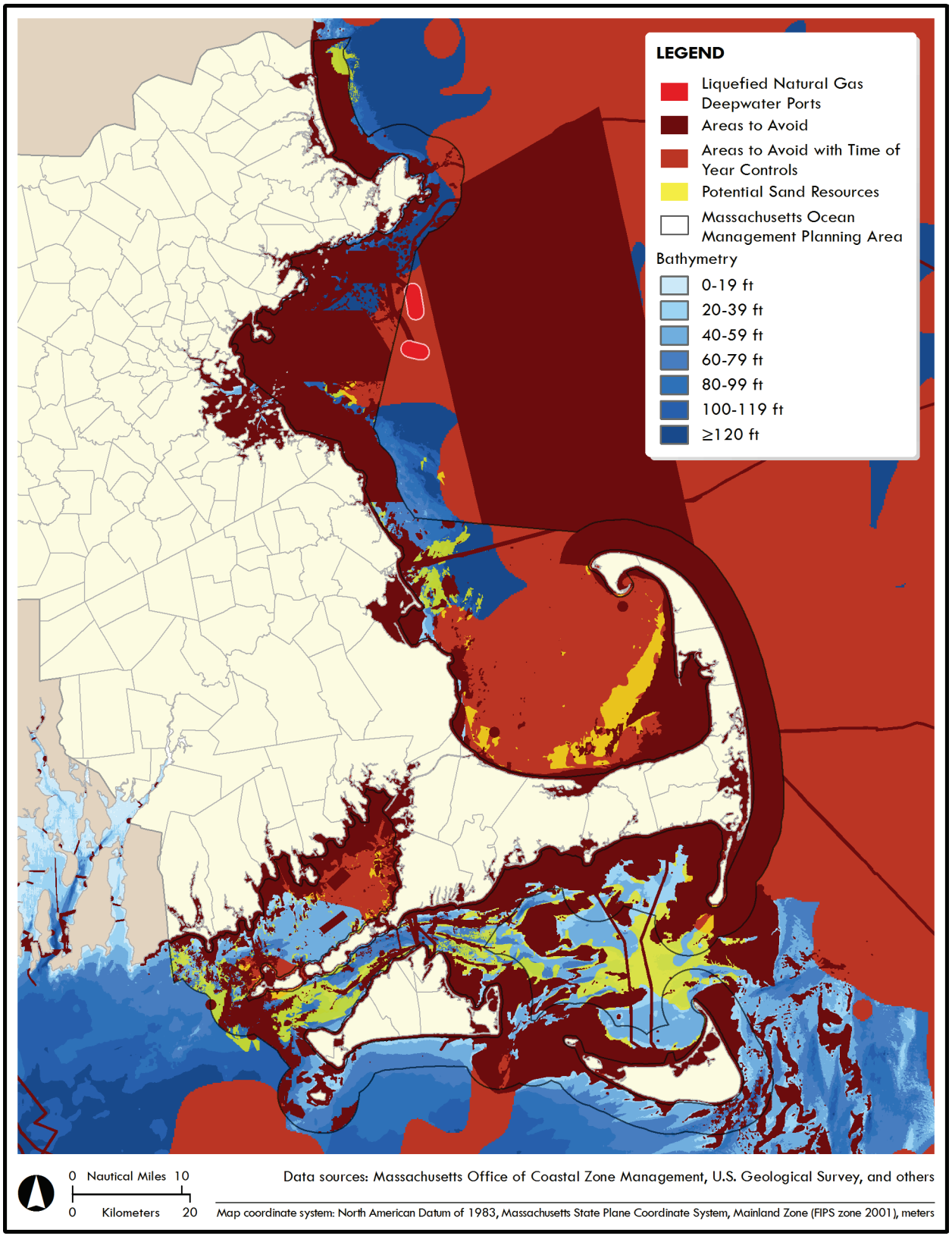

Figure Appendix 4-18. Areas to avoid for siting of potential offshore sand areas: liquefied natural gas deepwater ports

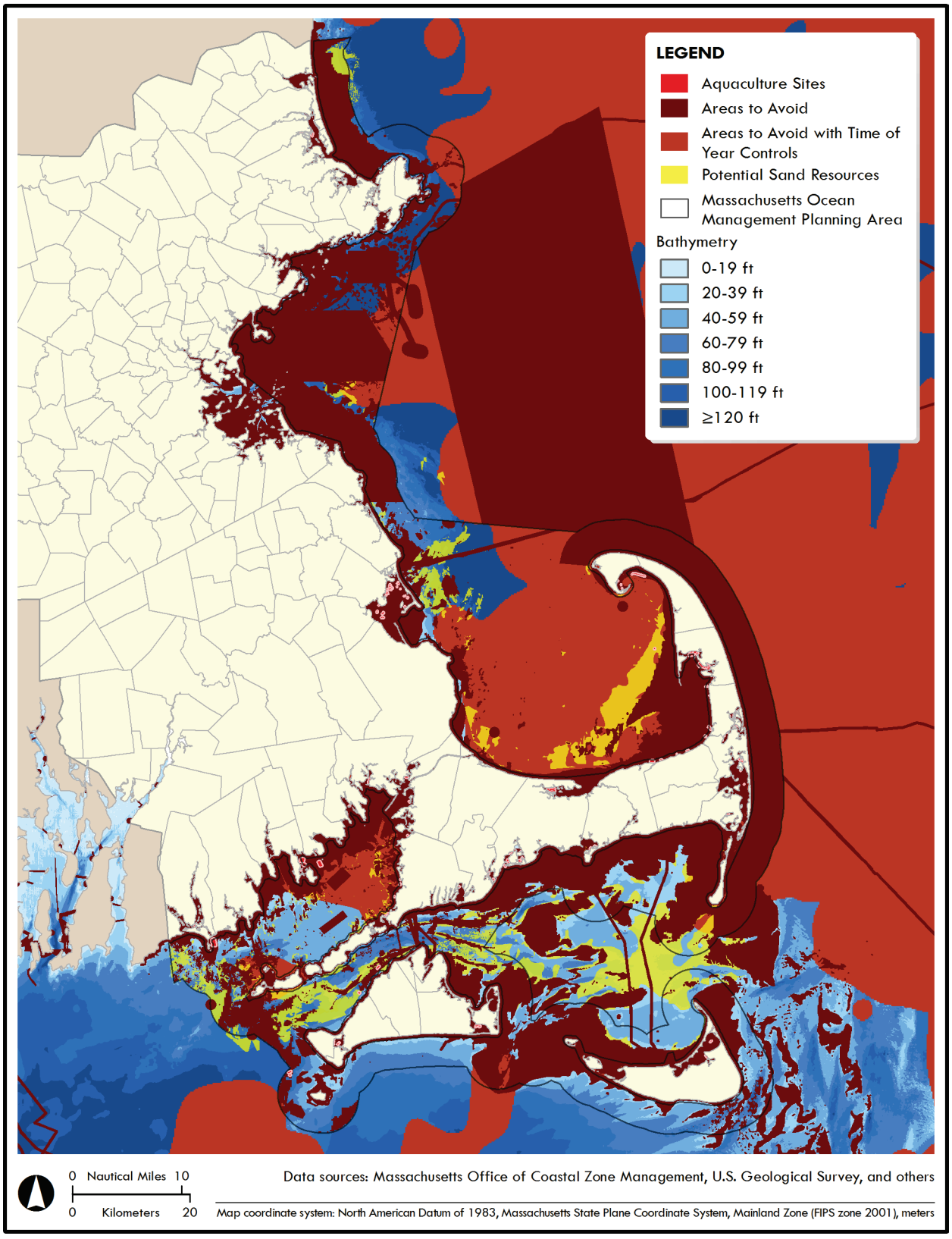

Figure Appendix 4-19. Areas to avoid for siting of potential offshore sand areas: aquaculture sites

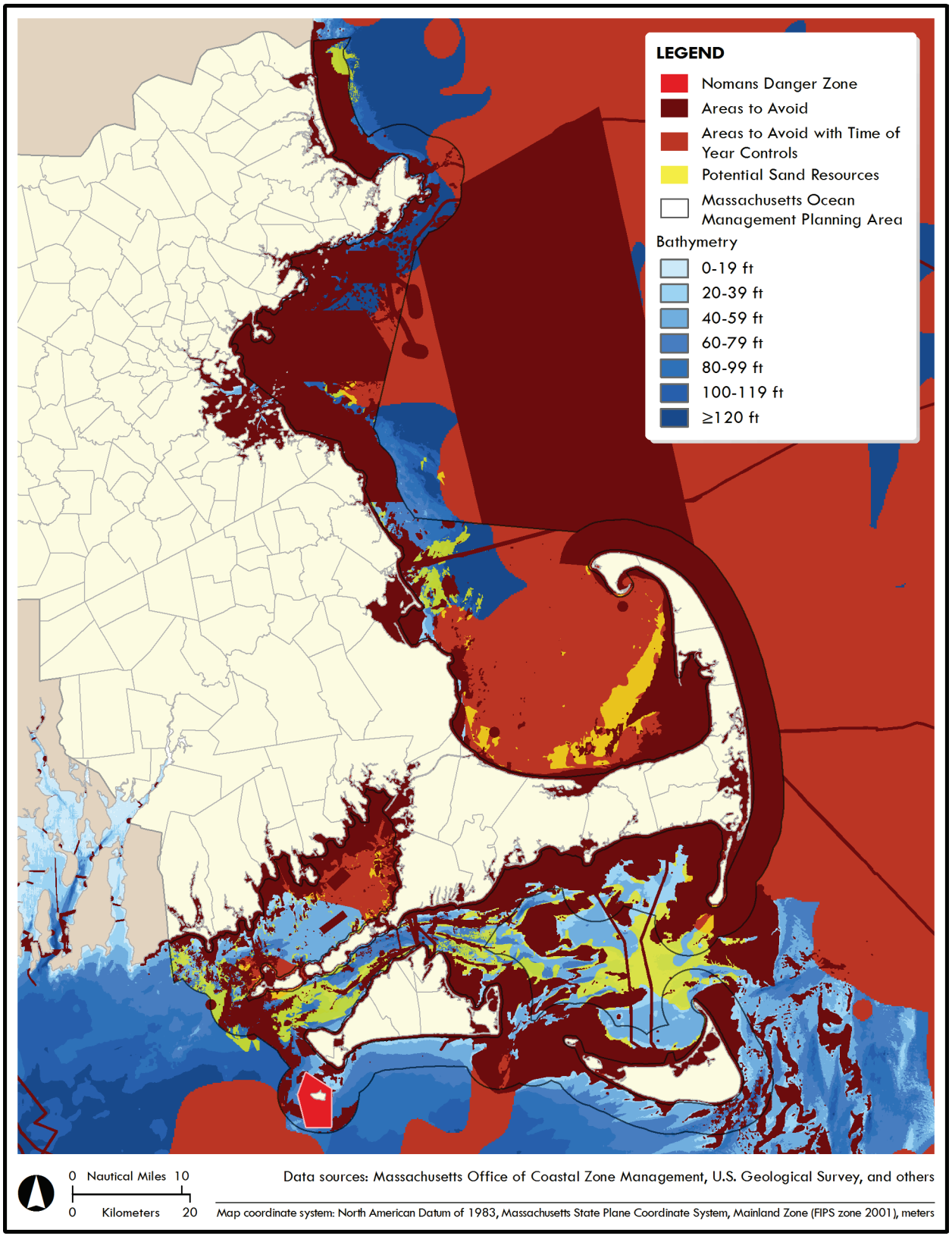

Figure Appendix 4-20. Areas to avoid for siting of potential offshore sand areas: Nomans Danger Zone

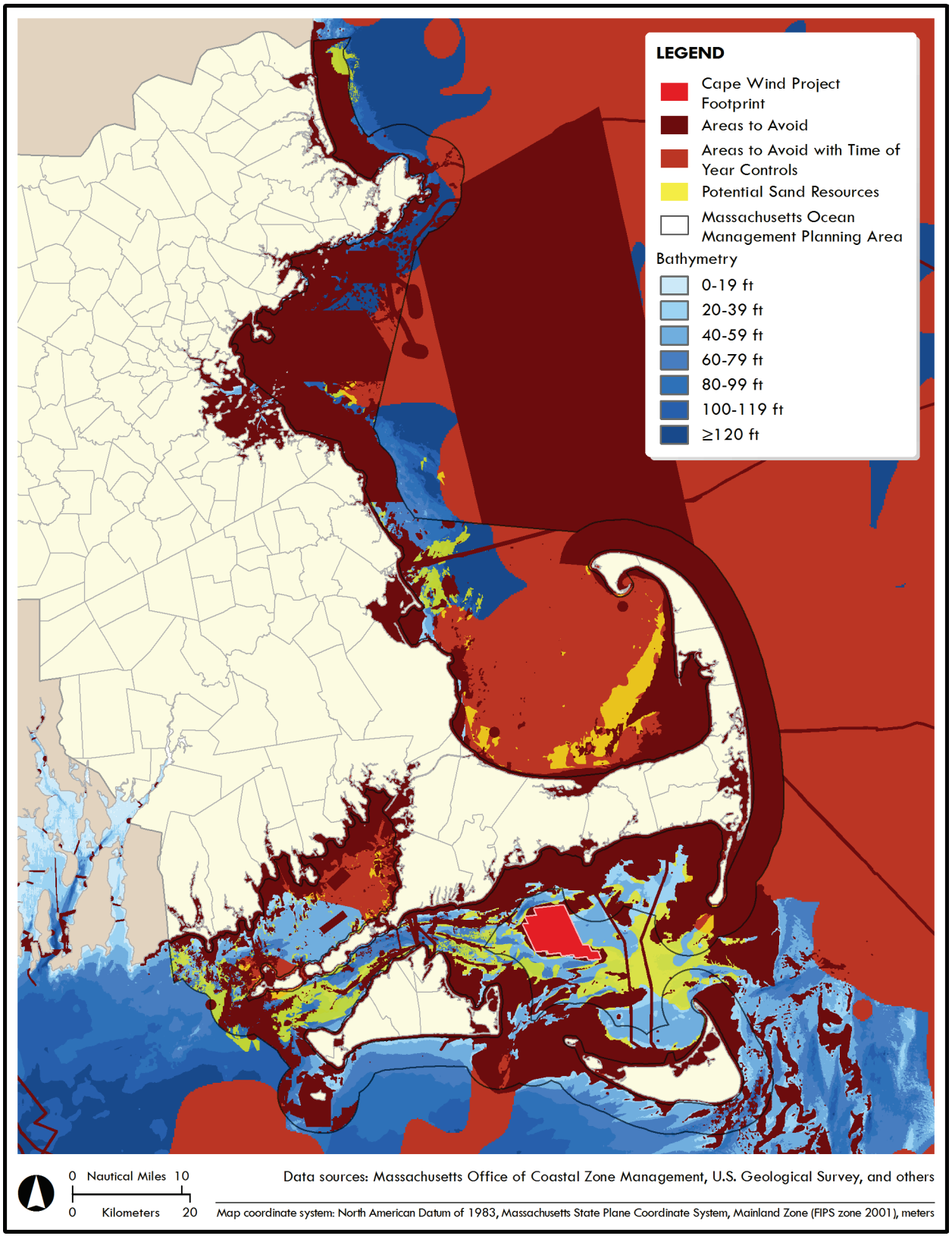

Figure Appendix 4-21. Areas to avoid for siting of potential offshore sand areas: Cape Wind project footprint

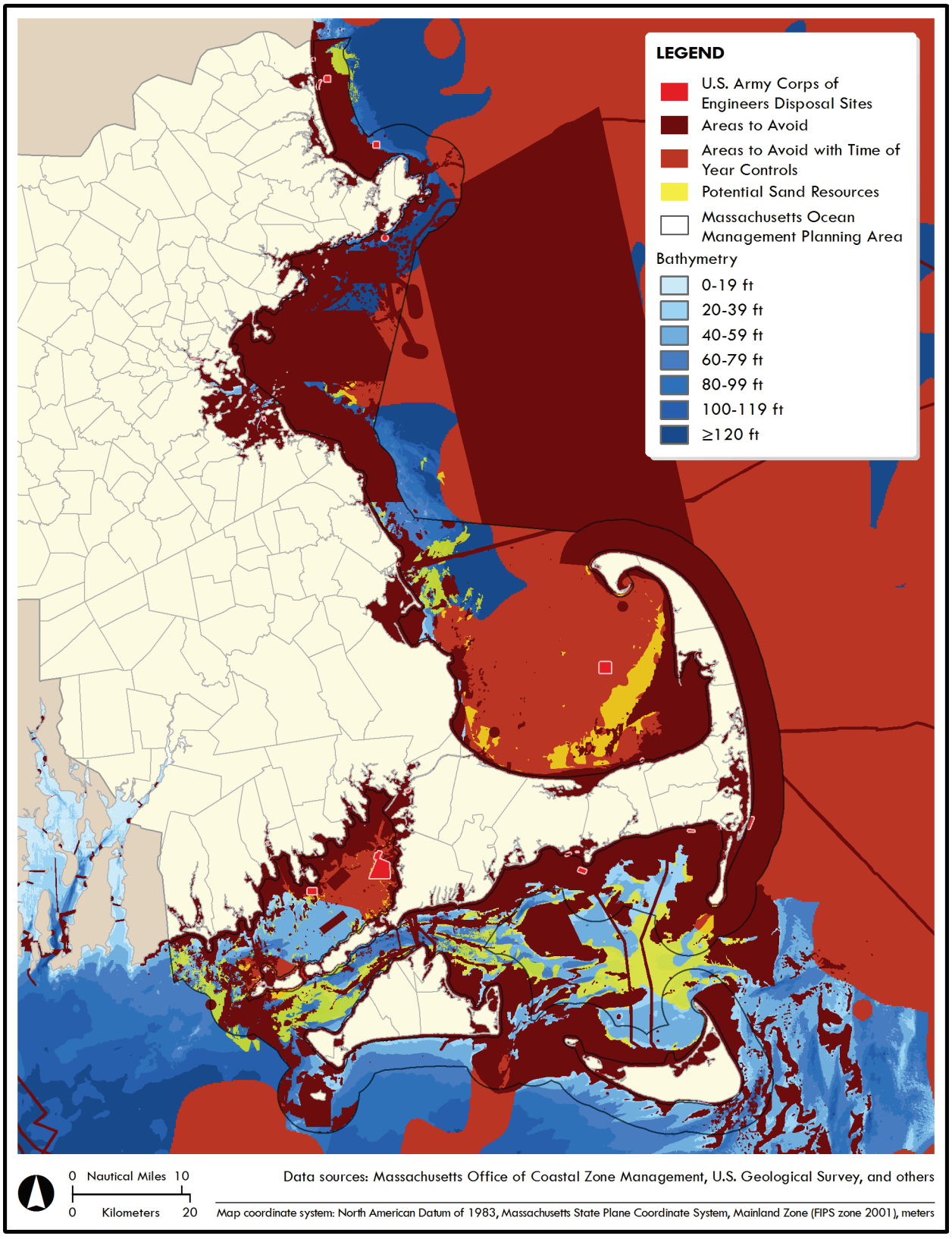

Figure Appendix 4-22. Areas to avoid for siting of potential offshore sand areas: U.S. Army Corps of Engineers disposal sites

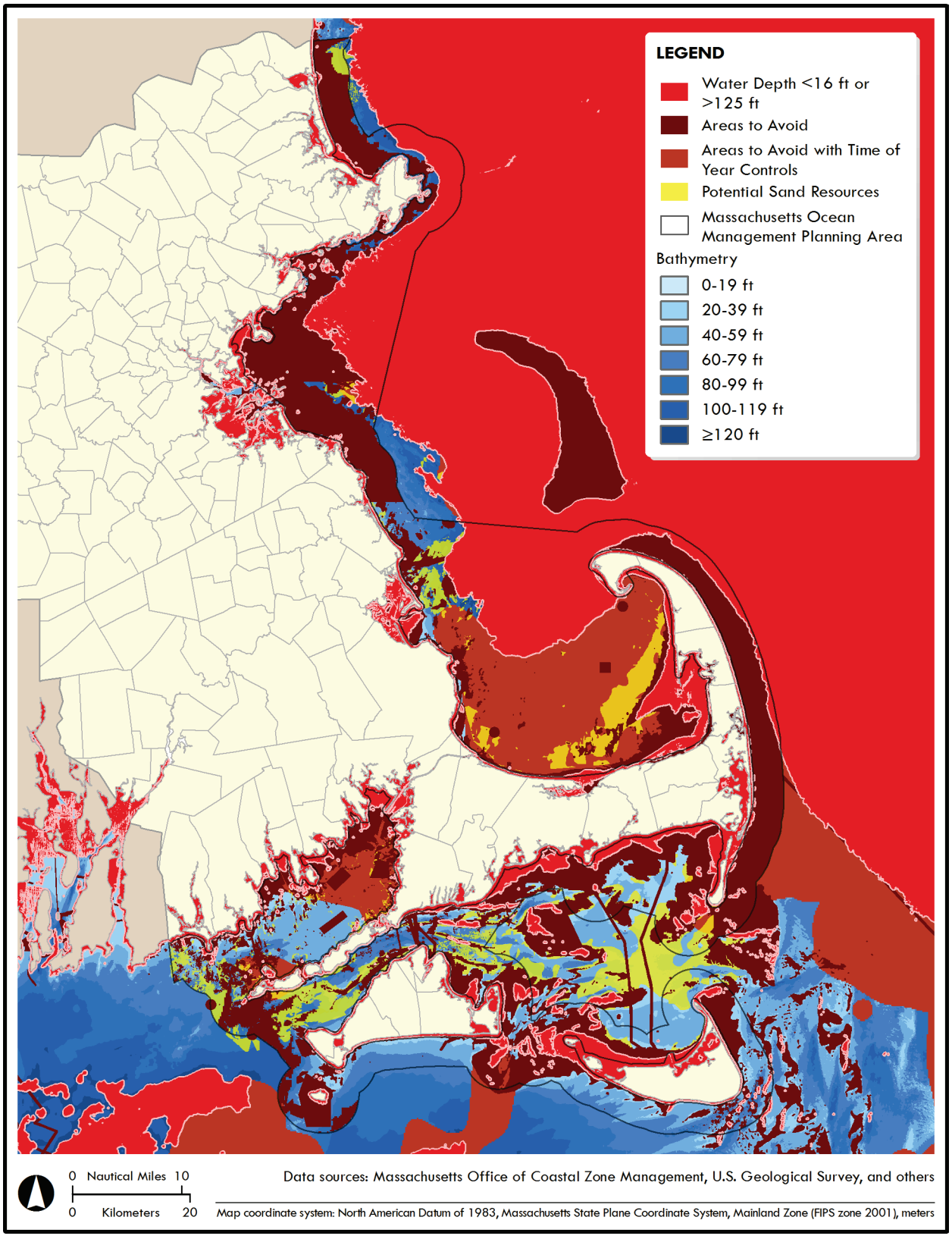

Figure Appendix 4-23. Areas to avoid for siting of potential offshore sand areas: water depth <16 ft (minimum draft of dredge when loaded) or >125 ft (maximum operating depth of dredge)

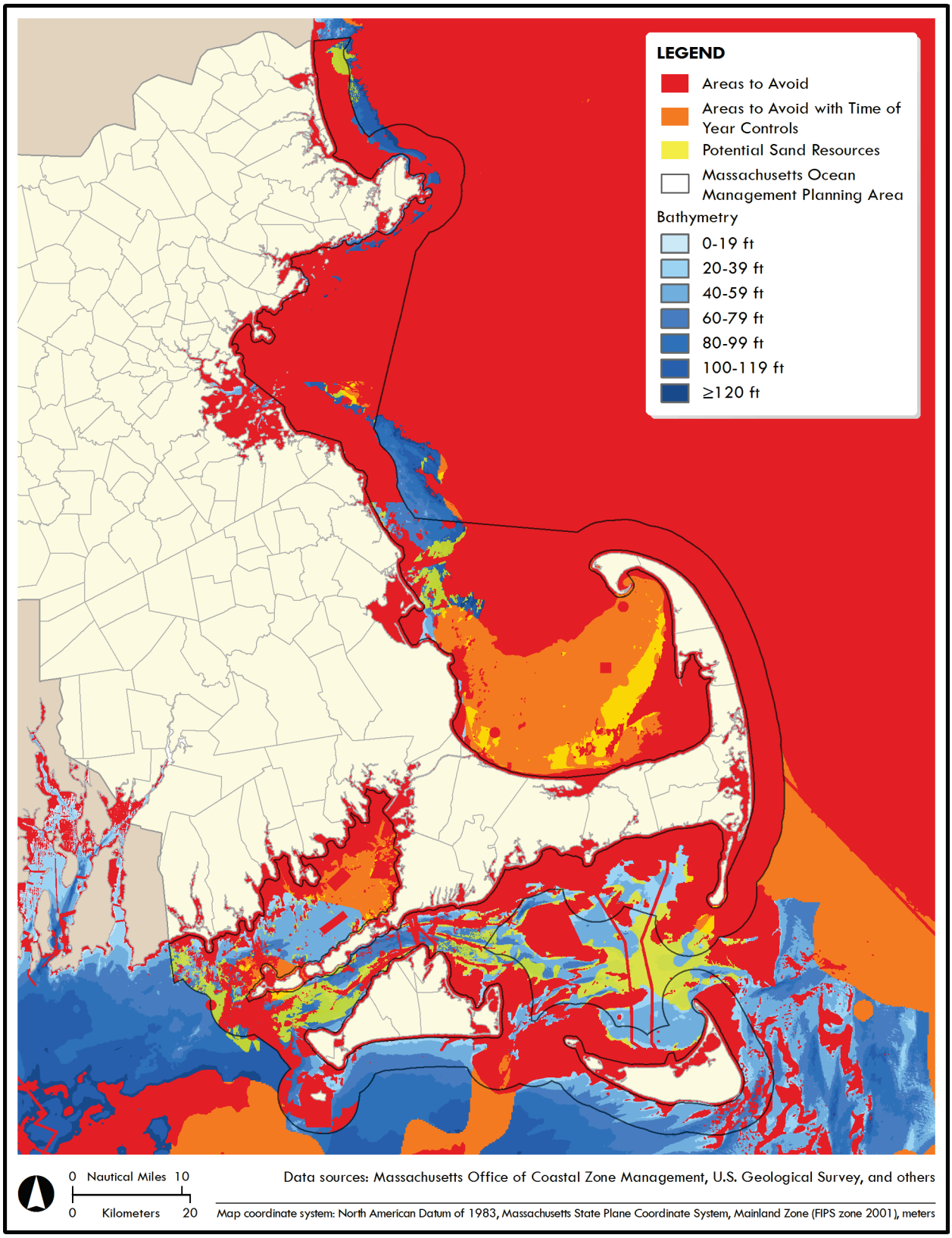

Figure Appendix 4-24. Areas to avoid for siting of potential offshore sand areas

Appendix 5 - Areas to Avoid and Areas of Concern for Siting Analysis for Offshore Wind Transmission Cable Corridors

As described in Chapter 2 (of Volume 1), building on the work and approaches in the 2009 ocean plan, the 2014 draft ocean plan employs a compatibility assessment, screening analysis, and optimization tool to identify potential transmission corridor routes for further characterization, investigation, and assessment work, with the goal of synchronizing transmission planning and siting with the next stages in the BOEM process, including leasing, site assessment, and NEPA analysis.

Through the analysis, areas to avoid and areas of concern were identified based on potential biological and physical environmental impacts, incompatibility, limitations and specifications of transmission cable installation operations, and/or adverse interactions with existing uses and sites to avoid. This Appendix contains all of the maps of the designated the areas to avoid and areas of concern for siting of potential offshore wind transmission cables corridors, listed in Table Appendix 5-1.

Table Appendix 5-1. Areas to avoid and areas of concern for siting of potential offshore wind transmission cables corridors

Category	Areas to avoid
SSU Resources	North Atlantic right whale core habitat
	Humpback whale core habitat
	Fin whale core habitat
	Hard/complex seafloor
	Eelgrass
	Intertidal flats
Seafloor Substrate	Areas of rock from surficial sediment dataset
Transportation and Navigation Uses	Anchorage Areas (C, D, L, and M)
Aquaculture Uses	Aquaculture sites
Sites to Avoid	Nomans Danger Zone
	Cape Wind project footprint
	U.S. Army Corps of Engineers disposal sites
Areas of Operational Limitation	Water depth <16 feet (limitations to cable installation vessels due to draft, currents, navigational hazards)
Category	**Areas of concern**
SSU Resources	Important fish resources
Infrastructure Uses	Cable areas and existing cables with 250-m buffers
	Pipeline areas and existing pipelines with 500-m buffers

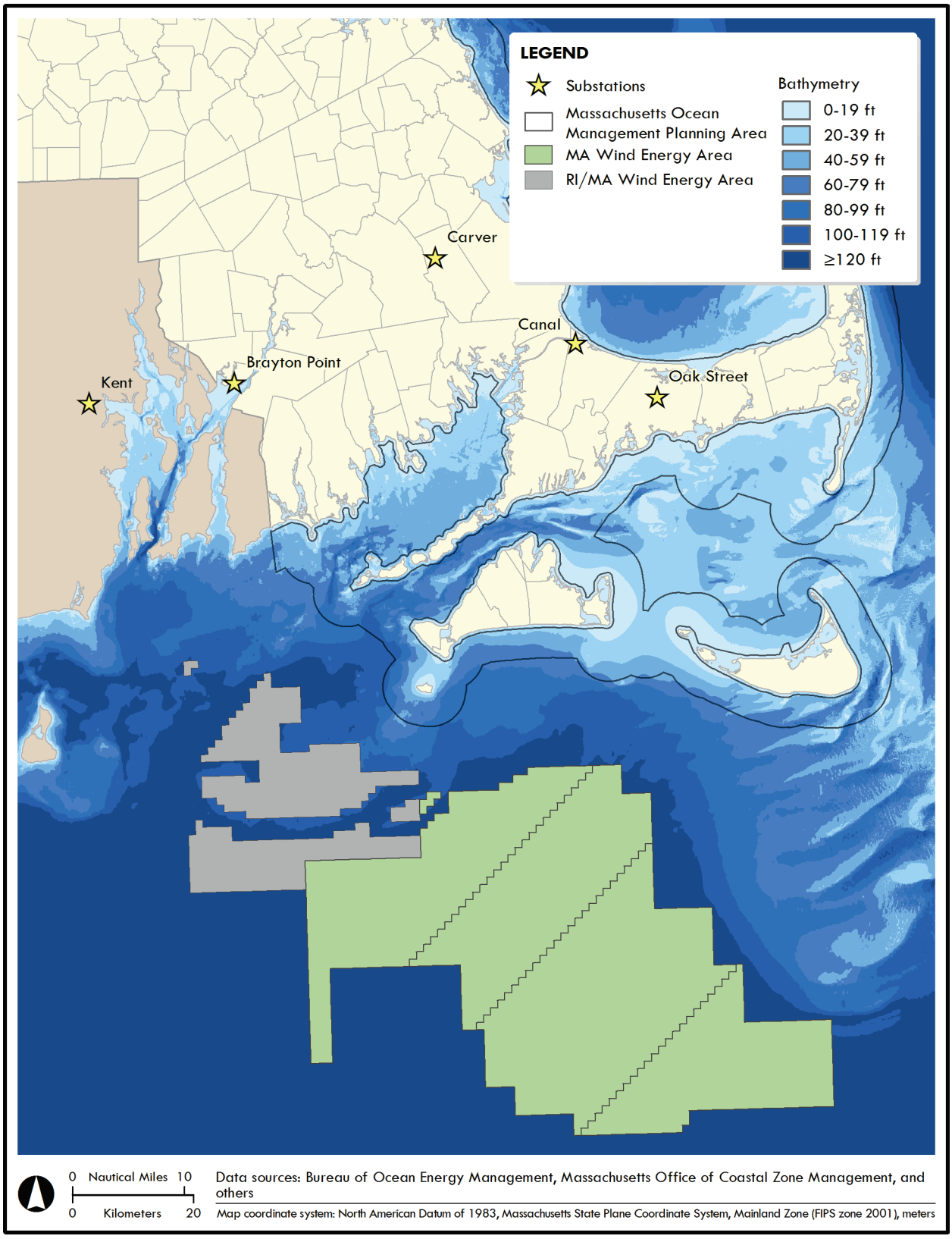

Figure Appendix 5-1. Federal Wind Energy Areas and priority substations

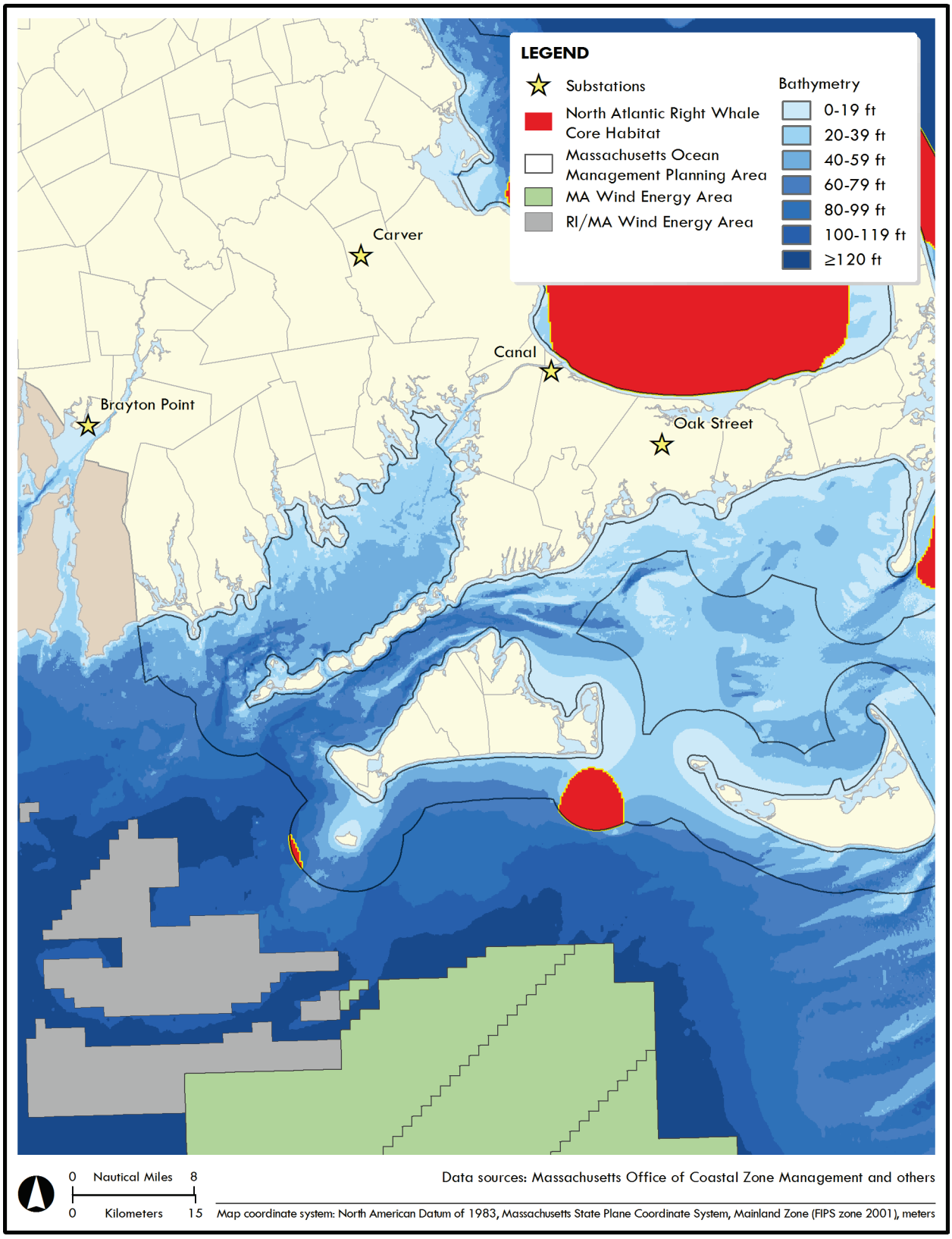

Figure Appendix 5-2. Areas to avoid for siting of potential offshore wind transmission cable corridors: North Atlantic right whale core habitat

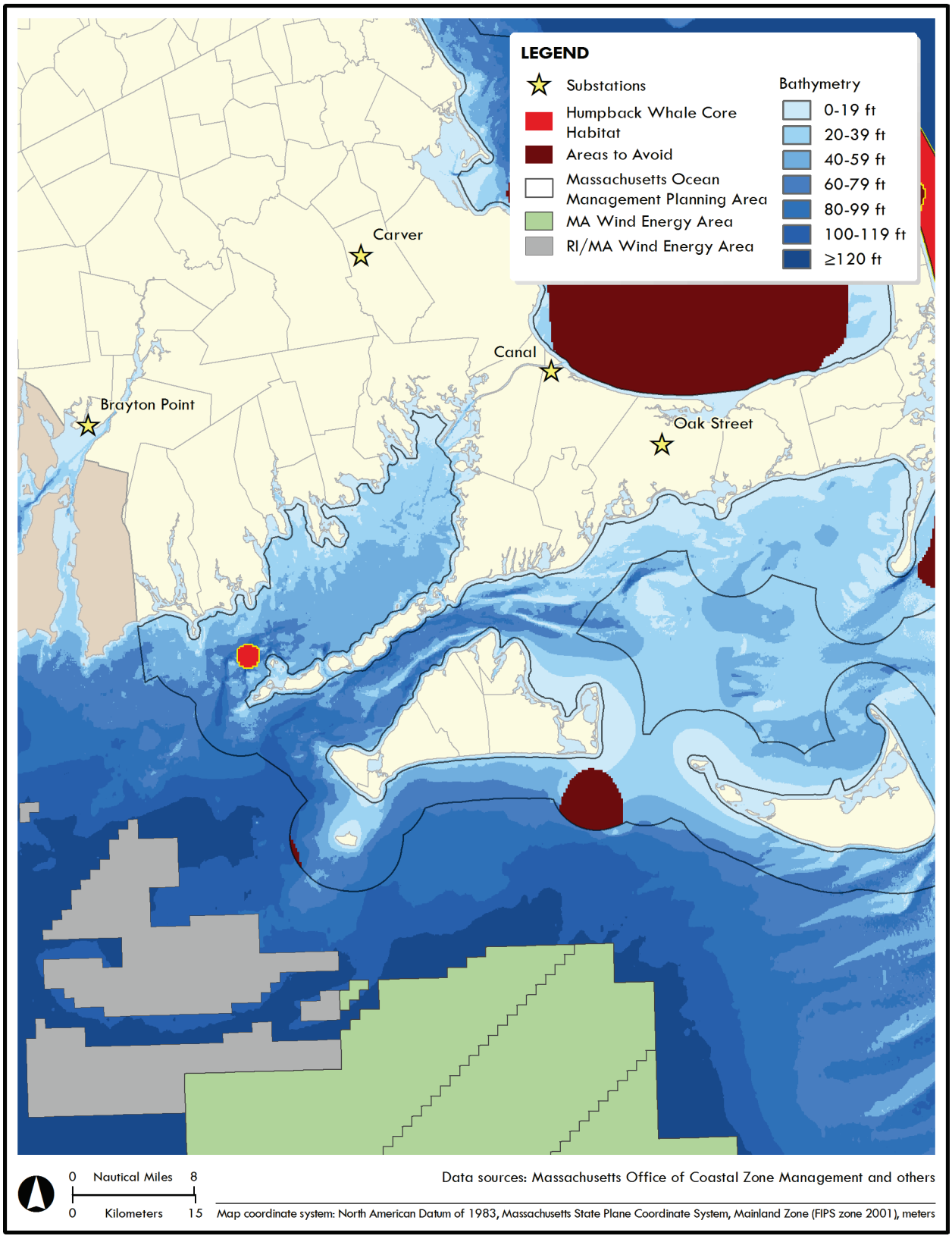

Figure Appendix 5-3. Areas to avoid for siting of potential offshore wind transmission cable corridors: humpback whale core habitat

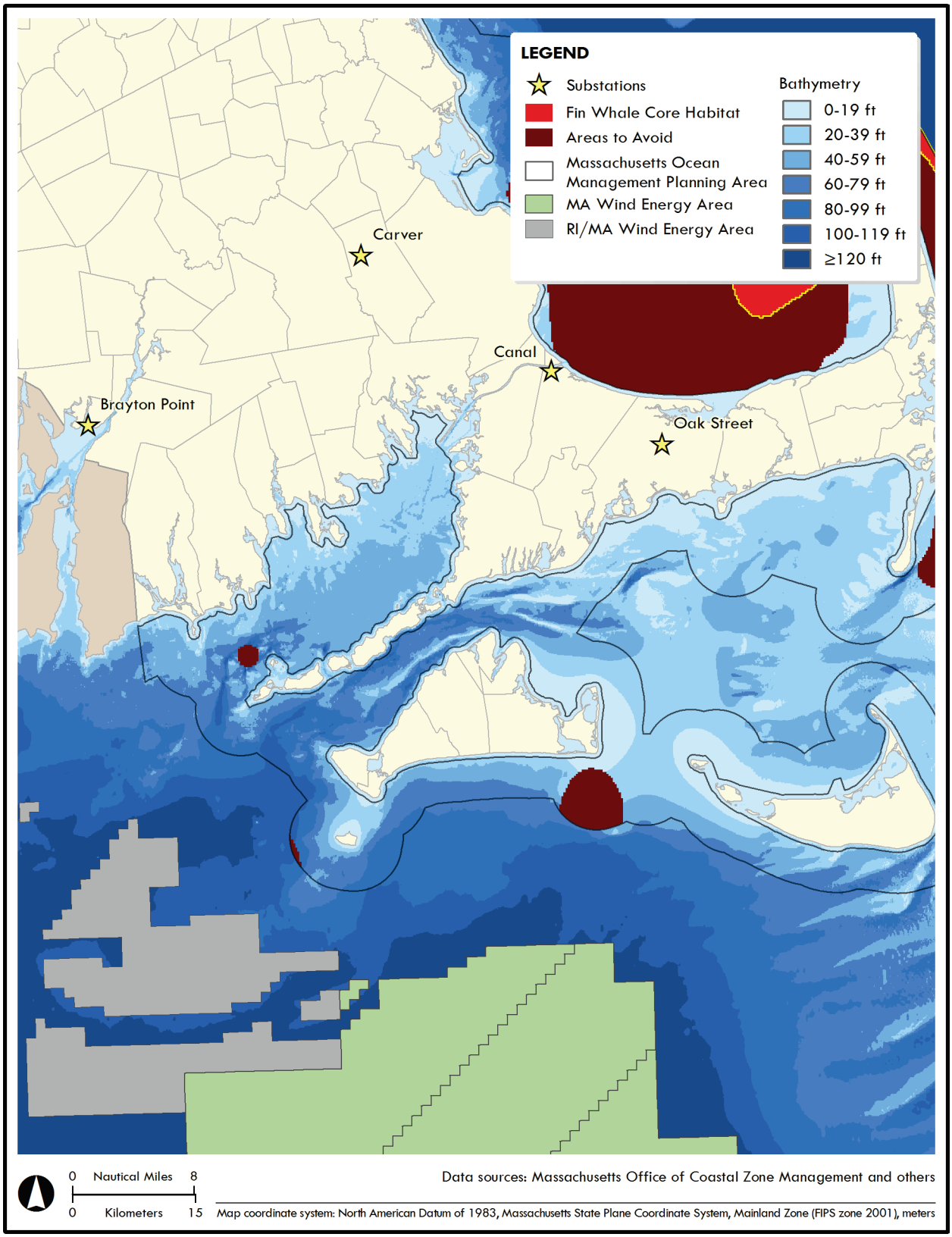

Figure Appendix 5-4. Areas to avoid for siting of potential offshore wind transmission cable corridors: fin whale core habitat

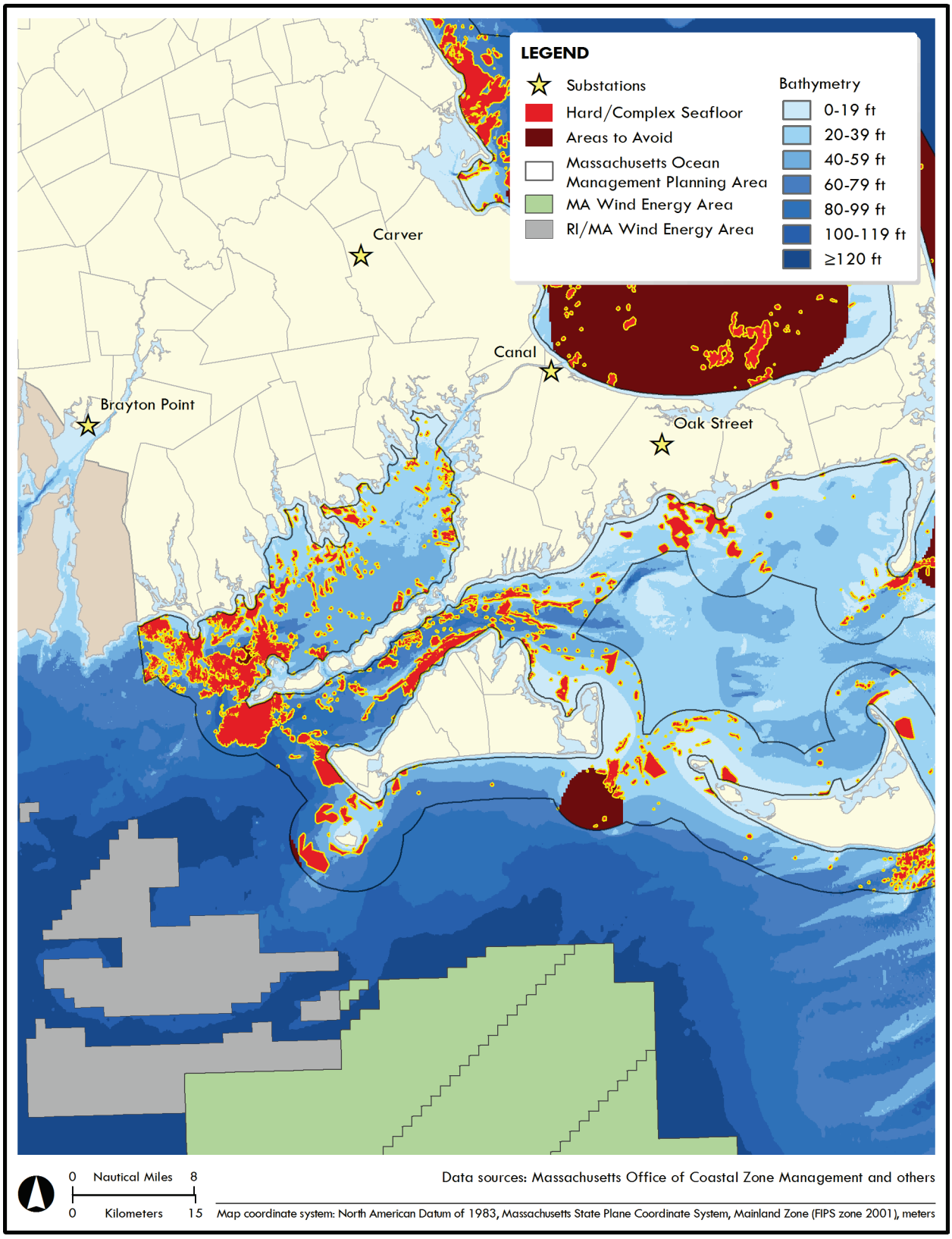

Figure Appendix 5-5. Areas to avoid for siting of potential offshore wind transmission cable corridors: hard/complex seafloor

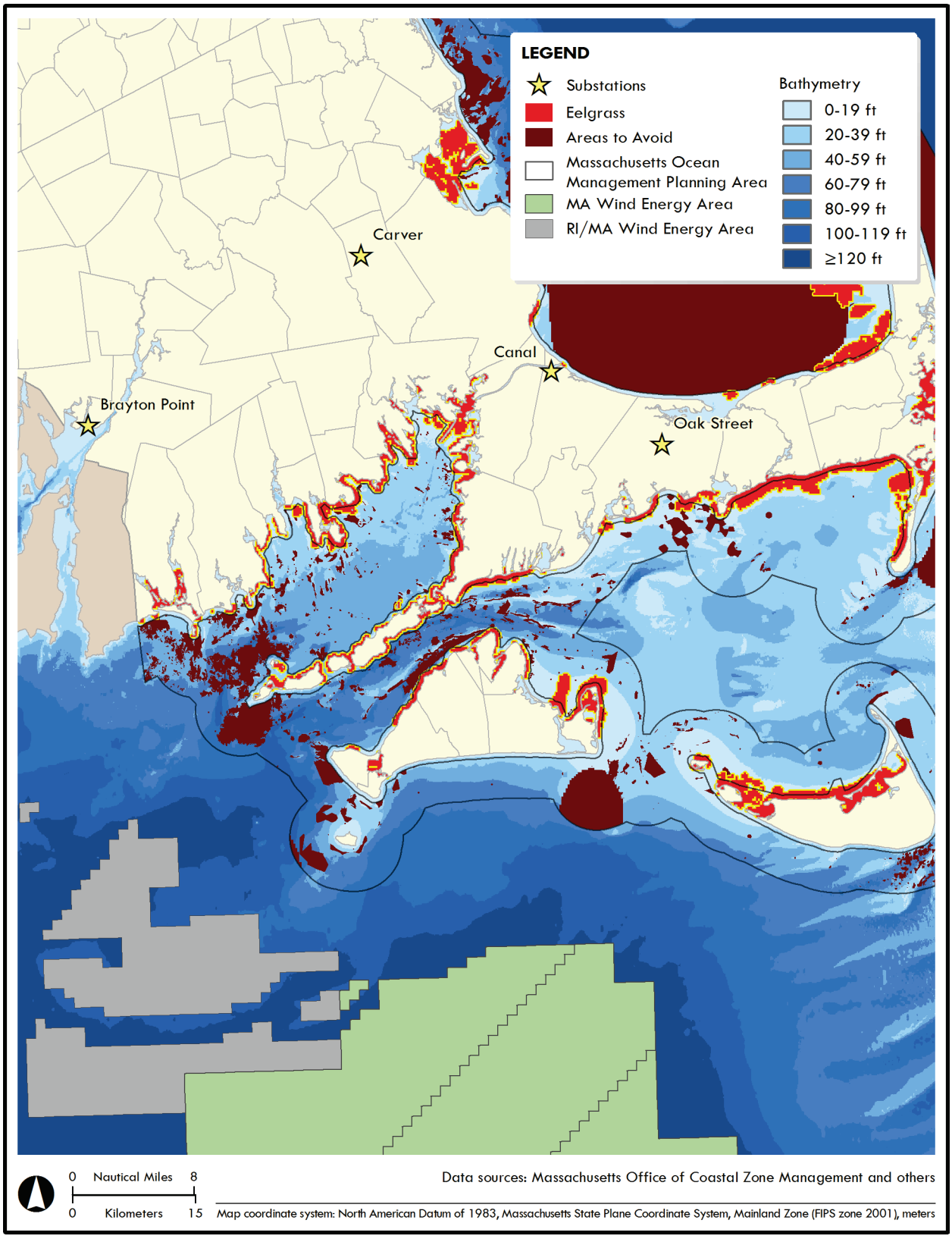

Figure Appendix 5-6. Areas to avoid for siting of potential offshore wind transmission cable corridors: eelgrass

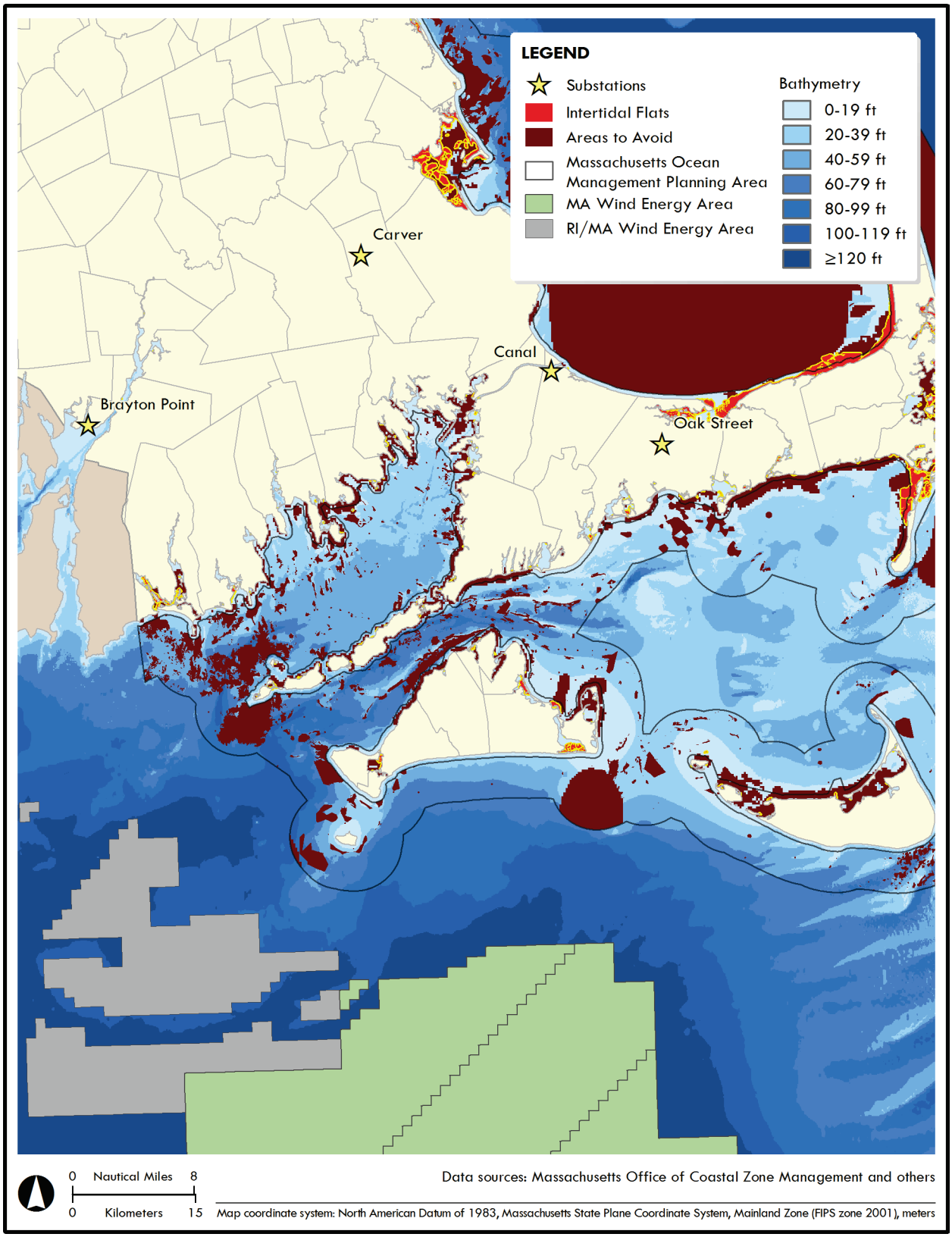

Figure Appendix 5-7. Areas to avoid for siting of potential offshore wind transmission cable corridors: intertidal flats

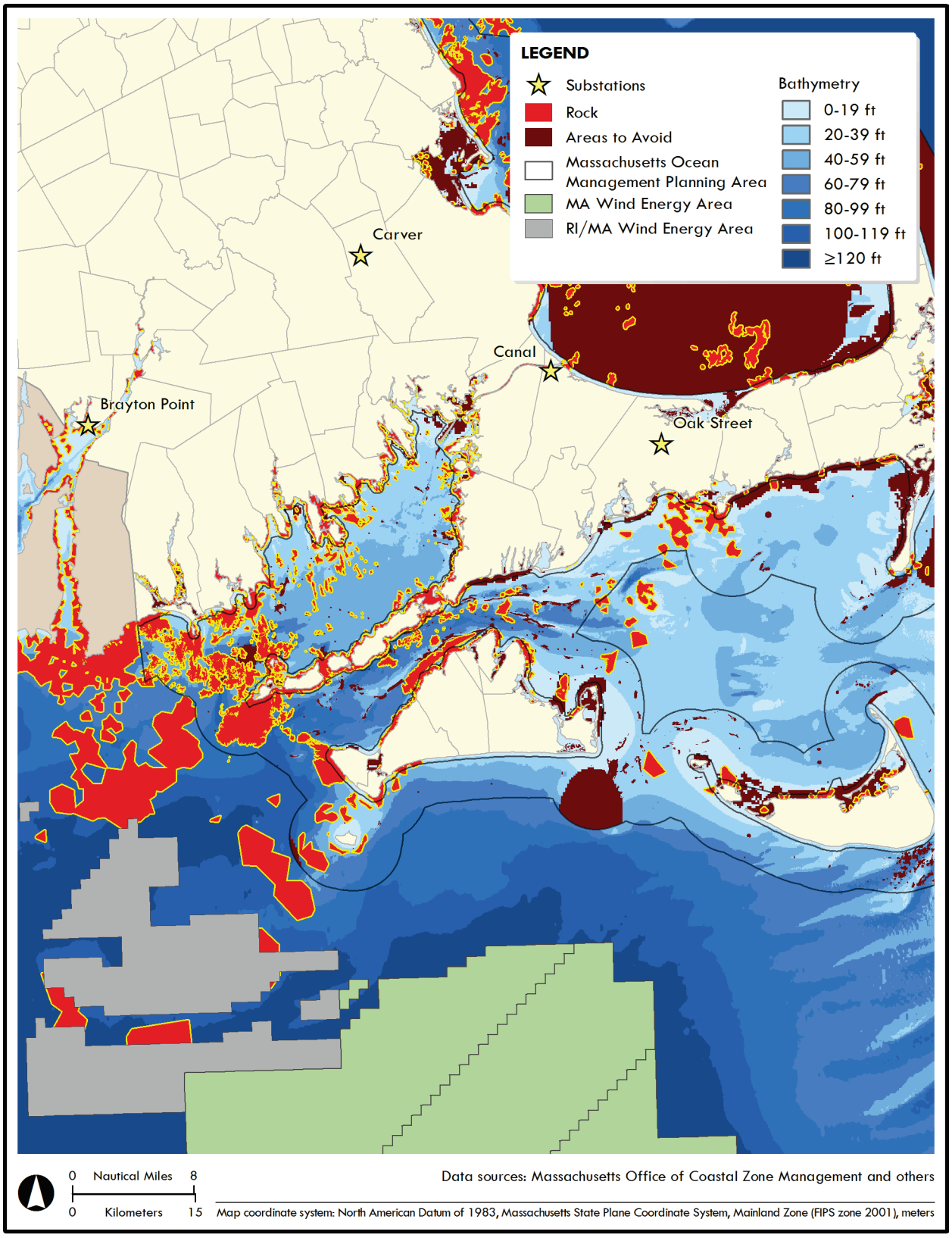

Figure Appendix 5-8. Areas to avoid for siting of potential offshore wind transmission cable corridors: areas of rock from surficial sediment dataset

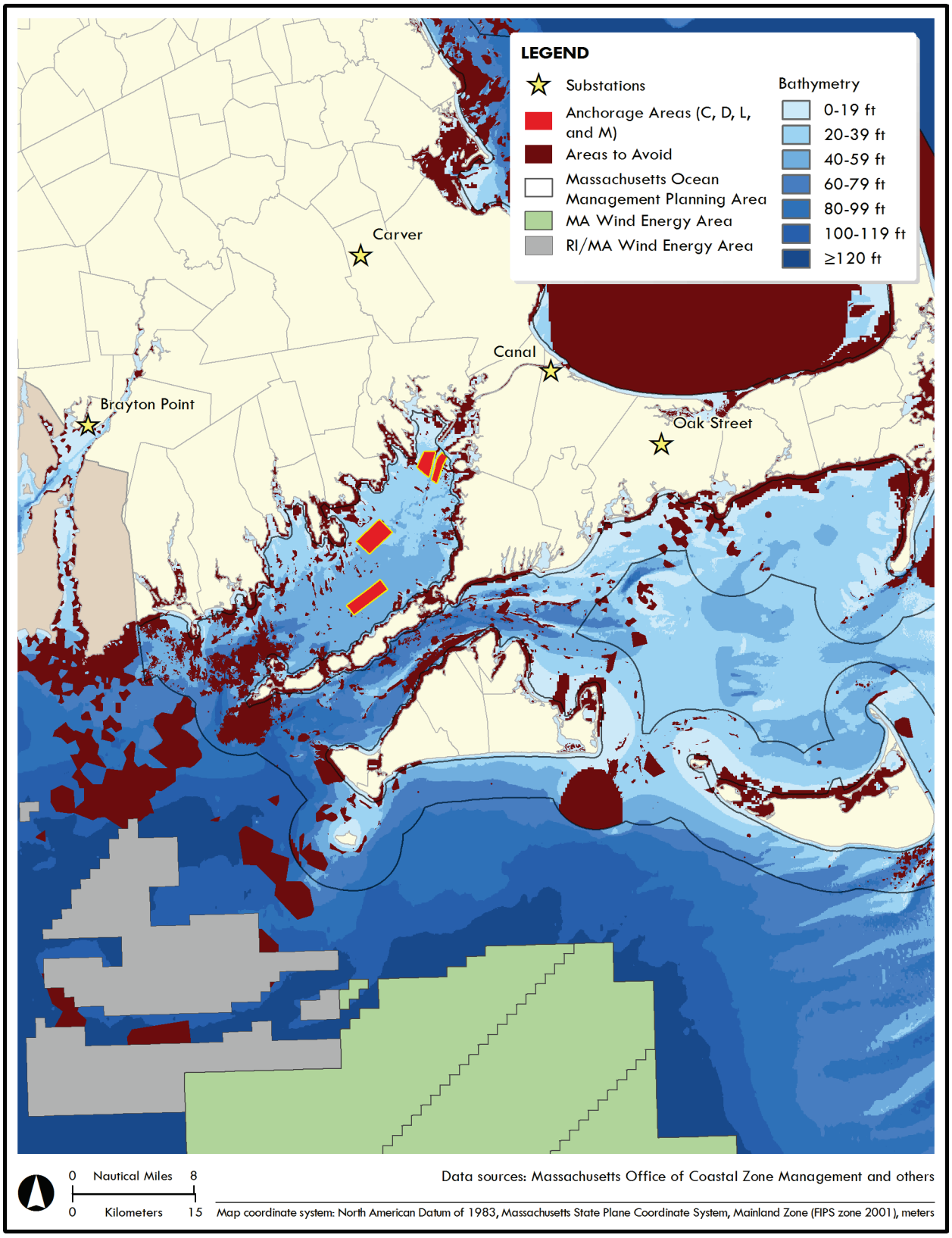

Figure Appendix 5-9. Areas to avoid for siting of potential offshore wind transmission cable corridors: anchorage areas (C, D, L, and M)

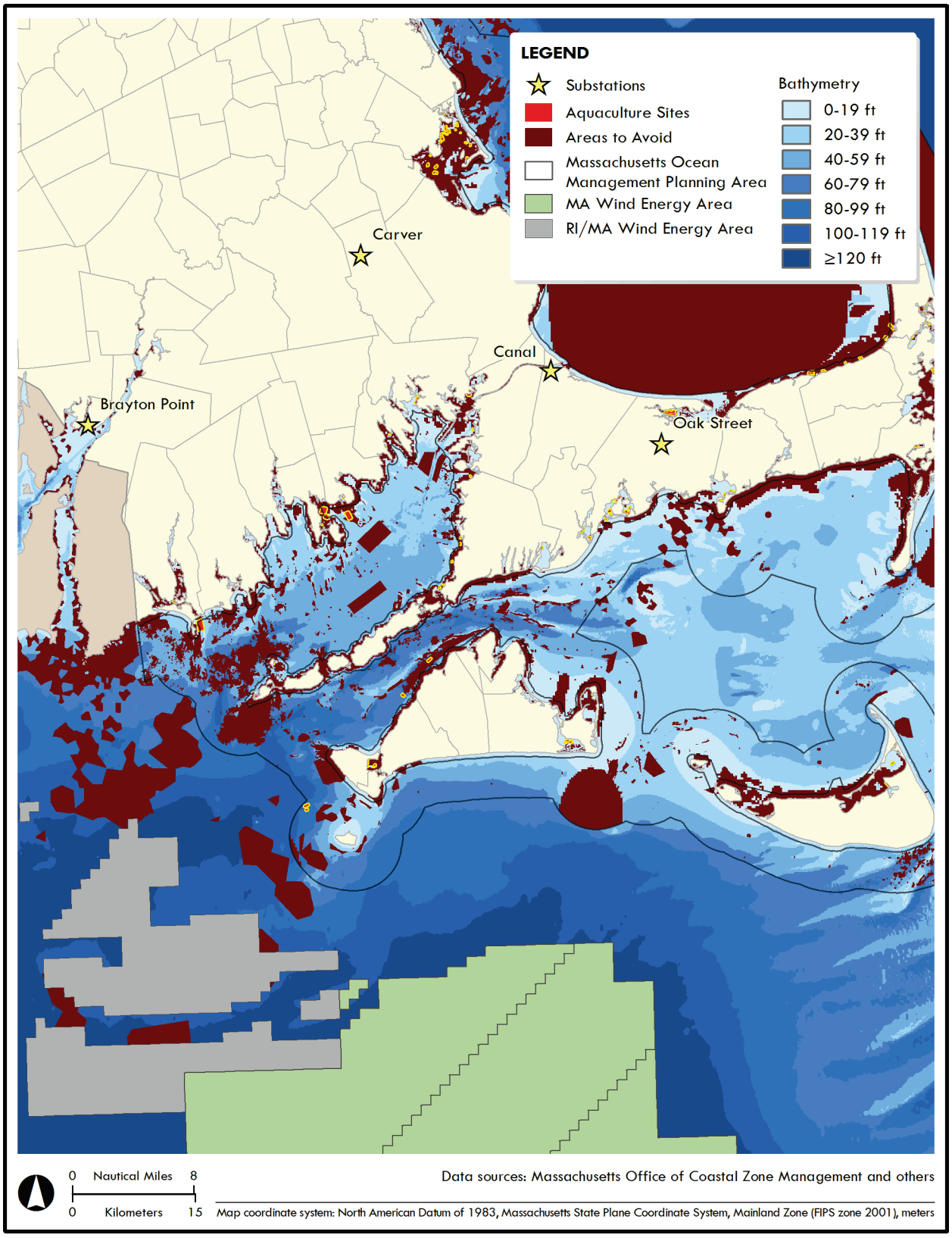

Figure Appendix 5-10. Areas to avoid for siting of potential offshore wind transmission cable corridors: aquaculture sites

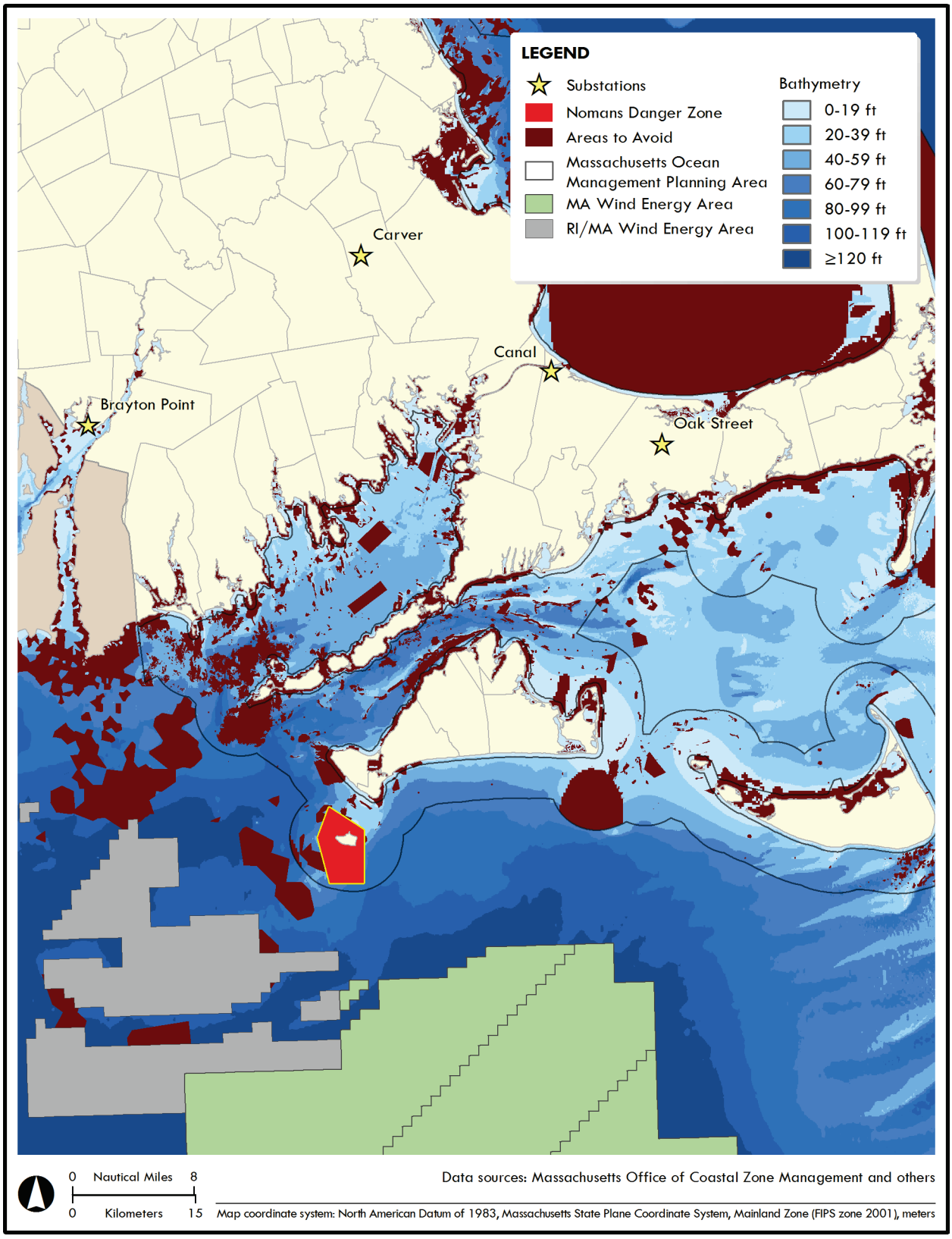

Figure Appendix 5-11. Areas to avoid for siting of potential offshore wind transmission cable corridors: Nomans Danger Zone

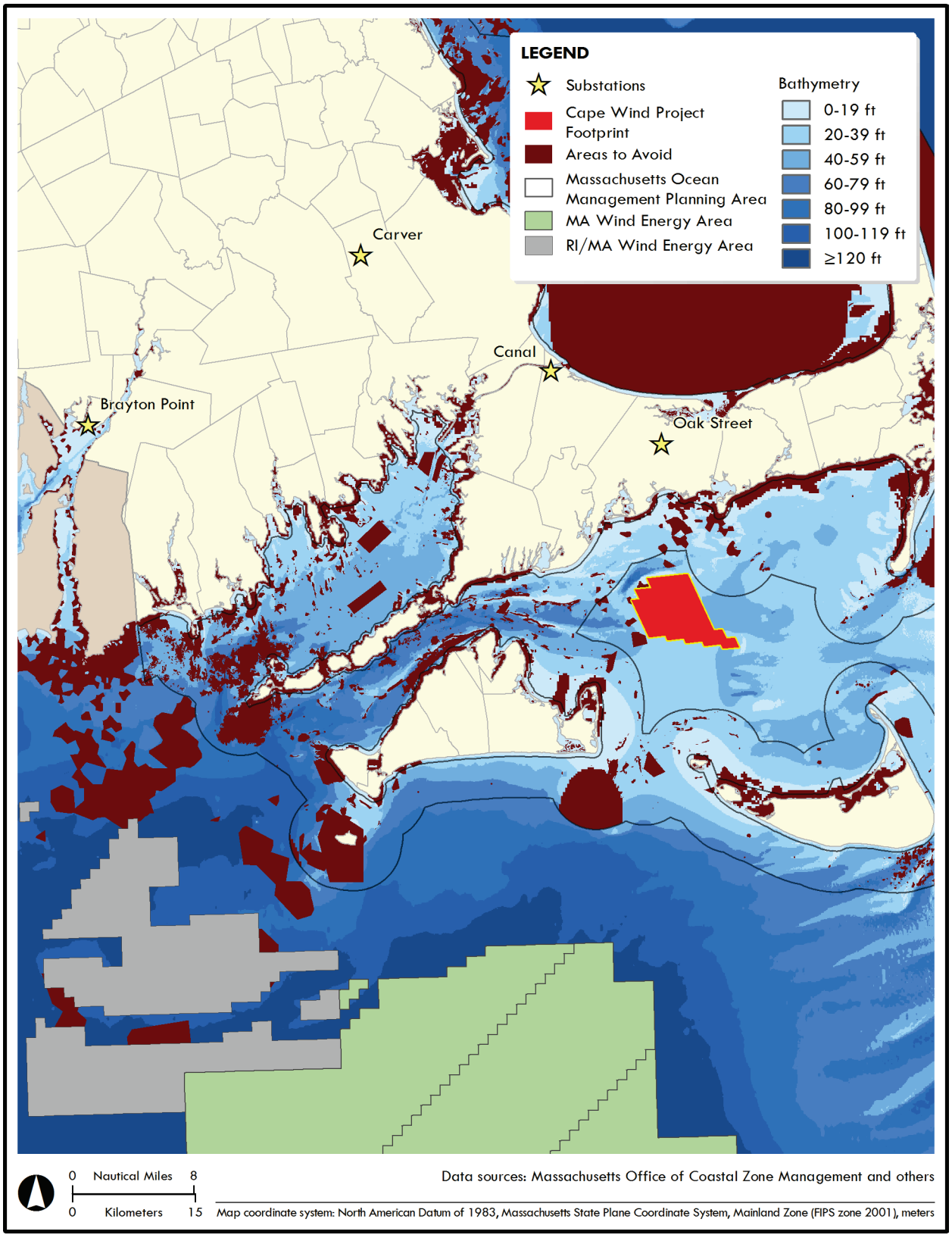

Figure Appendix 5-12. Areas to avoid for siting of potential offshore wind transmission cable corridors: Cape Wind project footprint

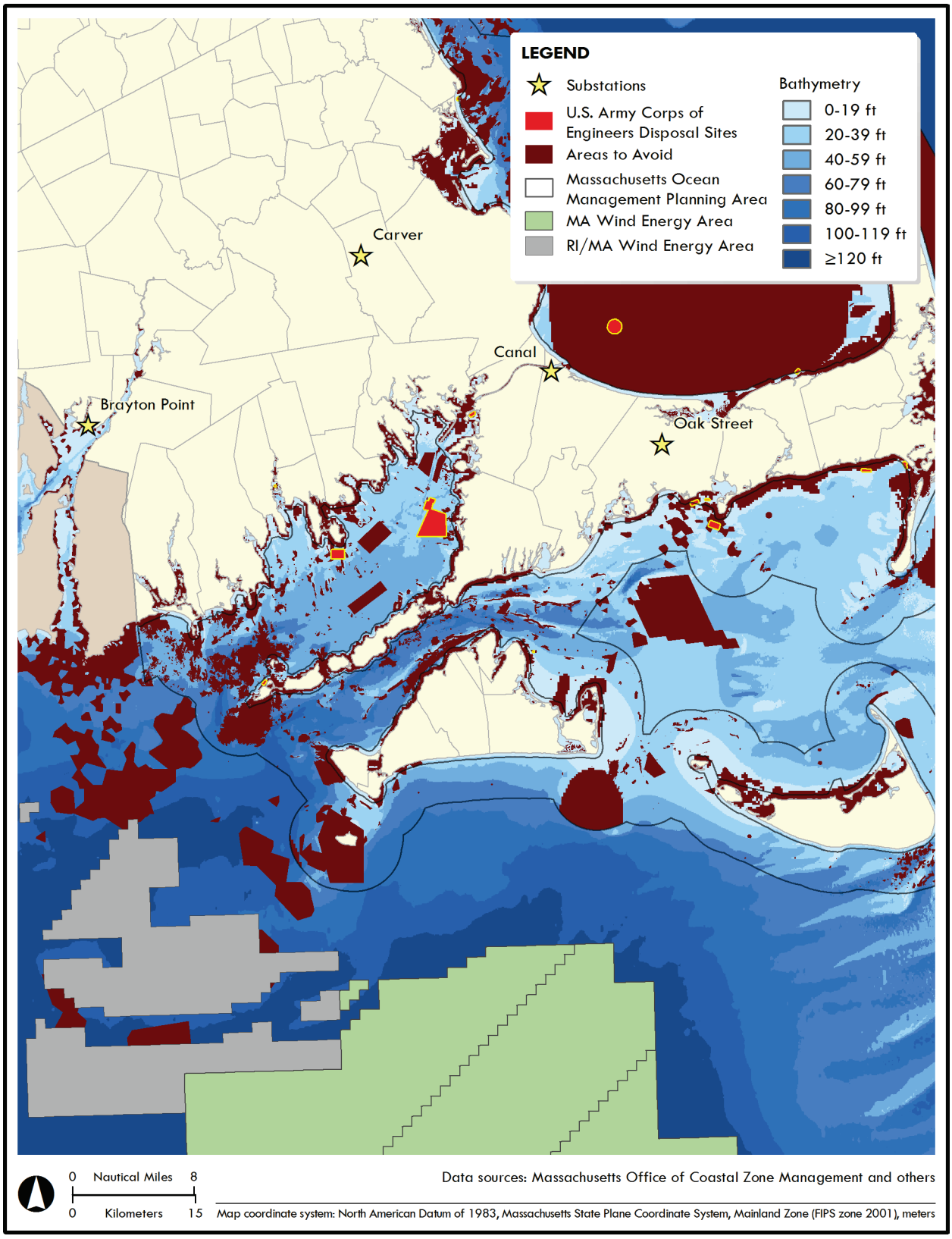

Figure Appendix 5-13. Areas to avoid for siting of potential offshore wind transmission cable corridors: U.S. Army Corps of Engineers disposal sites

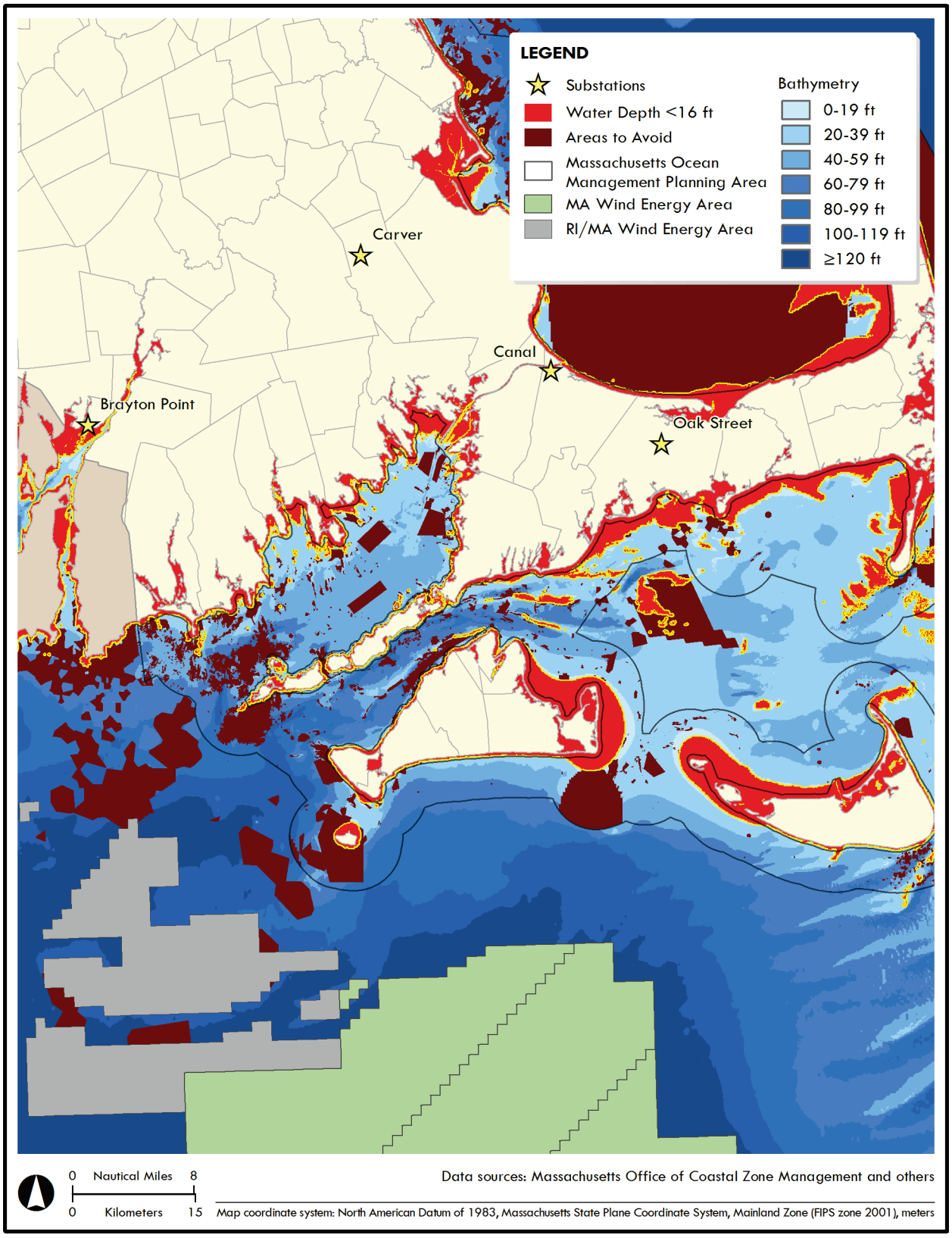

Figure Appendix 5-14. Areas to avoid for siting of potential offshore wind transmission cable corridors: water depth <16 feet (limitations to cable installation vessels due to draft, currents, navigational hazards)

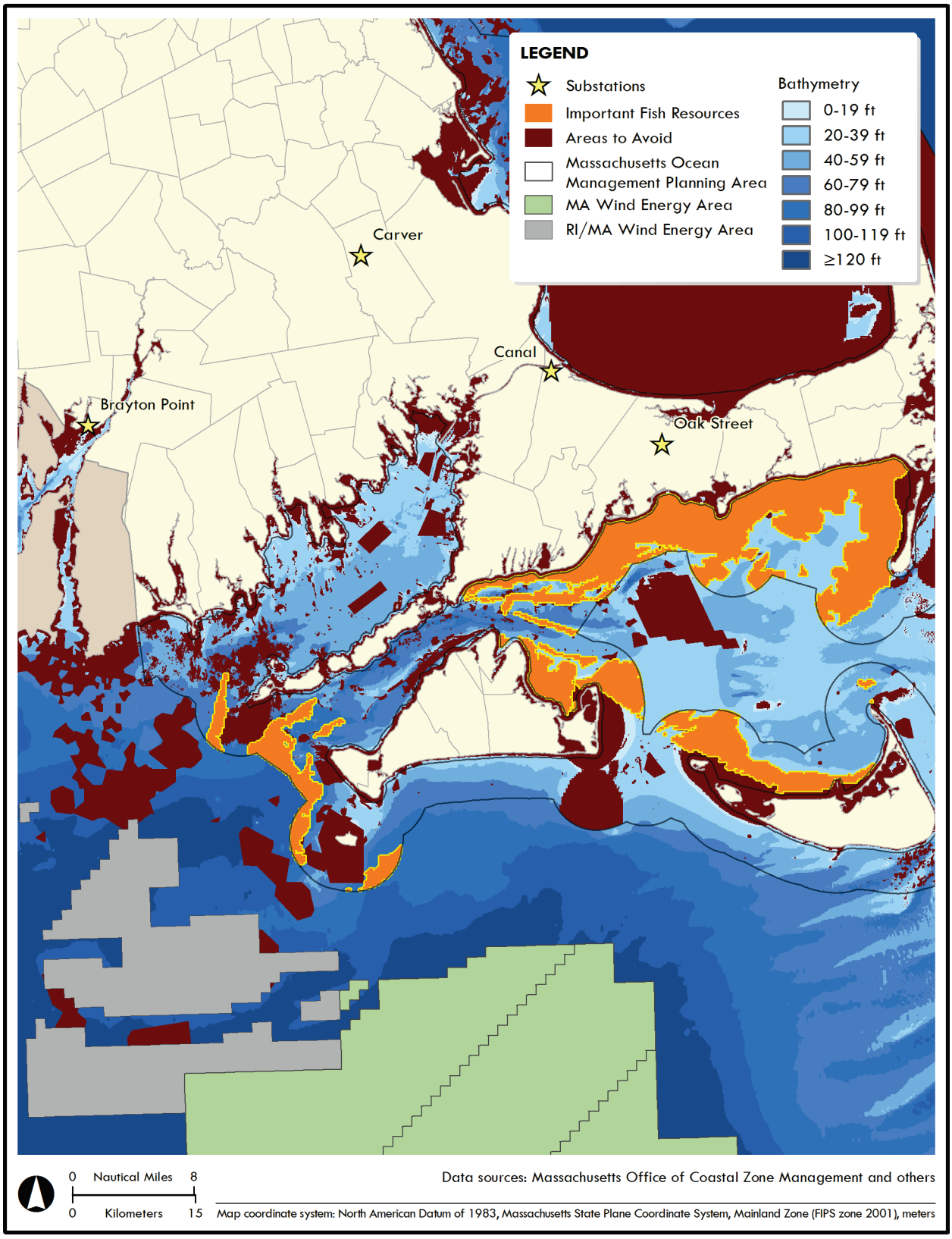

Figure Appendix 5-15. Areas of concern for siting of potential offshore wind transmission cable corridors: important fish resources

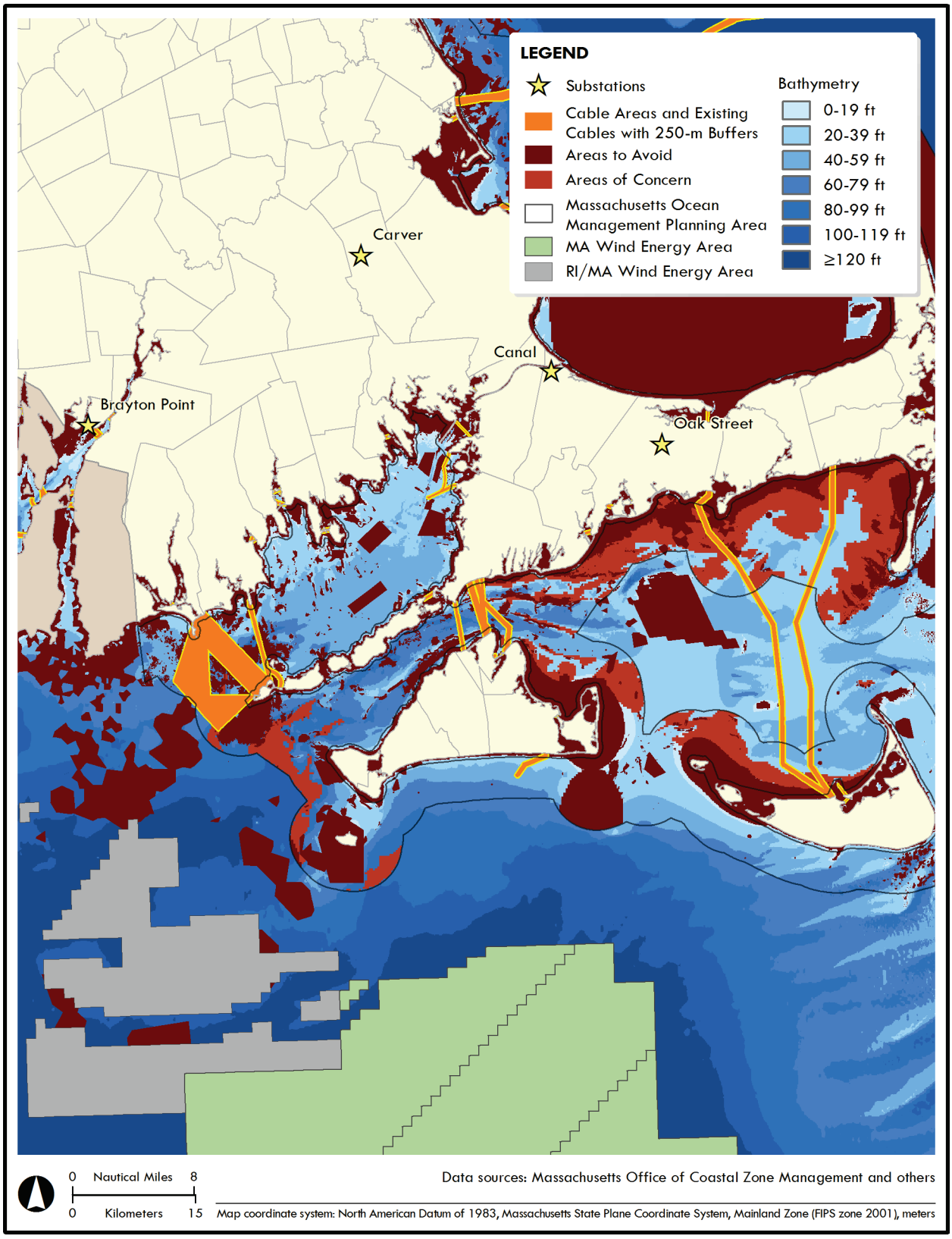

Figure Appendix 5-16. Areas of concern for siting of potential offshore wind transmission cable corridors: cable areas and existing cables with 250-m buffers

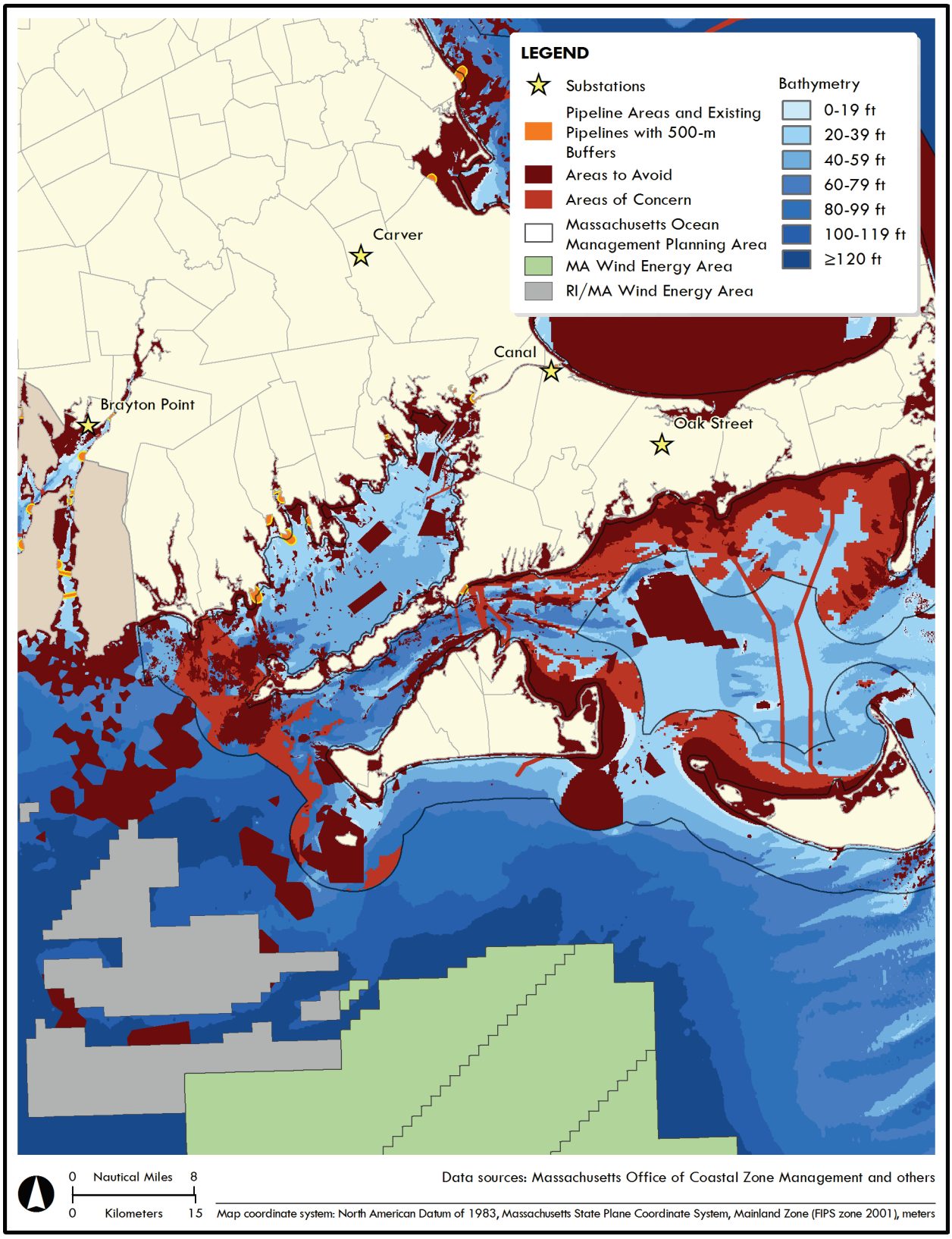

Figure Appendix 5-17. Areas of concern for siting of potential offshore wind transmission cable corridors: pipeline areas and existing pipelines with 500-m buffers

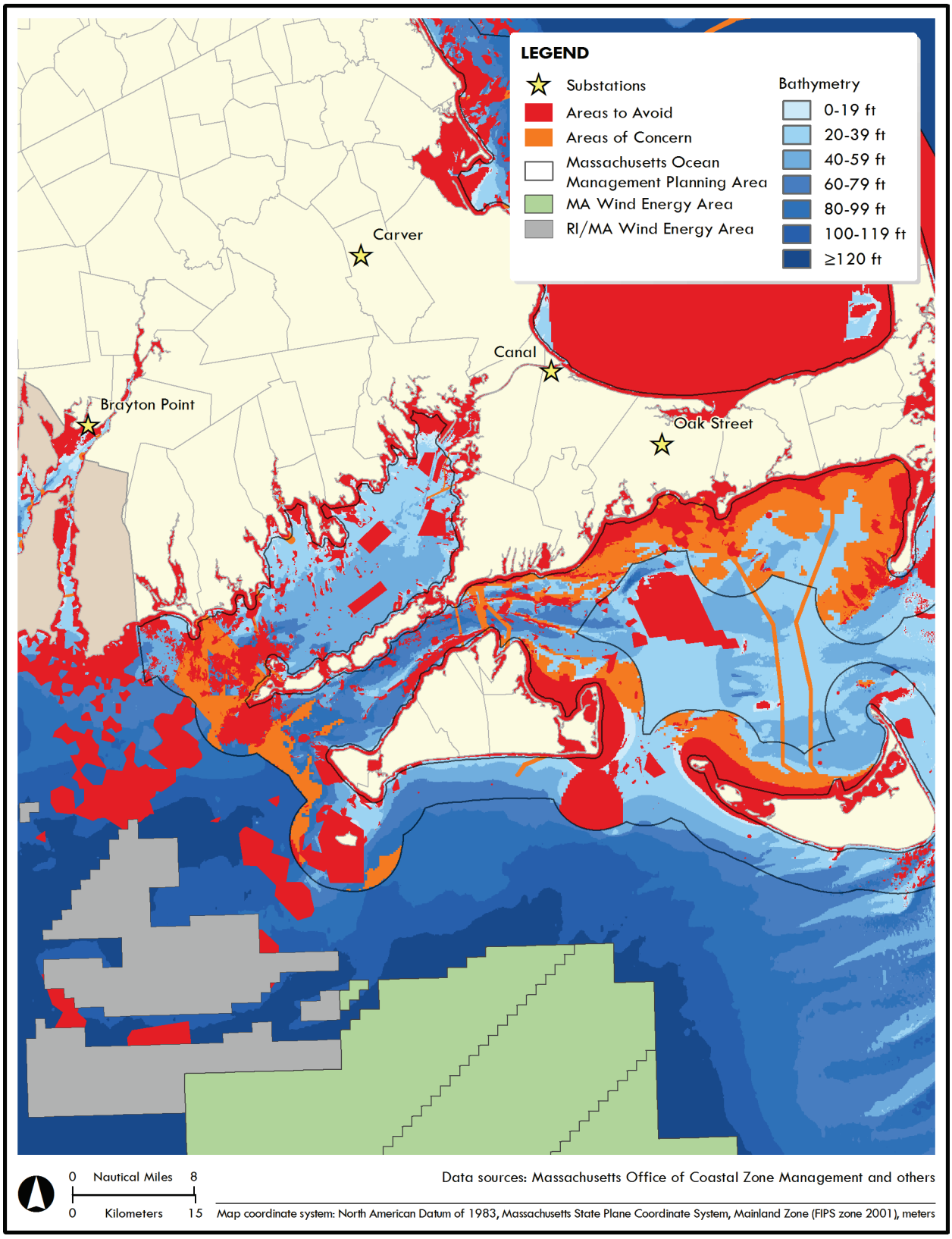

Figure Appendix 5-18. Areas to avoid and areas of concern for siting of potential offshore wind transmission cable corridors

Appendix 6 - Ocean Development Mitigation Fee

Background

Pursuant to the Ocean Act of 2008, projects subject to Ocean Management Plan and its implementing regulations at 301 CMR 28.00 shall be subject to an Ocean Development Mitigation Fee, as established by the Secretary. 301 CMR 28.06 state that the purpose of the fee is to:

- Compensate the Commonwealth for unavoidable impacts of ocean development projects on the broad public interests and rights in the lands, waters, and resources of the Ocean Planning Area; and
- Support the planning, management, restoration, or enhancement of marine habitat, resources, and uses pursuant to the Massachusetts Oceans Act (St. 2008, c. 114).

The Ocean Plan regulations require the Secretary to promulgate a fee structure for ocean development projects. The fee should reflect differences in the scope and scale of projects and their effects on protected resources or uses. The determination and application of the fee shall not modify or affect the requirement of a project proponent to provide mitigation (or compensation in lieu of mitigation) under separate authorities or as a condition of a separate permit or license.

With input from an advisory working group comprised of representatives from the regulated community (including an energy utility and a legal firm representative), commercial fishing and environmental interests, and state agencies, a proposed fee structure and accompanying guidance was developed. Chapter 3 of Volume 1 provides an overview of the proposed fee structure and its administration. This appendix contains more details and lists the proposed fee structure.

Fee Administration

- The fee serves to offset, in part, unavoidable impacts on the broad public interests and rights in the lands, waters, and resources of the Ocean Planning Area not otherwise mitigated under such separate authorities.

- Using the fee structure listed below as guidance, the project proponent will evaluate their project and provide information and analysis to inform the determination of the fee in the draft Environmental Impact Report (EIR) filing, or in the case of a single EIR, in the Expanded Environmental Notification Form (EENF).

- Information required by MEPA in an EIR submittal should be utilized to determine the proposed the fee class by project proponent. Such information includes the detailed description and analysis of:
    - The nature and location of the project;
    - Project alternatives;
    - Impacts of the project and its alternatives, including both short-term and long-term impacts for all phases and cumulative impacts;
    - Measures and management techniques to be taken to avoid, minimize, and mitigate potential impacts to the environment, water-dependent uses, and public trust interests;
    - Public benefits of the project, and other mitigation proposed, separate and distinct from the ocean development fee;
    - Proposed Section 61 Findings; and
    - Information for Public Benefits Determination, including nature of the tidelands affected by the project and the public benefit of the project.

- A proponent may request a payment plan for the fee or a reduction of the fee based on a clear demonstration of need or hardship. The MEPA filing shall include a statement of the specific circumstances that constitute the need or hardship; and the relief requested.

- The Oceans Act and its implementing regulations state that commercial or recreational fishing permits and licenses are not subject to the fee.

- In comments on the MEPA EIR, agencies, stakeholders, and public may concur with the proponent's proposed fee class or advise a different class.

- Based on the MEPA filing; comments received; the evaluation of the proposed project and its effects, public benefits, and other mitigation proposed; and other information, the Secretary shall issue a determination of the final fee to be referenced in the final MEPA certificate.

- As administrator of the fee, the Secretary retains broad discretion in determining the fee amount and any conditions necessary to ensure that the "as-built" project is consistent with the project as described in the final MEPA EIR filing.

Fee Structure

The following schedule contains three classes of fee structure reflecting a hierarchy of projects based on their scope, extent, duration, and severity of impacts.

Activity Class	Project Scope, Scale, and Effects	Fee
Class I	• Project is limited in scale, size, footprint. • Project footprint generally less than 6 acres and project extent is generally confined to seafloor (i.e., does not also include or has only very minor footprint in water column, and water surface and space above). • Effects are limited in duration (i.e. primarily during construction/installation). • Project has negligible or minor effects on habitat or natural resources. • Project has negligible or minor effects on water-dependent uses.	$10,000-$45,000
Class II	• Project is moderate in scale, size, footprint. • Project footprint generally between 6 – 20 acres and project extent may include limited water column, sea surface, or space above. • Effects are more than temporary, extend beyond construction/installation, or recurrent. • Project has moderate effects on habitat or natural resources. • Project has moderate effects on water-dependent uses.	$85,000-$300,000
Class III	• Project is large and/or complex in scale, size, footprint. • Project footprint greater than 20 acres and project extent may include moderate/major water column, sea surface, or above. • Effects are frequent in recurrence or continuous in duration, and permanent, lasting. • Project has major effects on habitat or natural resources. • Project has major effects on water-dependent uses.	$500,000-$5,000,000

Negligible - Effects are at the lowest levels of detection, barely measurable, with no perceptible adverse consequences to the resources.
Minor - Effects are measurable or perceptible but are slight. Impacts are to very few resources. Most impacts to the affected resources are avoided or mitigate, and affected resources will recover quickly.
Moderate - Effects are measurable and perceptible. Impacts are to more than a few resources. Impacts to the affected resources are unavoidable, and affected resources will recover within a short time span.
Major - Effects are noticeable, substantial, and/or lasting. Impacts to the affected resources are unavoidable, and affected resources will take appreciable time to recover or may not fully recover.

Appendix 7 - Ocean Resources and Waterways Trust Implementation Guidelines

[EEA Ocean Resources and Waterways Trust Implementation Guidelines; last modified: June 14, 2011]

Chapter 114 of the Acts of 2008 (the "Ocean Act") created a new Ocean Resources and Waterways Trust Fund (the "trust") in Section 35HH of MGL Chapter 10. The trust receives payments associated with projects subject to the Ocean Sanctuaries Act and Ocean Management Plan (ocean development mitigation fee) as well as other appropriations, grants, or investment income. The Ocean Act identifies the Secretary of the Executive Office of Energy and Environmental Affairs (EEA) as trustee of the Trust and contains provisions pertaining to expenditures from the trust. The Ocean Management Plan, promulgated pursuant to the Ocean Act on December 31, 2009, provides additional guidance on the management of the trust. Based on the statutory requirements and Ocean Management Plan guidelines, these Ocean Resources and Waterways Trust Implementation Guidelines have been developed to direct the administration and management of the Trust.

I. Purpose

The trust was established by law for the purpose of accepting funds from projects subject to an ocean development mitigation fee and other appropriations, royalties, and grants to be used by the Commonwealth for managing, protecting, restoring and/or enhancing marine habitat, resources, and specified uses in state waters or adjacent ocean areas.

II. Trustee

The EEA Secretary serves as trustee of the trust. The Secretary may delegate certain trustee duties in order to assume or assist with elements of the trust administration and management. Such duties include, but are not limited to: project identification, planning, and implementation; recommendations for and approval of expenditures consistent with these guidelines; fiscal management and auditing; and reporting on progress of projects supported by the trust.

III. Ocean Management Plan

In addition to the designation of Trustee, the Ocean Act conferred the Secretary of EEA with the authority for oversight, coordination, and planning of the Commonwealth's ocean

waters, resources, and development and required the development of an integrated ocean management plan for the Commonwealth. Working with the Ocean Advisory Commission and the Ocean Science Advisory Council, an advisory body established in the Act to provide policy guidance, EEA developed specific strategies and targeted outcomes for the Ocean Management Plan, based on the goals of the Ocean Act. Along with integrated management and stewardship of marine ecosystems, a key principle for the ocean plan is to ensure that it can adapt to evolving knowledge and understanding of the ocean environment and its future uses. The ocean plan also provides a blueprint for ocean management-related science and research needs in Massachusetts. The blueprint, or Science Framework, was developed in consultation with the Ocean Advisory Commission and the Ocean Science Advisory Council, as well as public and stakeholder input, and identifies both long-terms goals and objectives as well as priority actions.

An interagency ocean management team was identified in the ocean plan to provide the Secretary with input and advice on ocean planning and management—including policy development, technical and scientific information and research, and regulatory decision-making. The interagency group is chaired by EEA's Office of Coastal Zone Management (CZM) and is comprised of personnel from CZM, the Department of Environmental Protection, the Department of Fish and Game, and the Massachusetts Environmental Policy Act Office.

IV. Trust Account

Pursuant to the Oceans Act, the trust was established as account #2000-0115 in the Massachusetts Management Accounting and Reporting System (MMARS). The effective date of the trust is May 28, 2008, the enabling date of the Ocean Act.

V. Deposits / Credits

The trust is eligible to receive revenue from appropriations or other funds authorized by specifically designated to be credited to the fund by the Legislature; other appropriations or grants that are explicitly directed to the fund; income derived from the investment of amounts credited to the fund; and payments resulting from any ocean development mitigation fee established pursuant to MGL c. 132A, section 18 or similar compensation/mitigation payments.

Checks for deposits/credits should be made out to *Commonwealth of Massachusetts - Ocean Resources and Waterways Trust Fund.*

VI. Trust Expenditure Criteria

The use of trust funds for proposed projects is subject to the following qualifications:

- No less than fifty percent of trust funds from renewable energy projects must be directed to the "host" community(ies) as defined in the ocean plan and implementing regulations. The host community(ies) must utilize such funds in a manner consistent with the provisions of these trust expenditure criteria.

- Trust funds are to be used for the restoration, enhancement, or management of marine habitat and resources impacted by the project. Within this framework, the following provisions apply:

    - Funds derived from impacts to public navigation by an ocean development project should be targeted to navigational improvements.

    - Funds derived from impacts to fisheries resources should be targeted to fisheries restoration and management programs.

- Other funds credited to the trust are to be used only for the purposes of environmental enhancement, restoration and management of ocean resources and uses generally consistent with the Act and the ocean plan.

- All approved expenditures from the trust shall follow all applicable Commonwealth procurement and finance laws, regulations, and guidelines. This would include direct procurement by EEA as well as fund transfers from EEA to another state agency via an Interagency Service Agreement.

VII. Trust Project Identification, Approval, and Implementation

As designated by EEA, CZM will lead the interagency ocean management group tasked with the review and approval of projects that are consistent with the expenditure criteria and will (1) advance the Commonwealth's identified ocean planning and management science, research, and informational needs such as those contained in the ocean plan and/or (2) restore, enhance, or manage the habitat and resources impacted by specific projects. In determining whether projects proposed for trust support are consistent with these Trust Implementation Guidelines, CZM will seek input on proposed projects from the interagency ocean management group. Such review will include an assessment of the following:

- Purpose – The proposed project's purpose must conform to the expenditure criteria above and must further an identified science, research, or informational need and/or must restore, enhance, or manage habitats and resources impacted by specific projects.

- Objectives – The project objectives, including the project's scope, methodology, tasks, and technology, must advance the stated goals of the ocean plan. Project objectives must exhibit technical and scientific merit.

- Deliverables – The products/outcomes/deliverables of the proposed project must demonstrate quantifiable benefits to improve the public use and protection of the Commonwealth's marine habitats and resources.

- Budget – The project must be cost-effective and represent a good value for the Commonwealth. Projects should seek to leverage financial resources from other sources or associations with sponsoring partners.

Based on the review of the proposed project, CZM will make a recommendation to the Secretary as to trust support for the proposed project. If approval from the Secretary or his designee is granted, the proposed project will move to final scoping, procurement of necessary services (if applicable) and implementation. A member of the interagency ocean management group will be designated as project manager and will be responsible for approving the final scope of work and outcomes/deliverables, overseeing the project through its completion, and reporting on progress and final results.

VIII. Tracking and Reporting

On behalf of the Secretary and in close coordination with EEA fiscal personnel, CZM will assume duties for monitoring trust deposits/credits and expenditures; as well as maintaining procurement/audit files.

CZM will maintain a registry of projects supported by the trust, with details on the budget, project purposes, primary tasks, and deliverables. This information will be shared with the Ocean Advisory Commission and the Ocean Science Advisory Council and made publicly available through EEA or CZM website or similar means. Additionally, since the trust projects are designed to advance ocean planning and management issues, CZM will include project summaries and updates in their regular communications (such as CZMail newsletter) as well as incorporating related content on relevant websites.

Appendix 8 - Ocean Resources and Waterways Trust Deposits and Expenditures

To date, there have been three deposits to the Ocean Resources and Waterways Trust ("trust"). The first payment was $1,000,000 directed to the trust as a result of supplemental mitigation related to benthic impacts associated with construction of the Hubline natural gas pipeline project in Massachusetts Bay. The second was $42,650 associated with a MA Department of Environmental Protection permit violation associated with unpermitted fill for the Hubline natural gas pipeline project (rock cover used to bury the pipeline). The third deposit for $20,000 was the ocean development mitigation fee determined by the Executive Office of Energy and Environmental Affairs Secretary for the Comcast/NSTAR communications/electric cable project between Falmouth and Tisbury. There have been six projects supported by the trust for a total of $588,060 expended as of June 2014:

Year	Expended Amount	Project
2010	$ 120,300	Sediment and infauna analysis to ground-truth seafloor maps and identify regions with statistically similar sediment types and infaunal communities. Project area included ocean area off of South Shore and northern Cape Cod Bay.
2010	$ 15,469	High-definition video camera to ground truth seafloor and sediment maps and support habitat classification and fisheries management.
2011	$ 145,359	Sediment and infauna analysis to ground-truth seafloor maps and identify regions with statistically similar sediment types and infaunal communities. Project area included southern Cape Cod Bay, Buzzards Bay, and south of Islands.
2012-2013	$ 36,289	Acquisition of seafloor imagery and analysis of benthos in the Massachusetts Wind Energy Area south of the Martha's Vineyard.
2012-2013	$266,241	Sediment and infauna analysis to ground-truth seafloor maps and identify regions with statistically similar sediment types and infaunal communities. Project area included state waters of Massachusetts Bay from Boston harbor area north to New Hampshire border.
2014	$4,402	Acquisition and data processing of North Atlantic right whale, humpback whale, and fin whale densities in and around Massachusetts waters to convert observations to sightings per unit effort for each species in a five minute by five minute grid and technical guidance to develop maps from these data.

Volume 1 – Figures

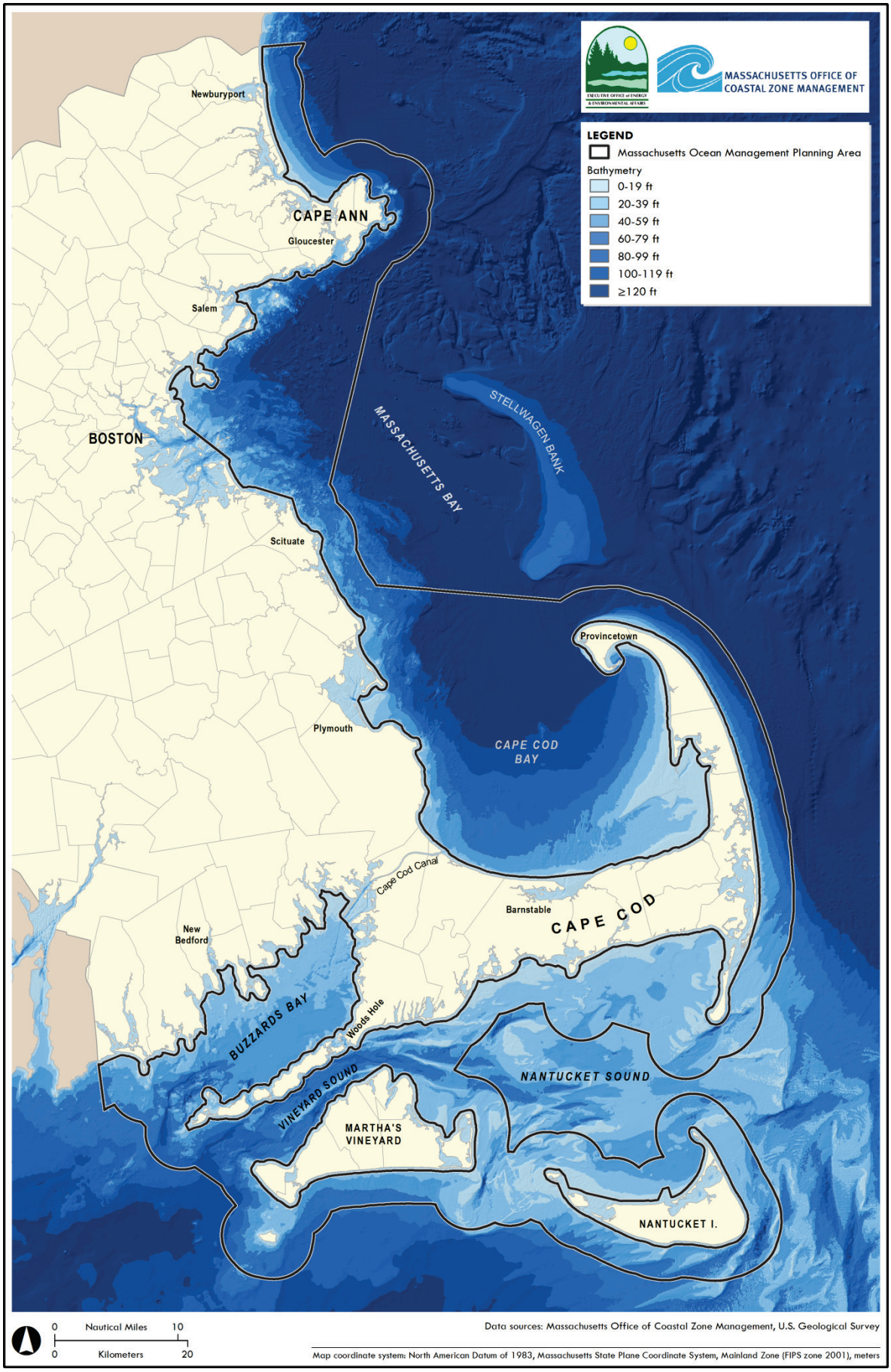

Figure 1. Massachusetts ocean management planning area

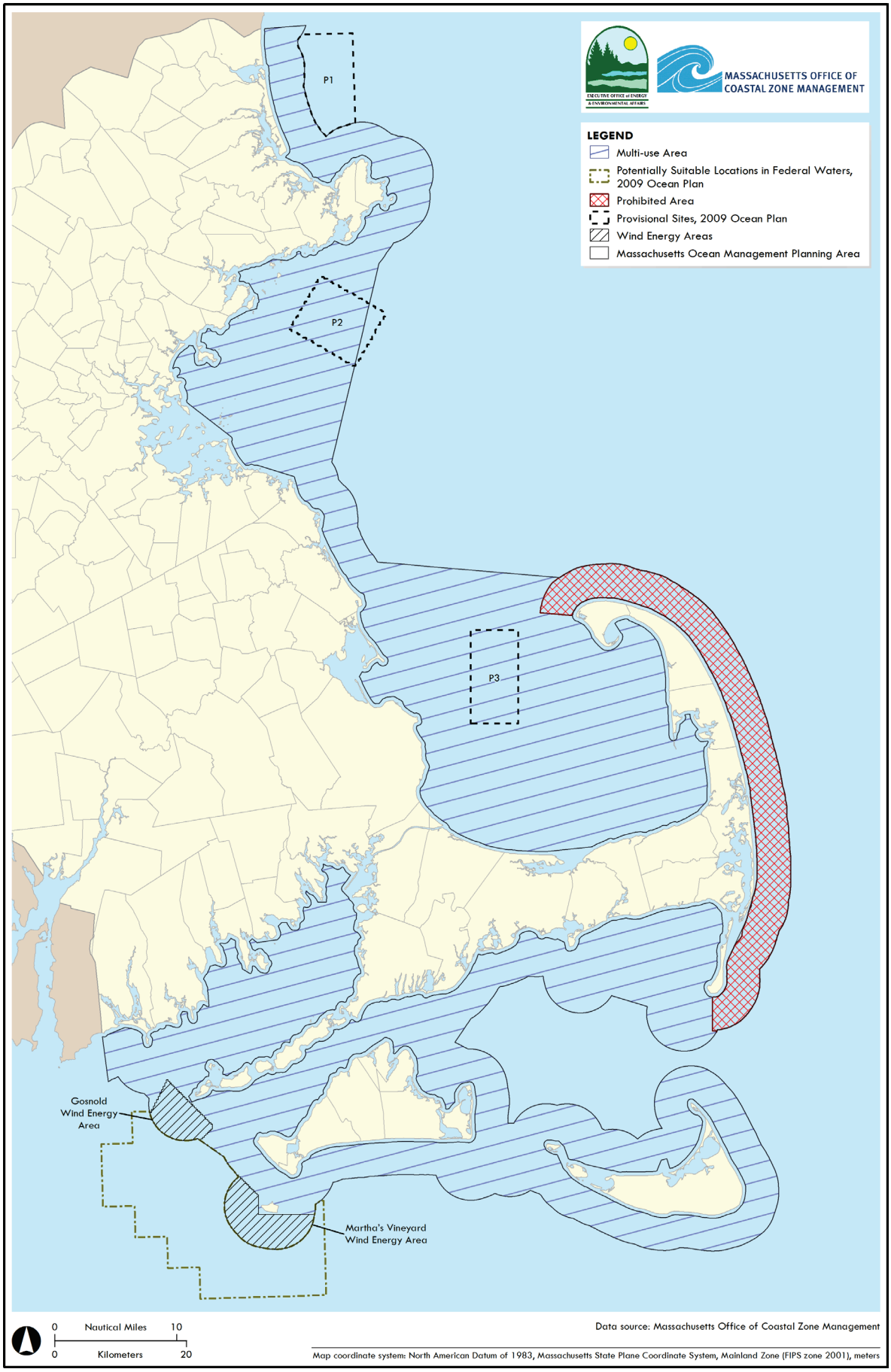

Figure 2. Management areas designated in the 2009 ocean plan

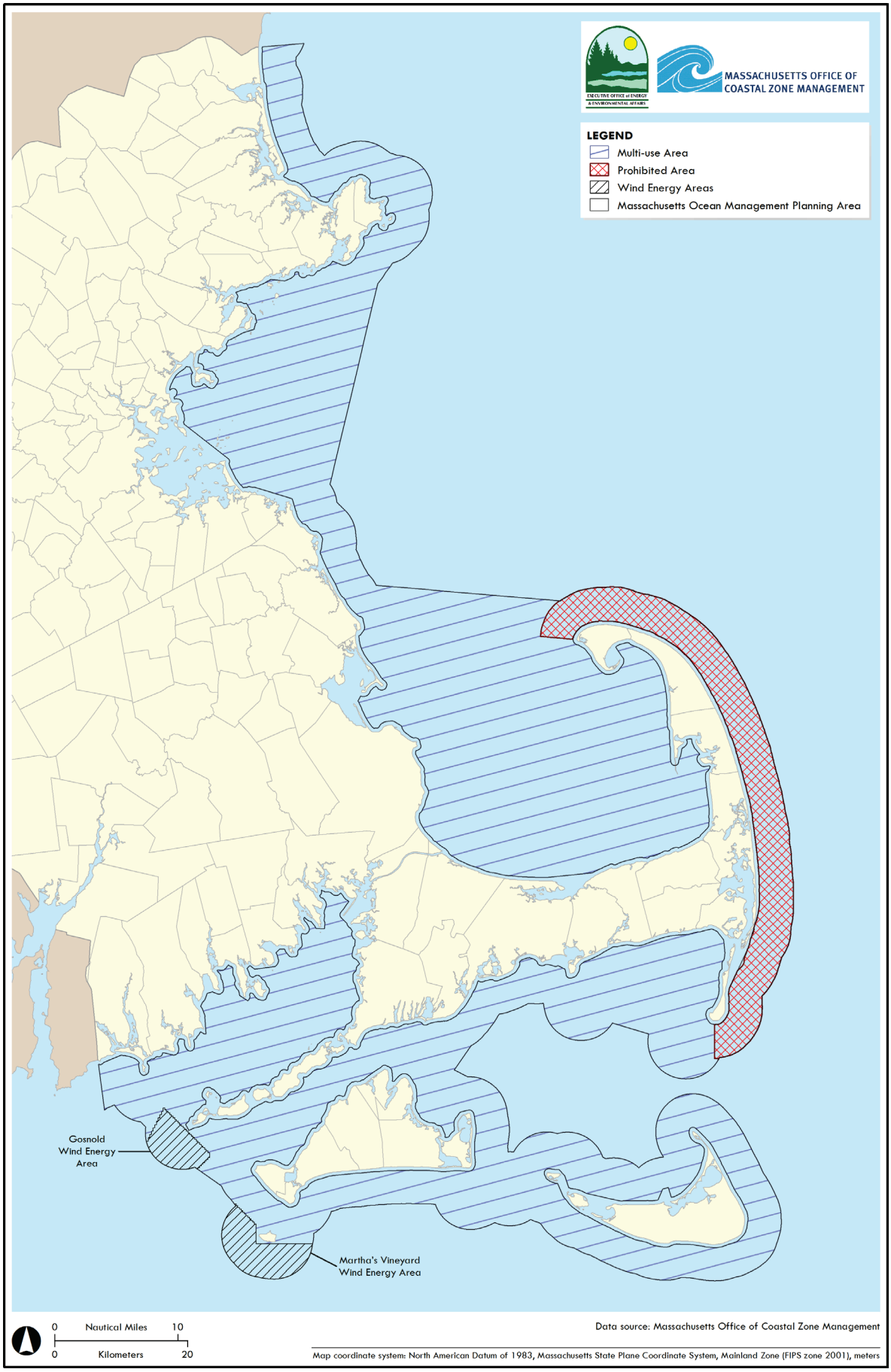

Figure 3. Management areas designated in the 2014 draft ocean plan

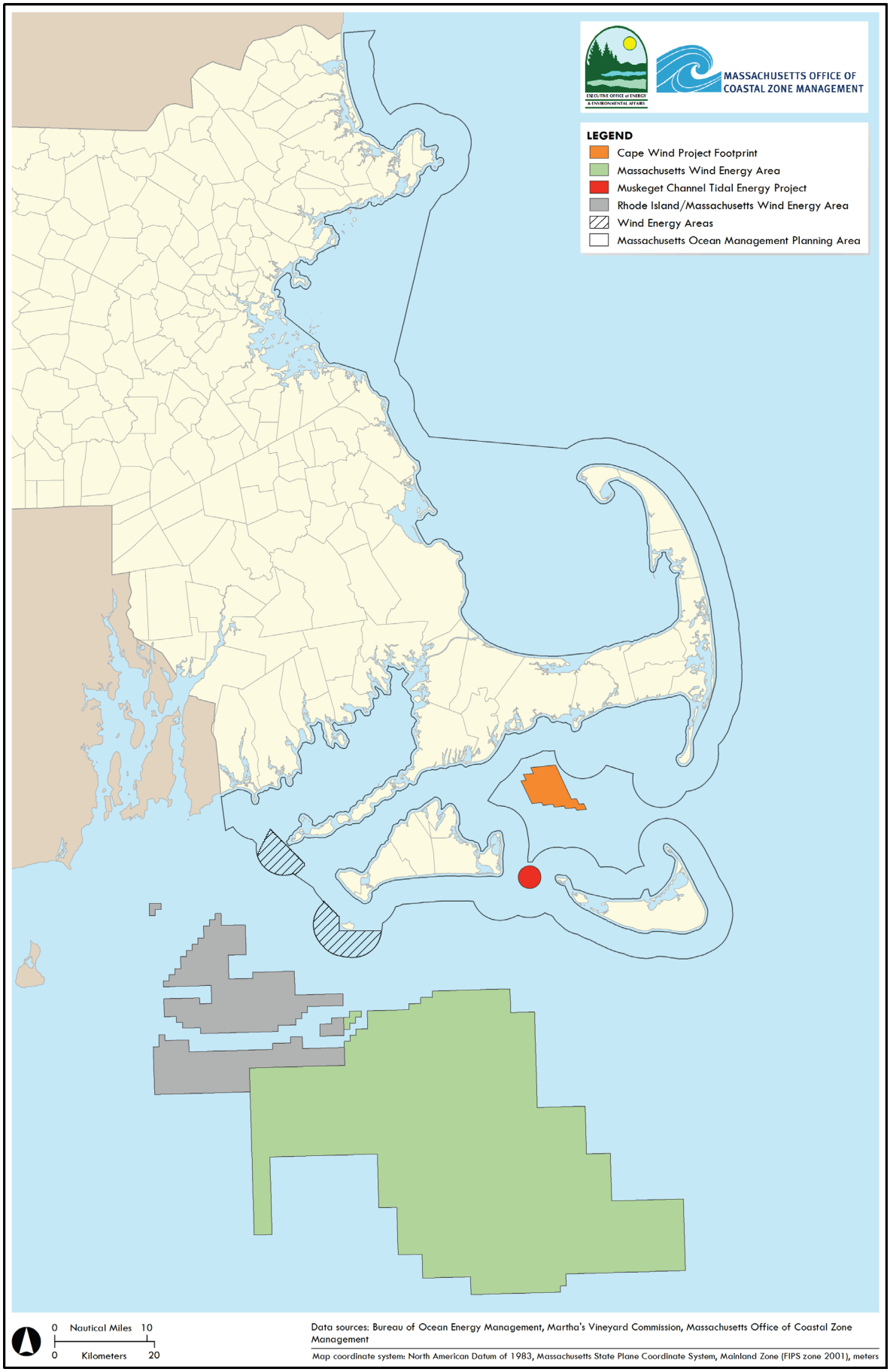

Figure 4. Renewable energy areas in the planning area and adjacent federal waters

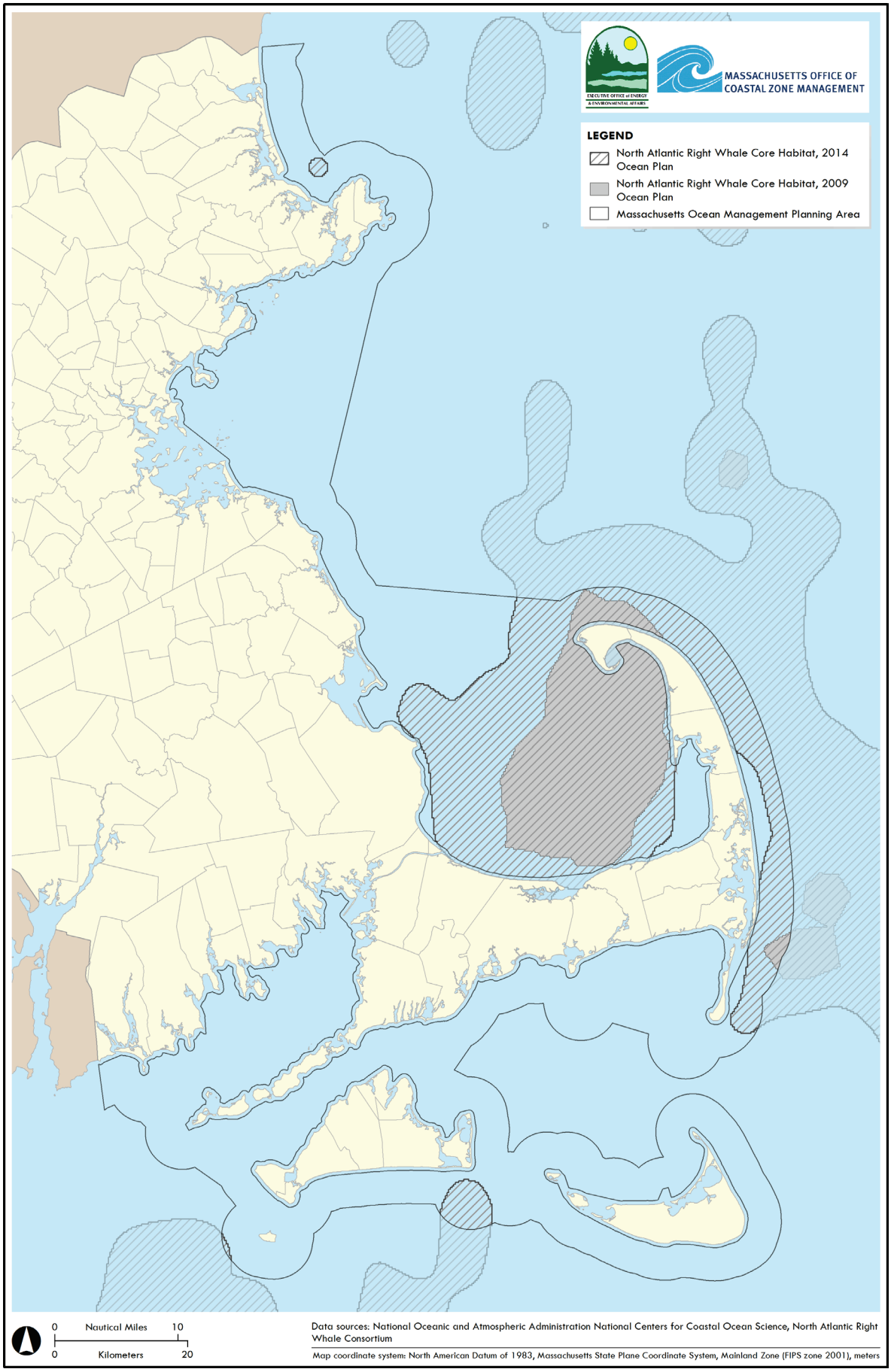

Figure 5. Special, sensitive, or unique resource: North Atlantic right whale core habitat 2009 and 2014

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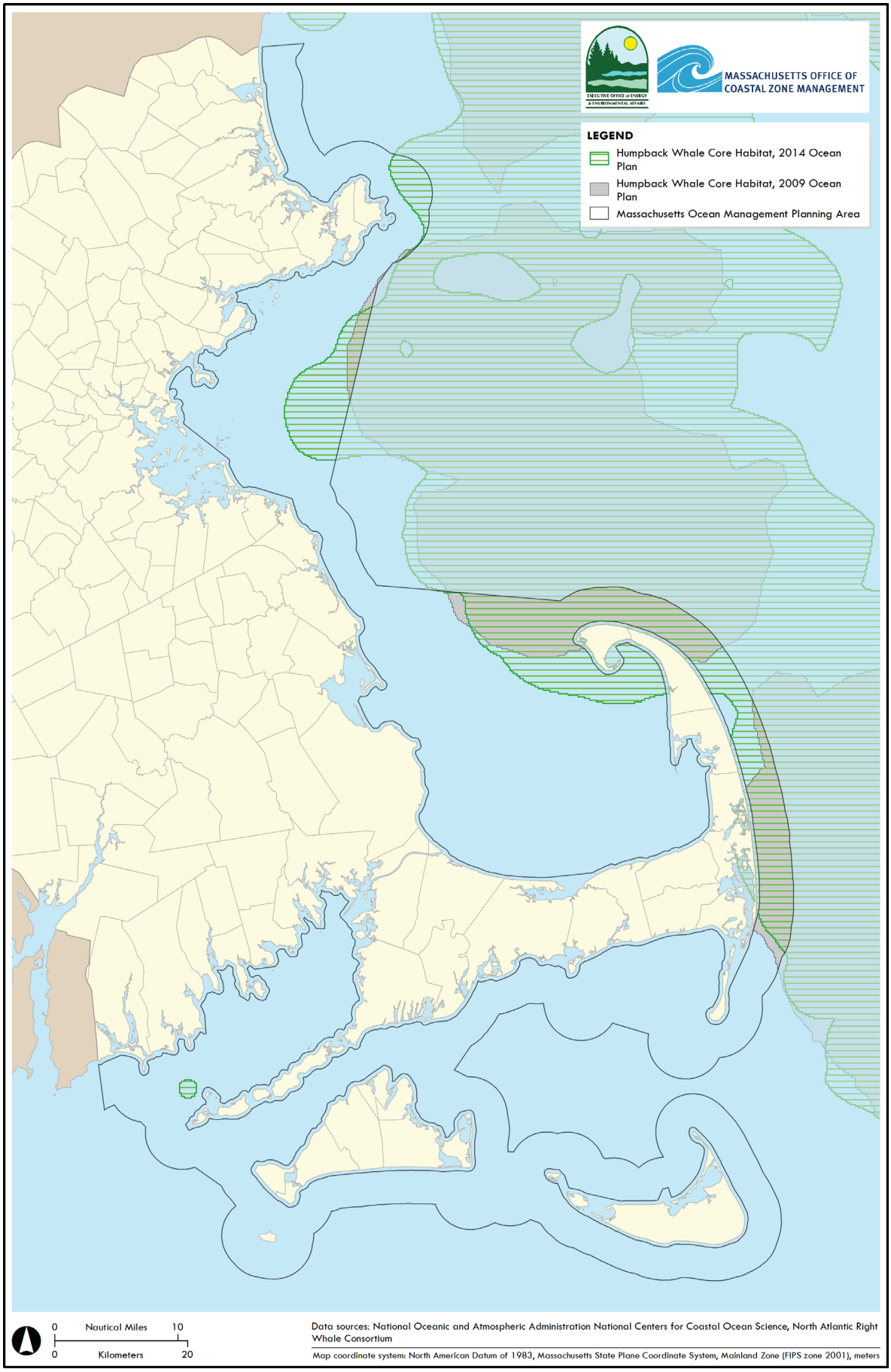

Figure 6. Special, sensitive, or unique resource: humpback whale core habitat 2009 and 2014

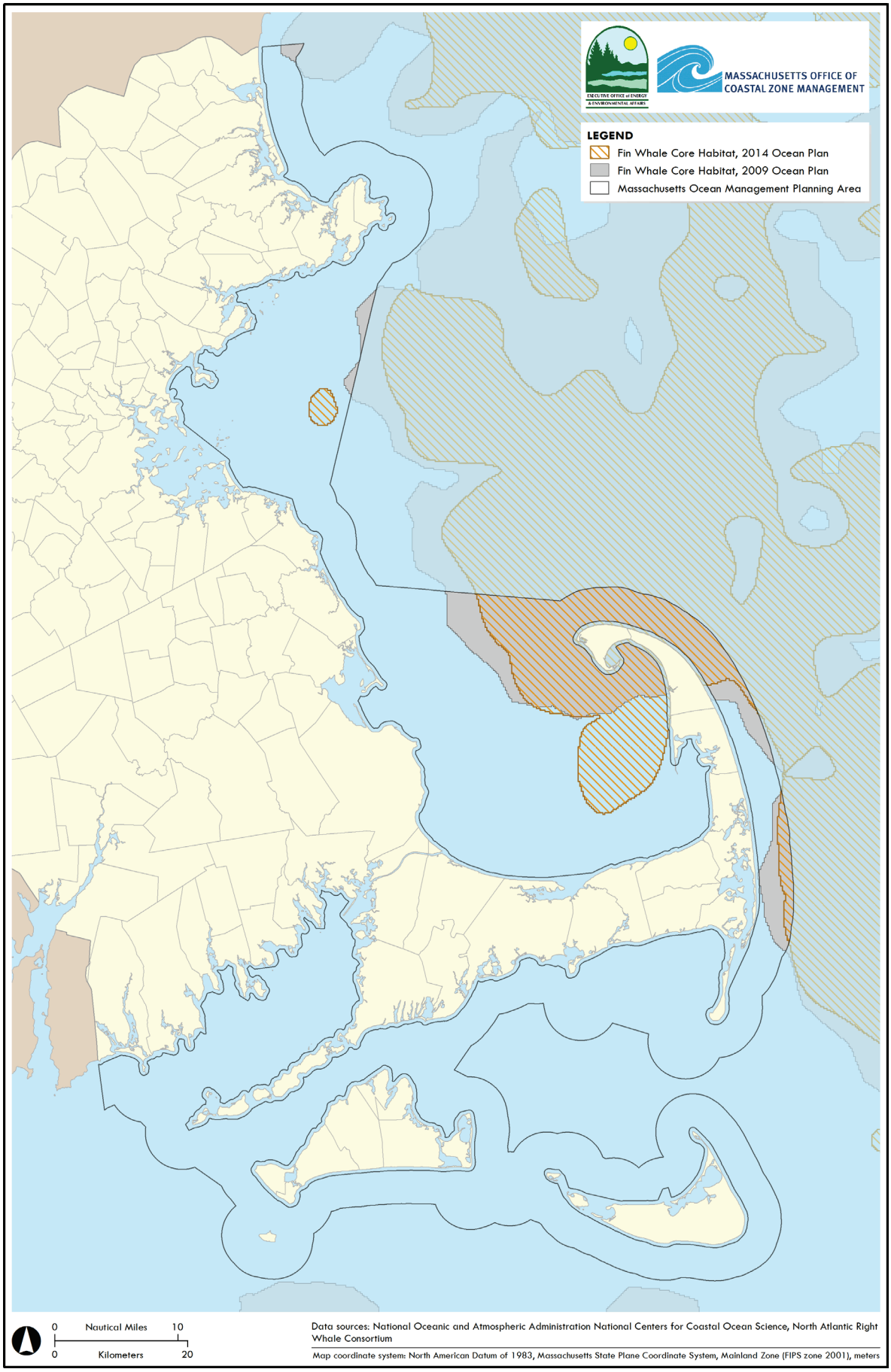

Figure 7. Special, sensitive, or unique resource: fin whale core habitat 2009 and 2014

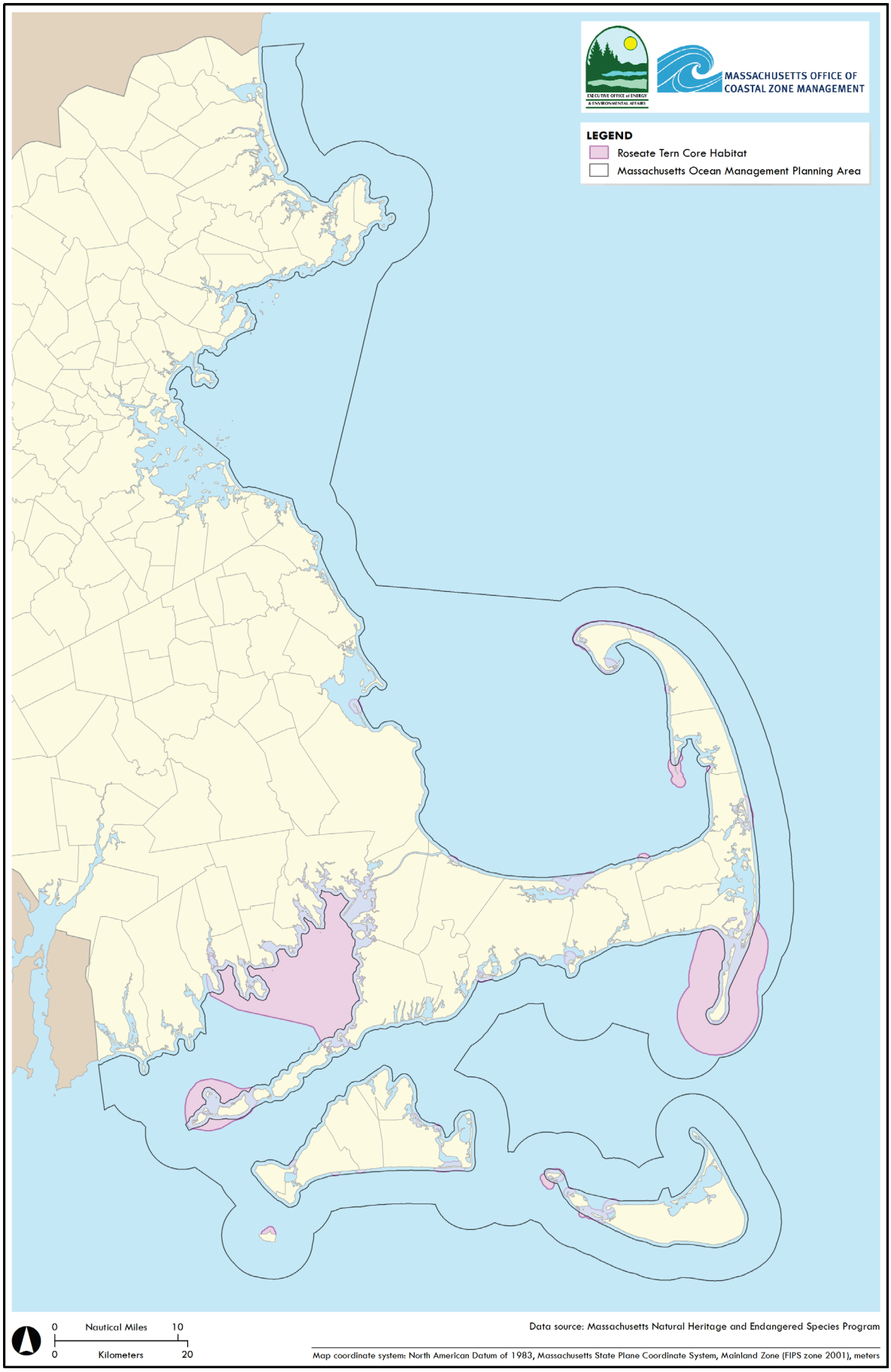

Figure 8. Special, sensitive, or unique resource: Roseate Tern core habitat

Figure 9. Special, sensitive, or unique resource: special concern (Arctic, Least, and Common) tern core habitat

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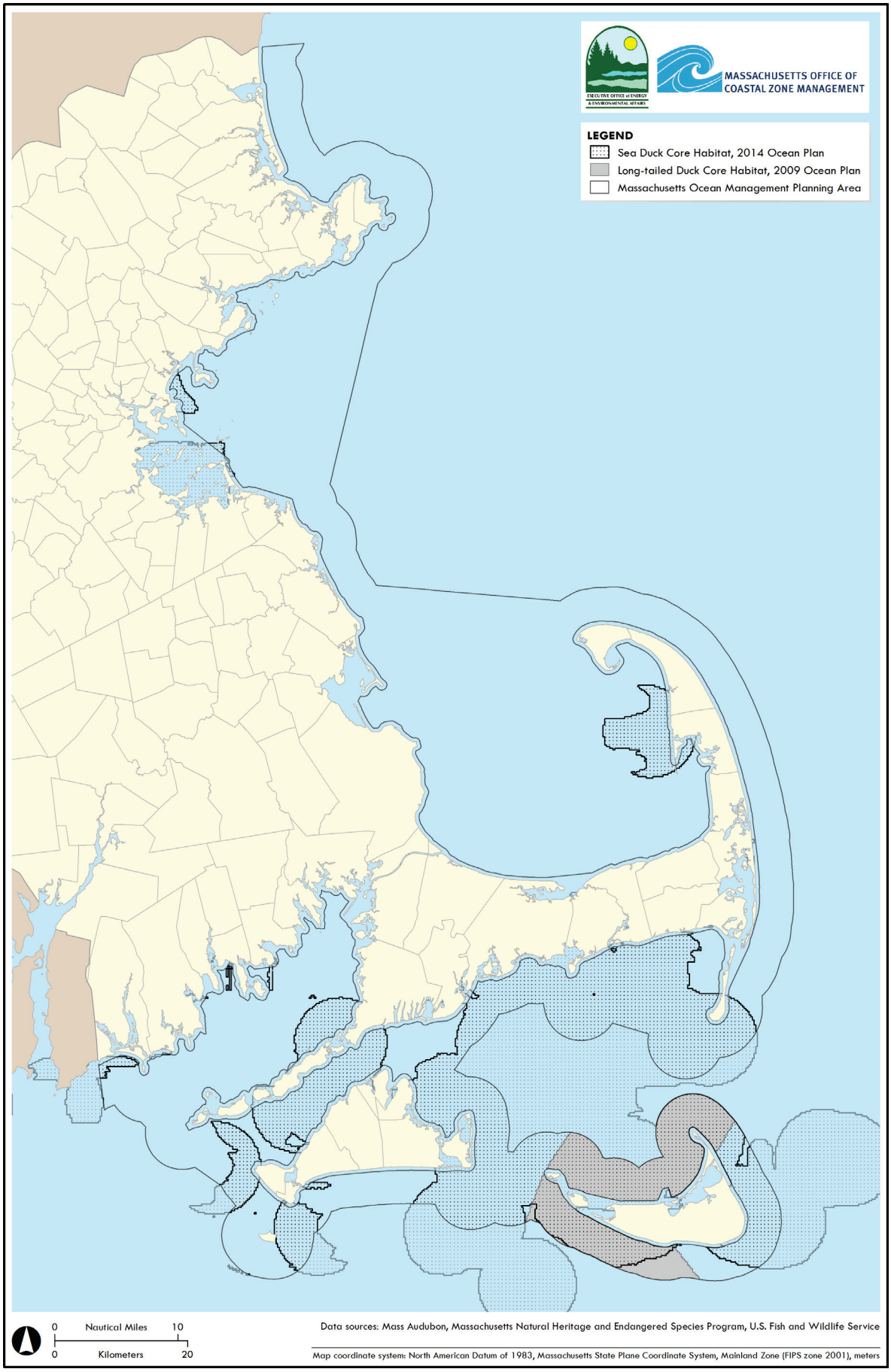

Figure 10. Special, sensitive, or unique resource: sea duck core habitat 2009 and 2014 (formerly mapped as Long-tailed Duck core habitat in 2009 ocean plan)

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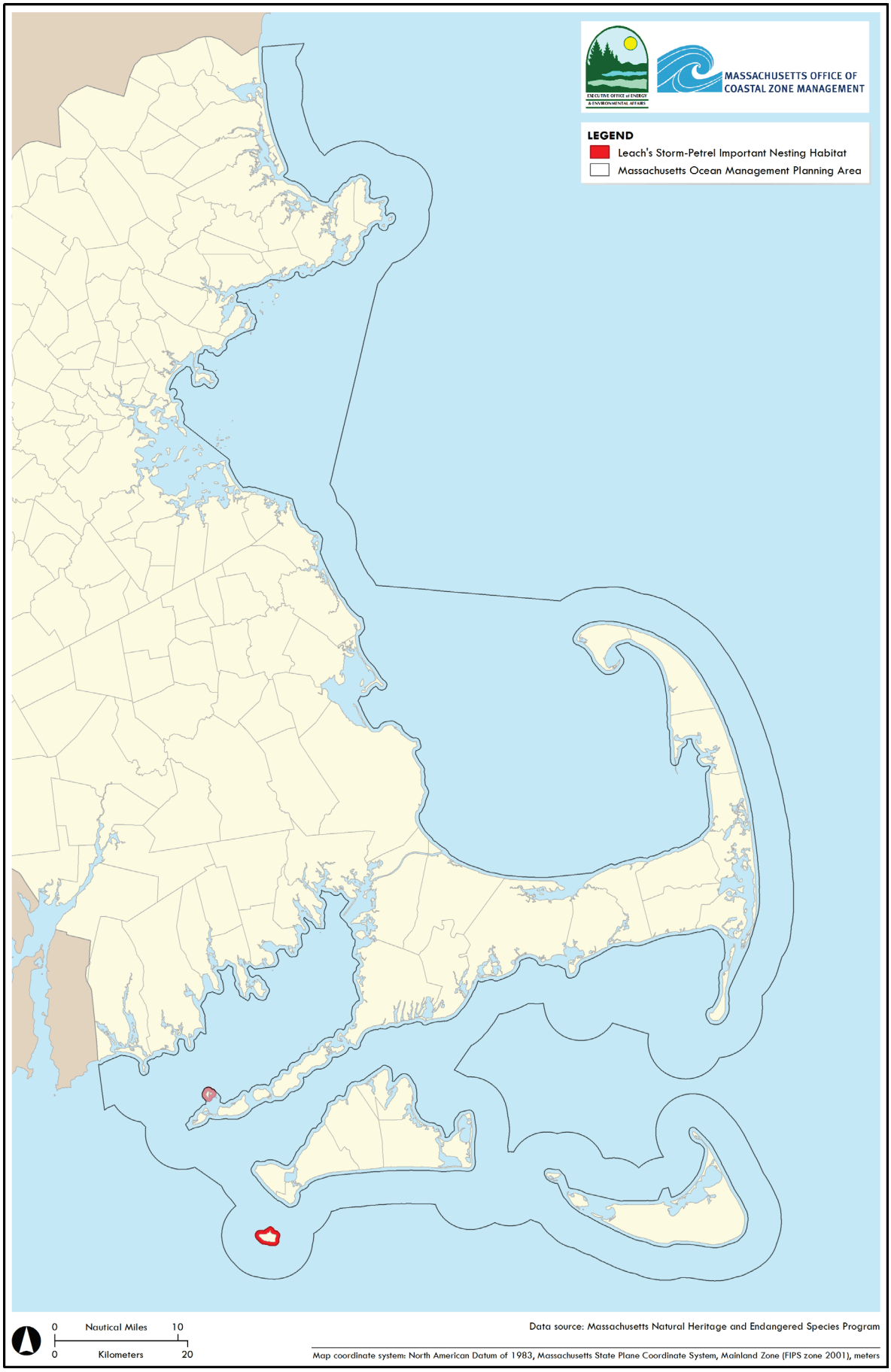

Figure 11. Special, sensitive, or unique resource: Leach's Storm-Petrel important nesting habitat

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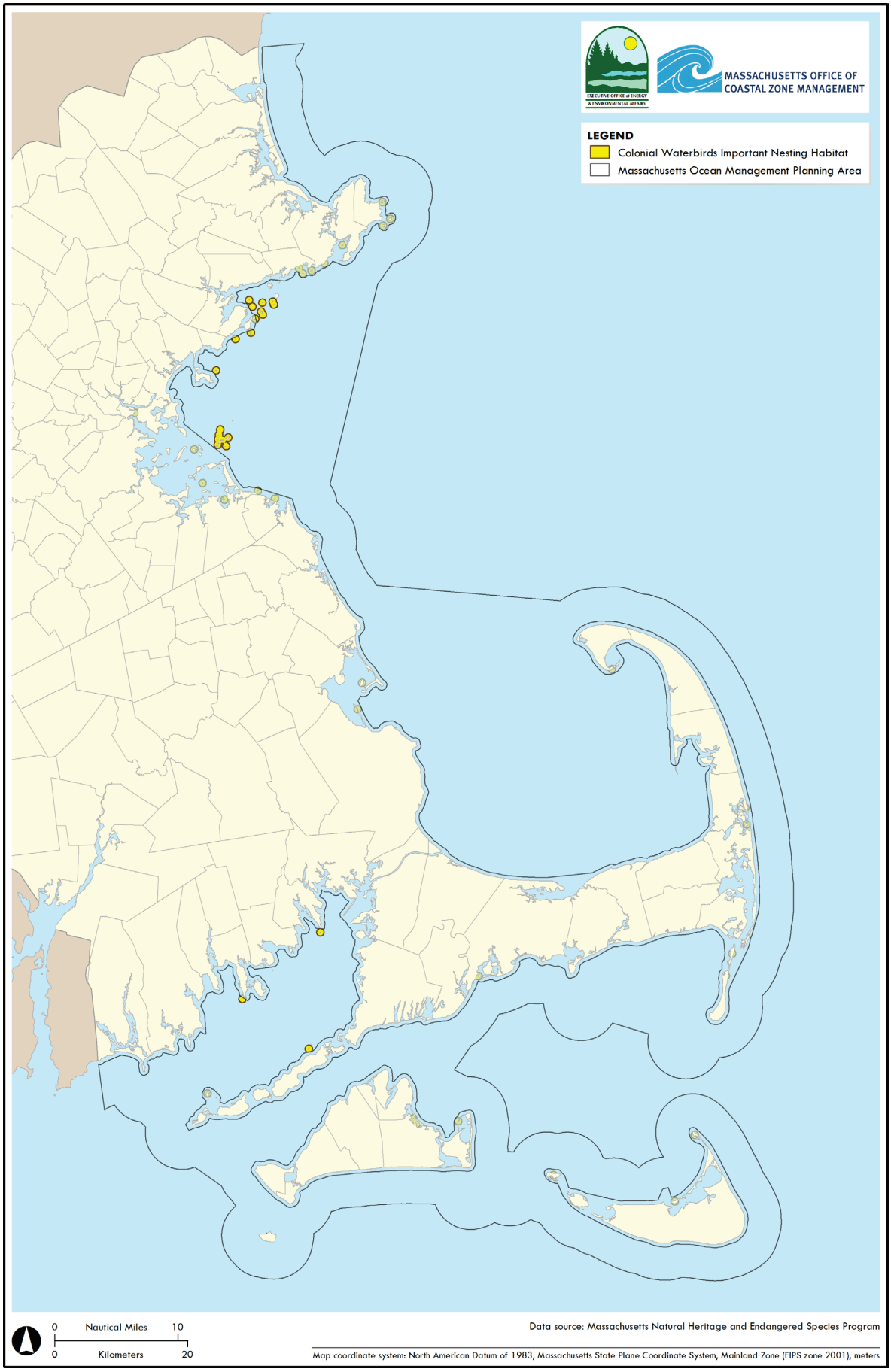

Figure 12. Special, sensitive, or unique resource: colonial waterbirds important nesting habitat

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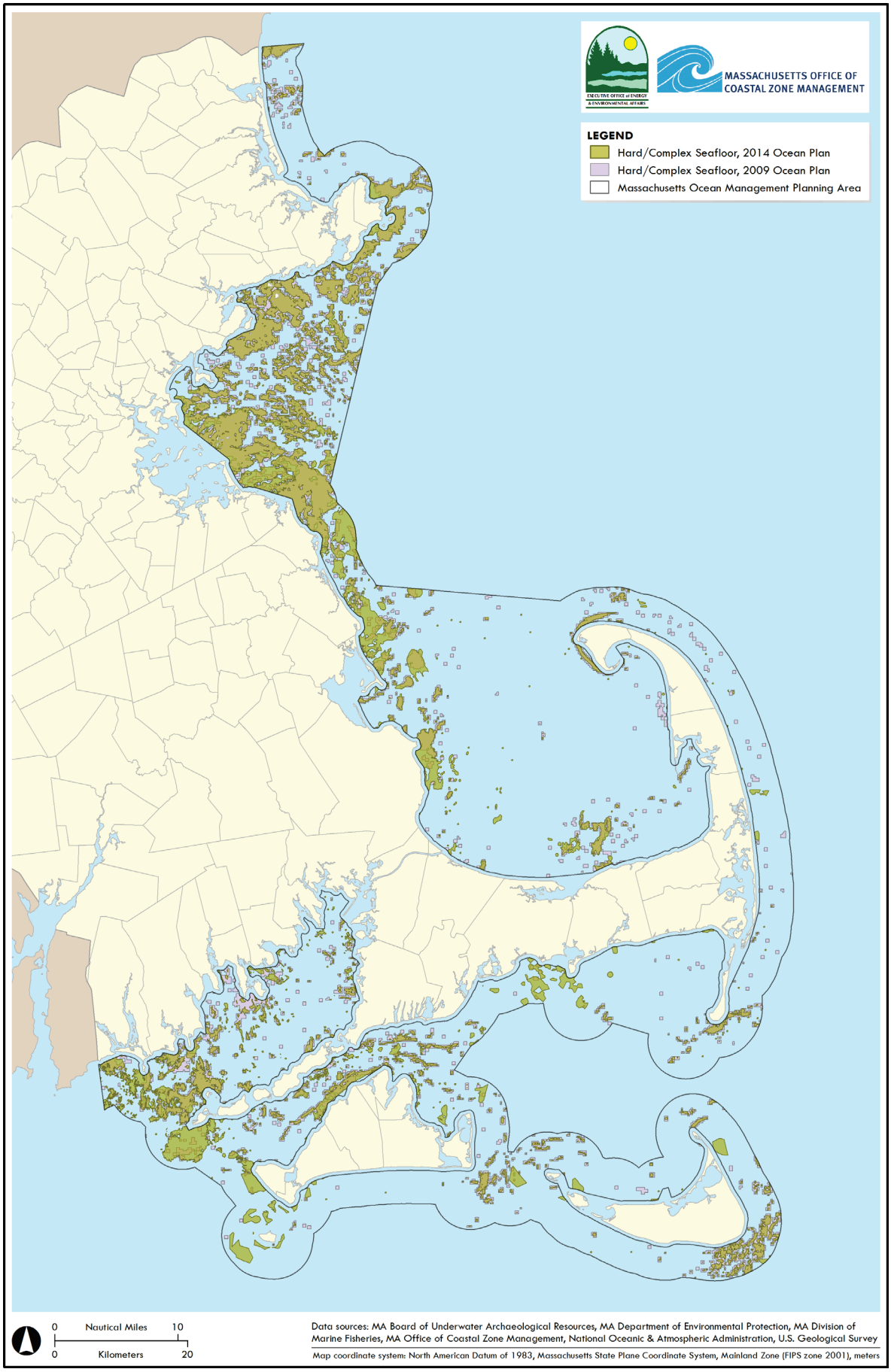

Figure 13. Special, sensitive, or unique resource: hard/complex seafloor 2009 and 2014

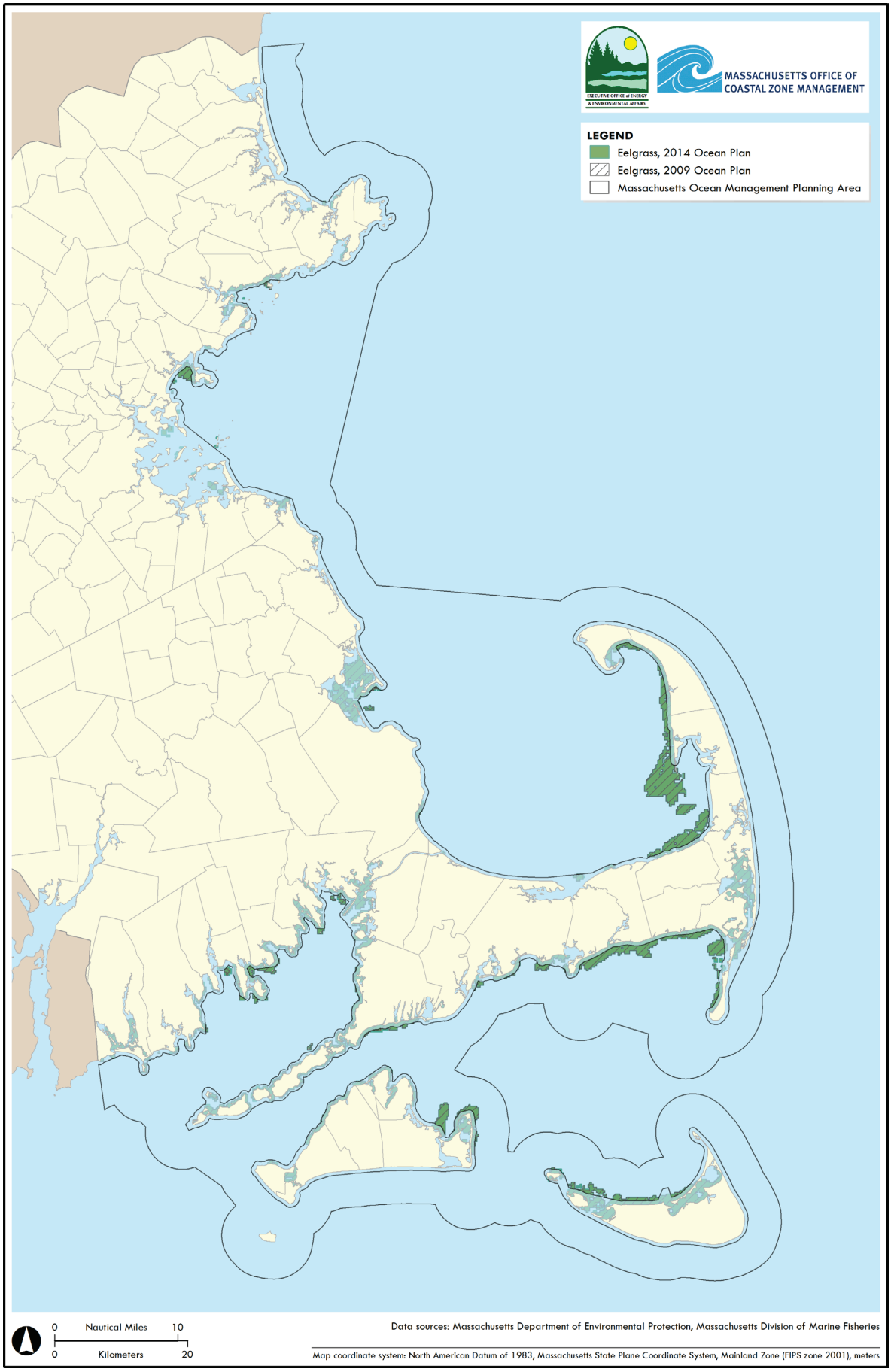

Figure 14. Special, sensitive, or unique resource: eelgrass 2009 and 2014

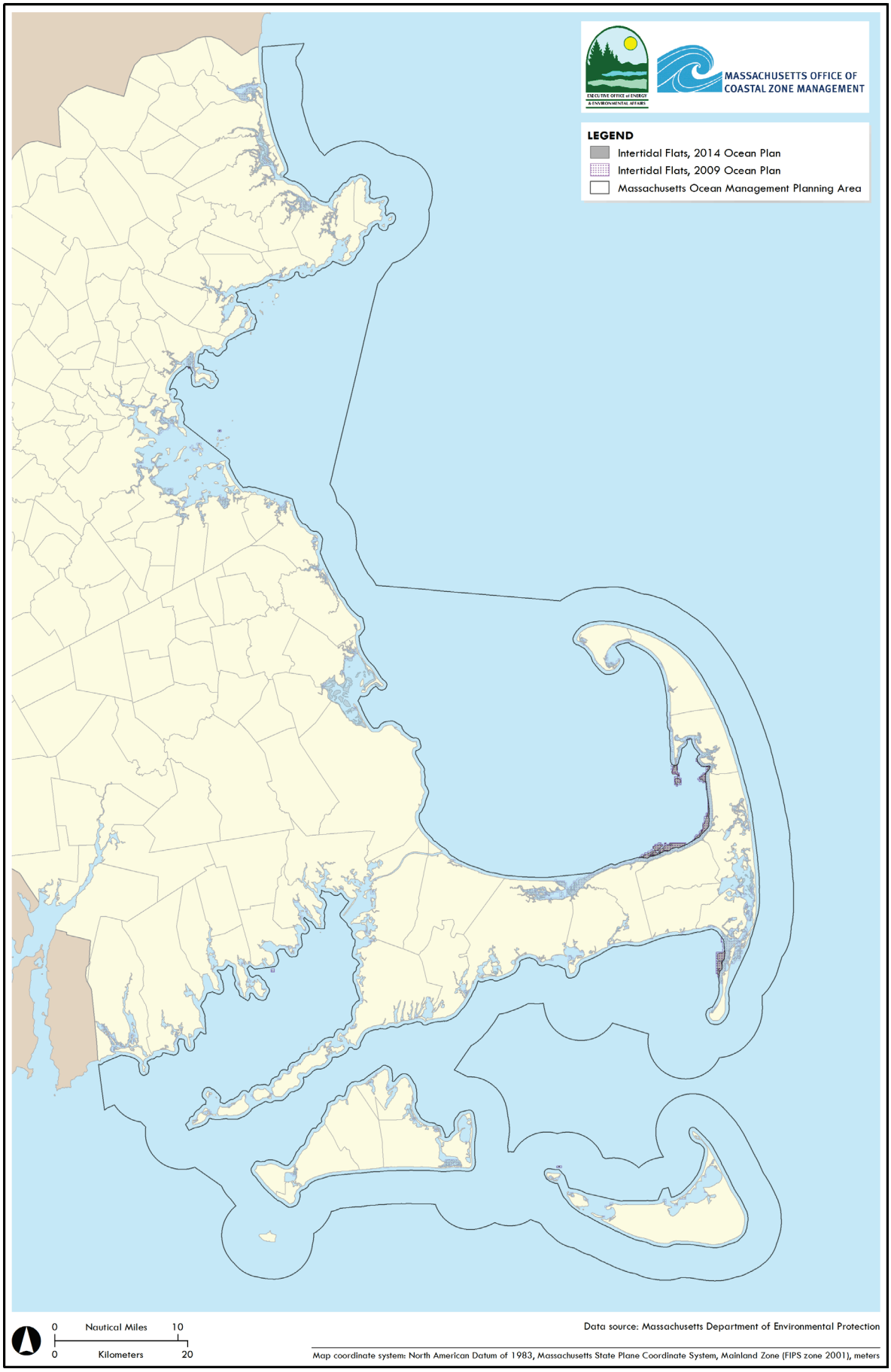

Figure 15. Special, sensitive, or unique resource: intertidal flats 2009 and 2014

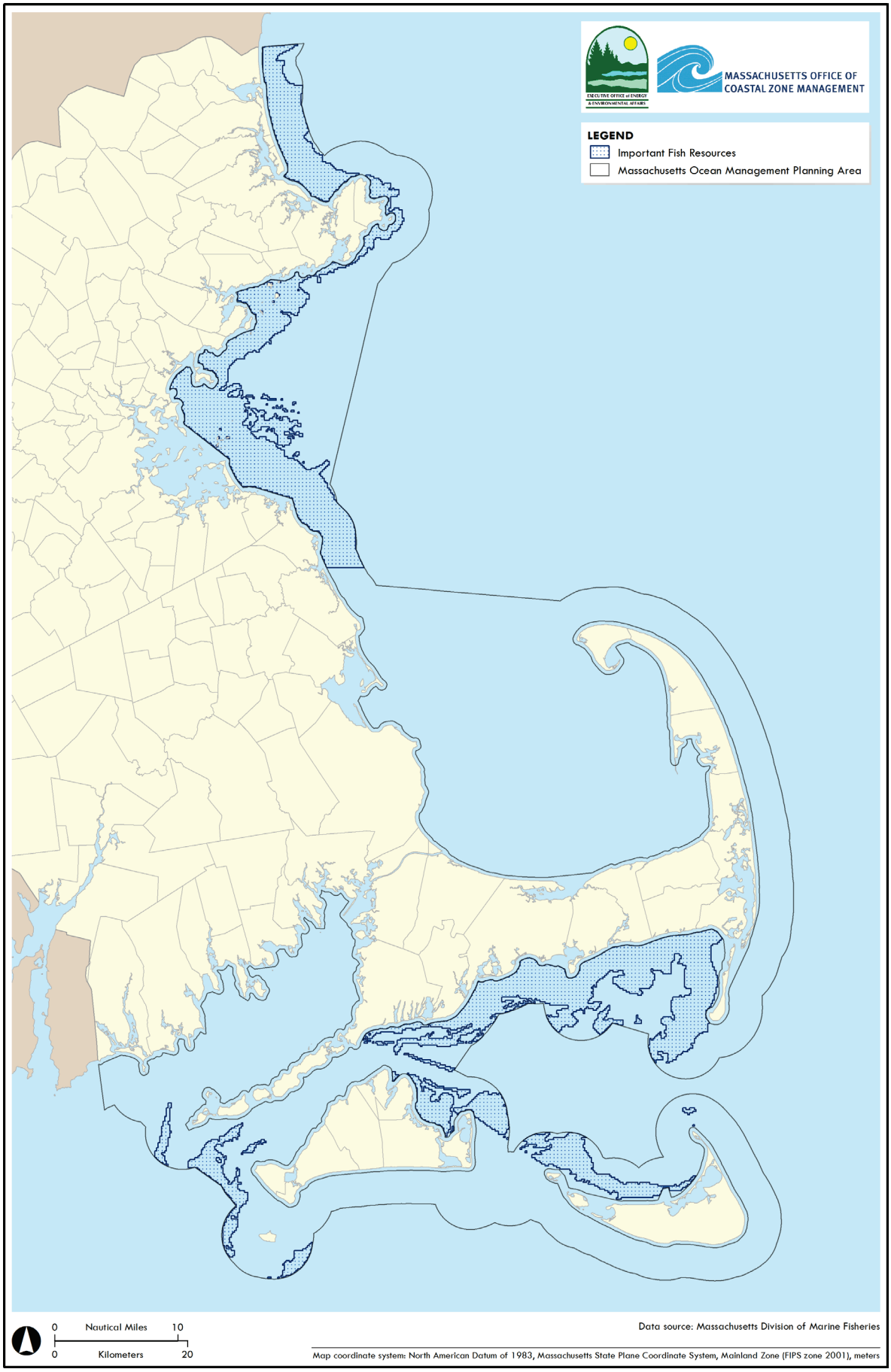

Figure 16. Special, sensitive, or unique resource: important fish resources

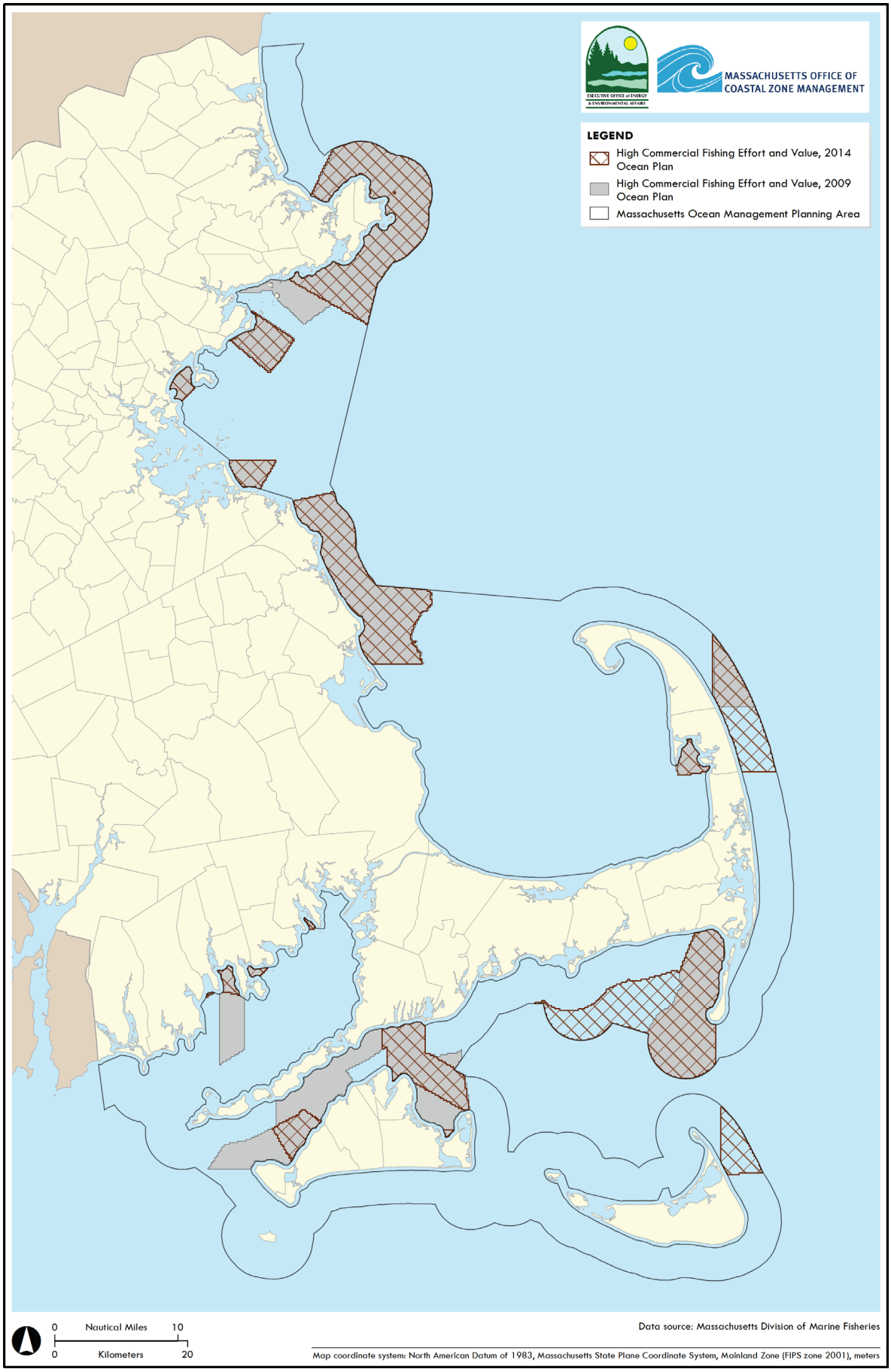

Figure 17. Concentrations of water-dependent use area: high commercial fishing effort and value 2009 and 2014

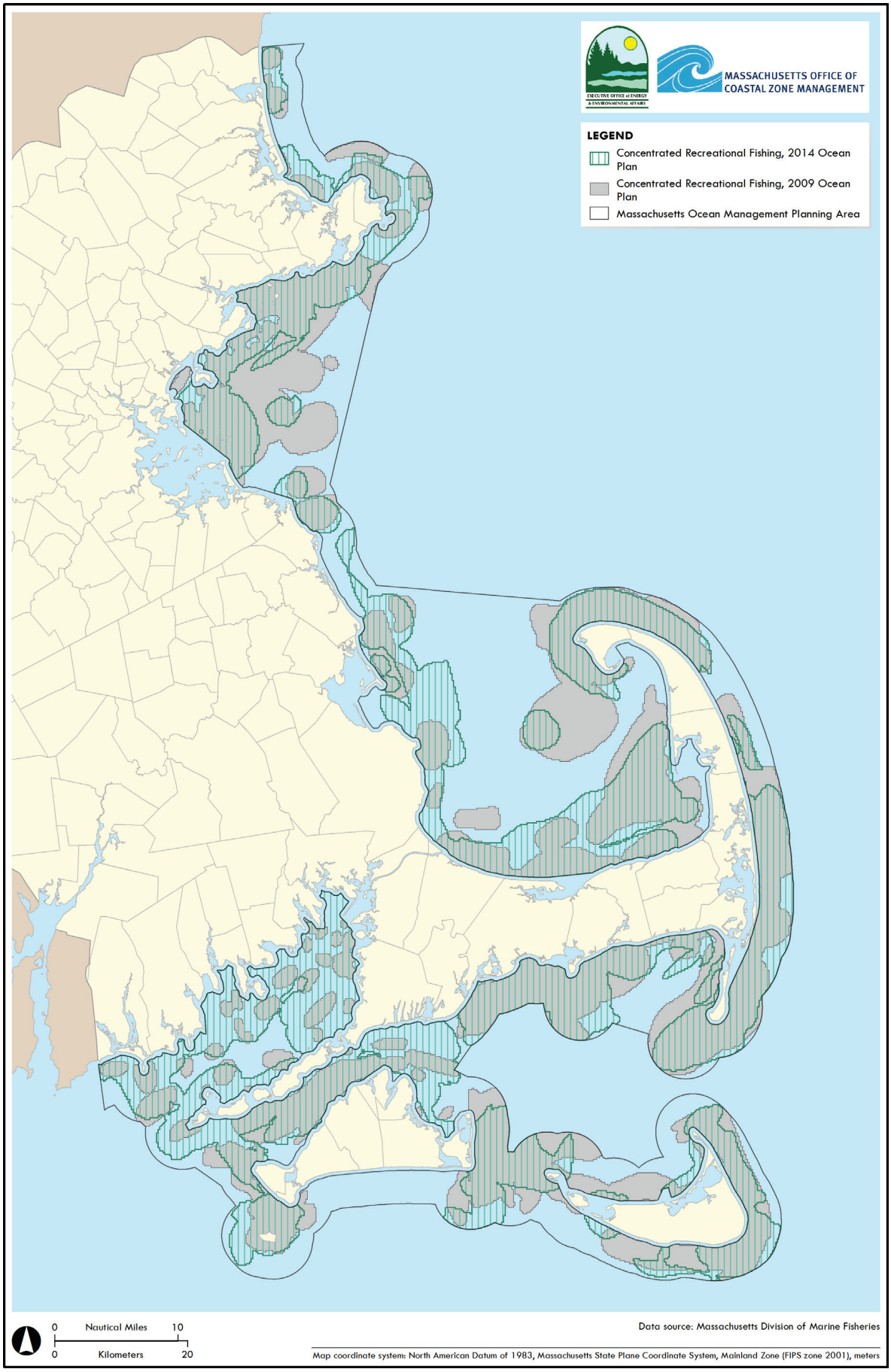

Figure 18. Concentrations of water-dependent use area: concentrated recreational fishing 2009 and 2014

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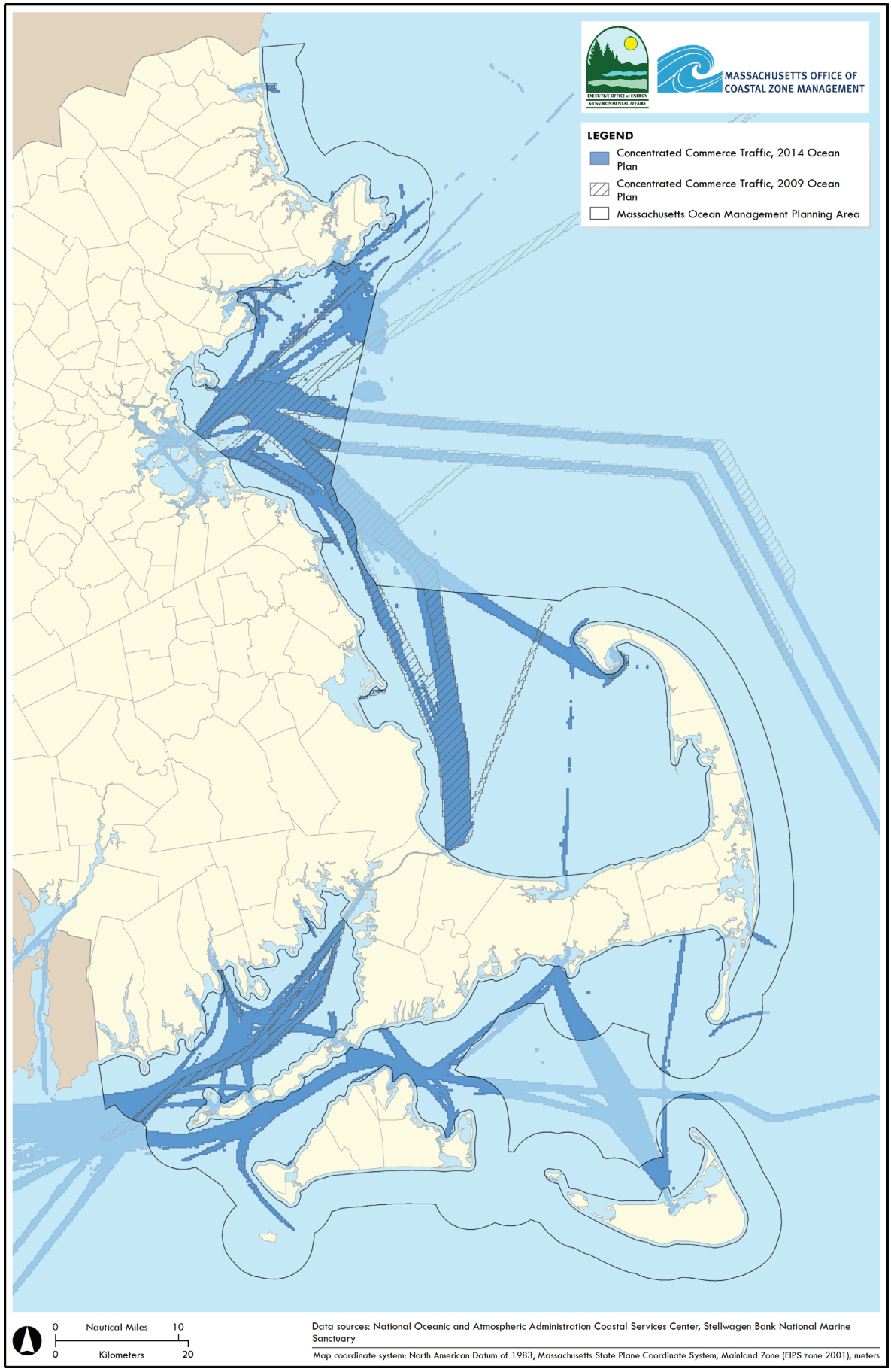

Figure 19. Concentrations of water-dependent use area: concentrated commerce traffic 2009 and 2014

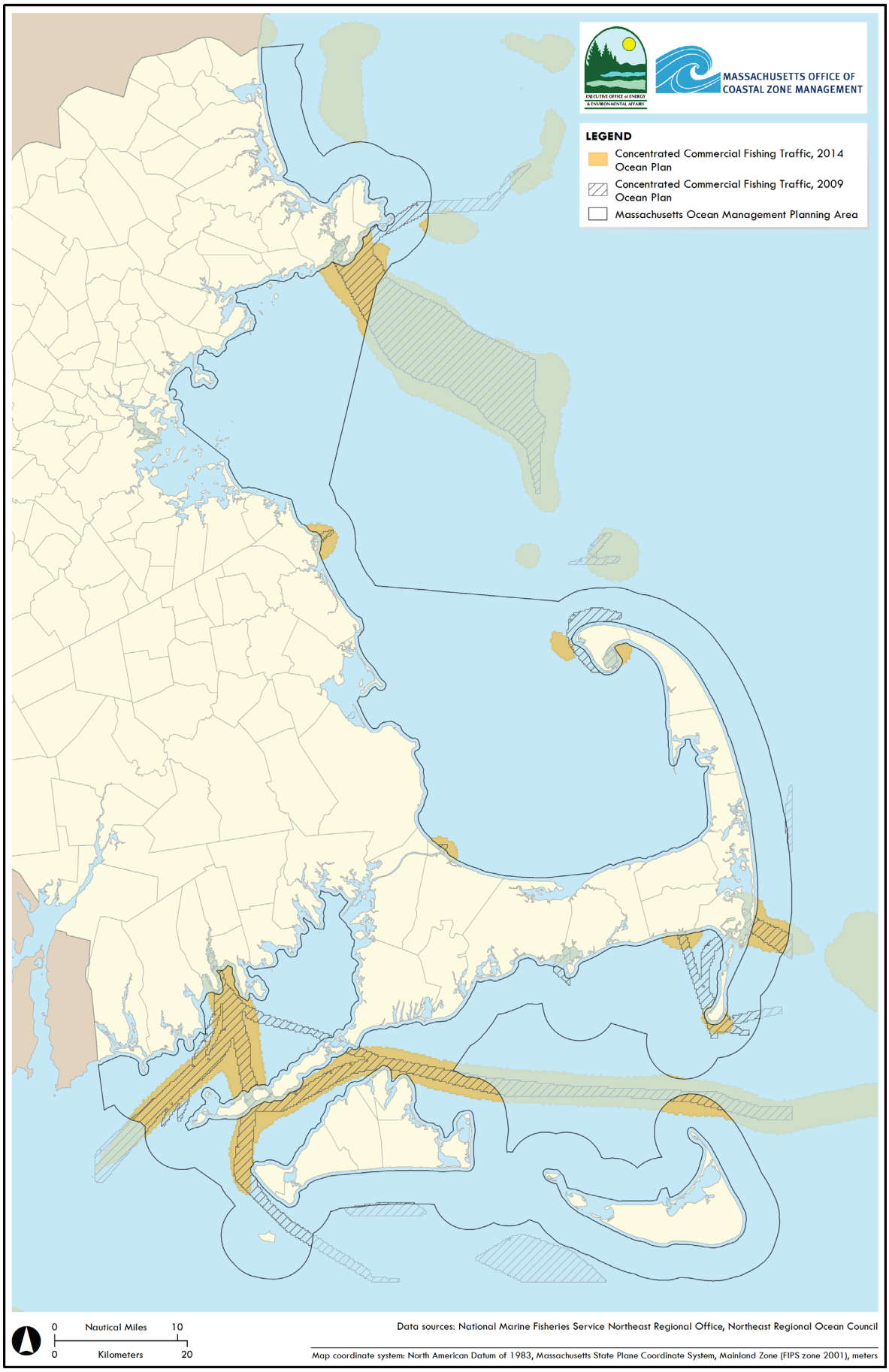

Figure 20. Concentrations of water-dependent use area: concentrated commercial fishing traffic 2009 and 2014

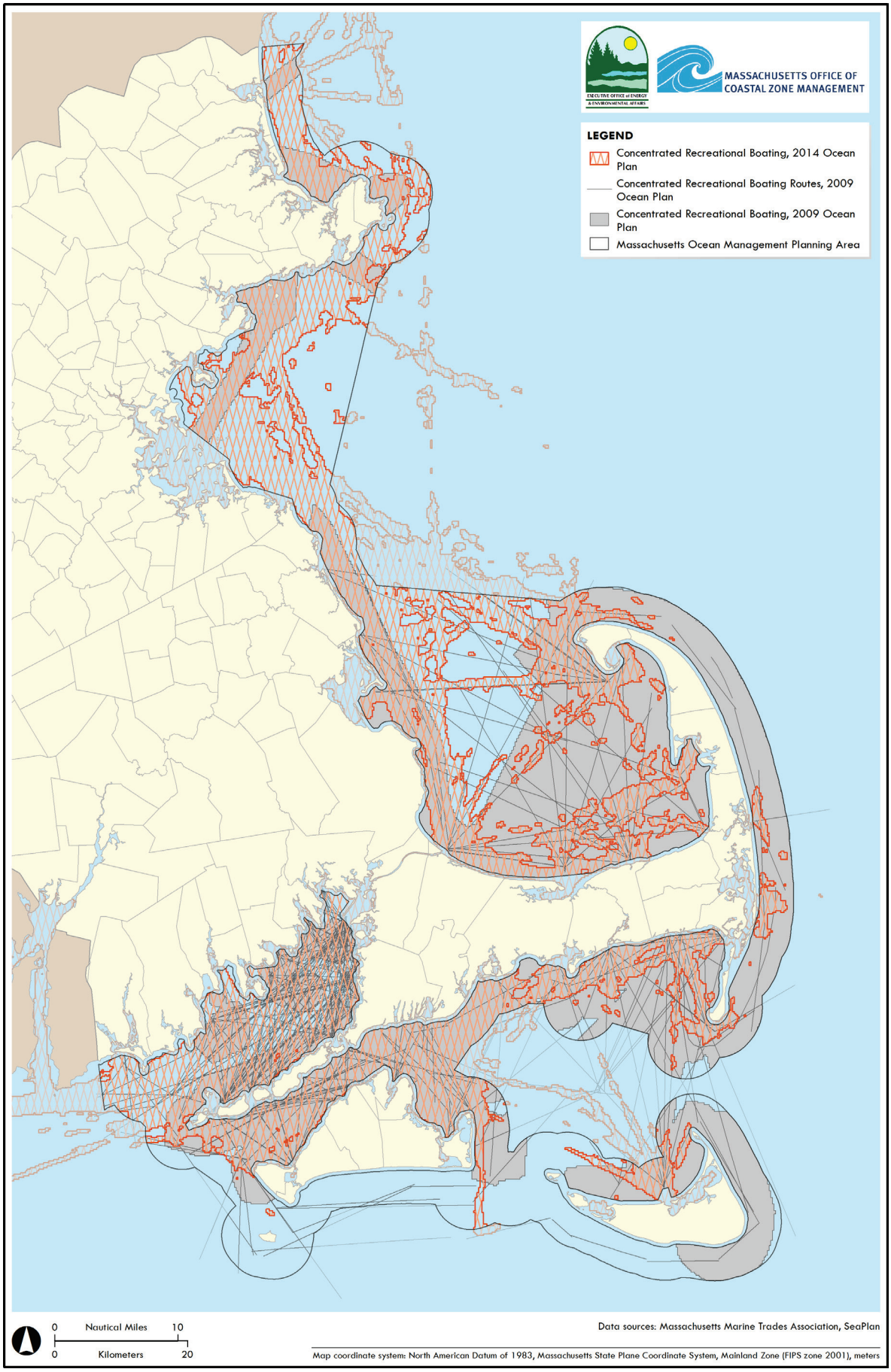

Figure 21. Concentrations of water-dependent use area: concentrated recreational boating 2009 and 2014

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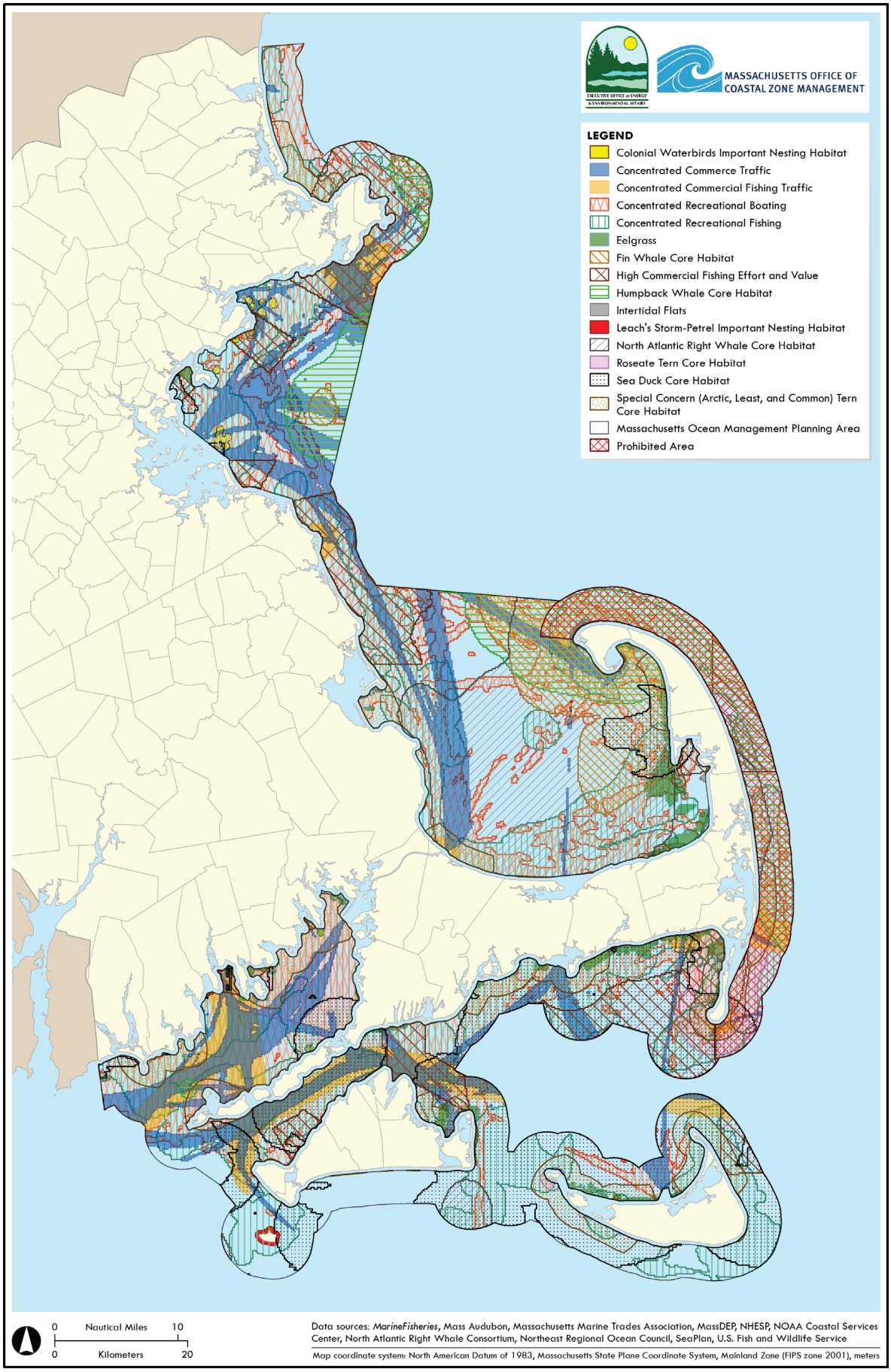

Figure 22. Special, sensitive, or unique resources and concentrations of water-dependent uses to be addressed for community-scale wind energy facilities

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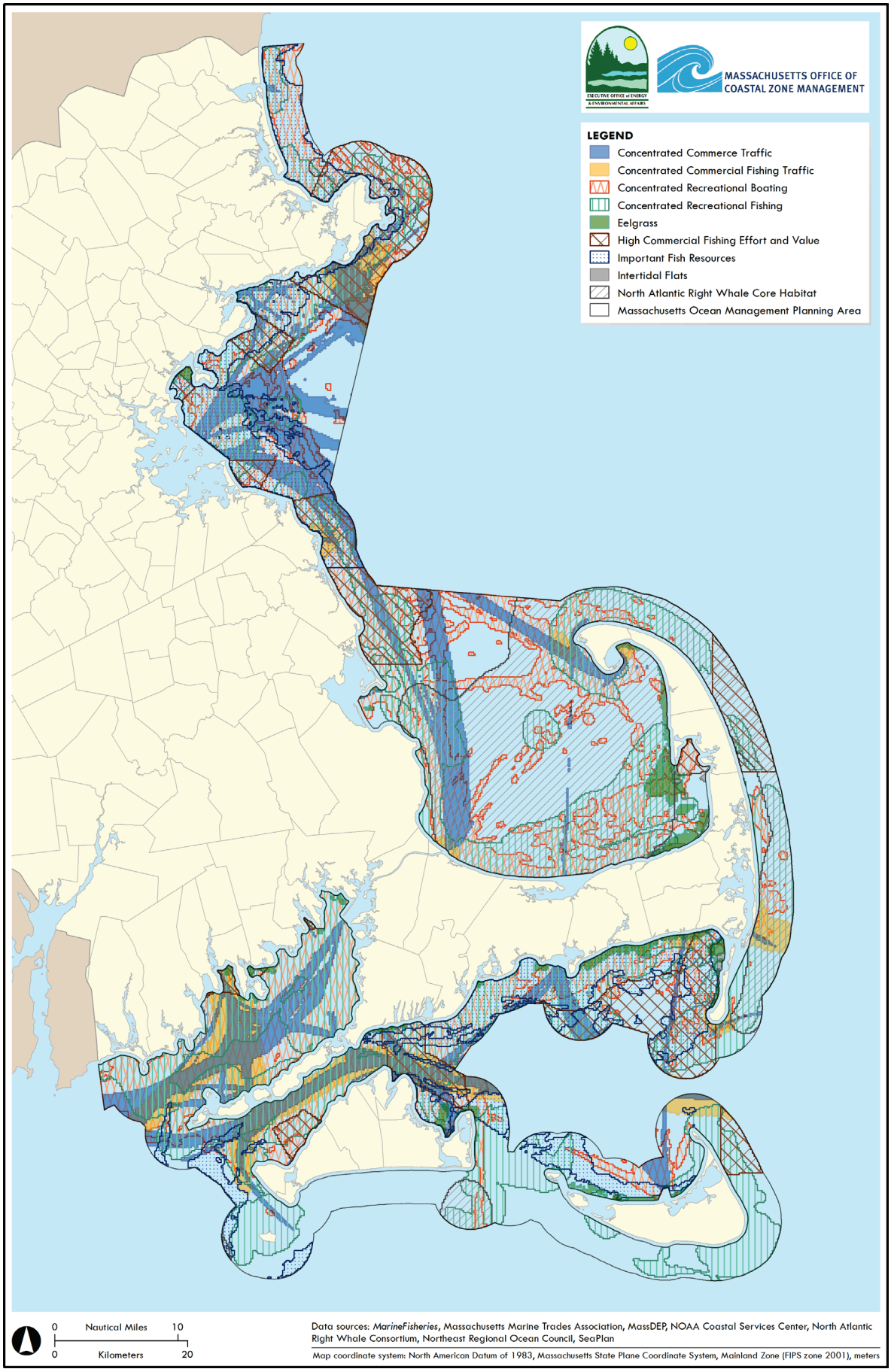

Figure 23. Special, sensitive, or unique resources and concentrations of water-dependent uses to be addressed for commercial-scale tidal energy facilities

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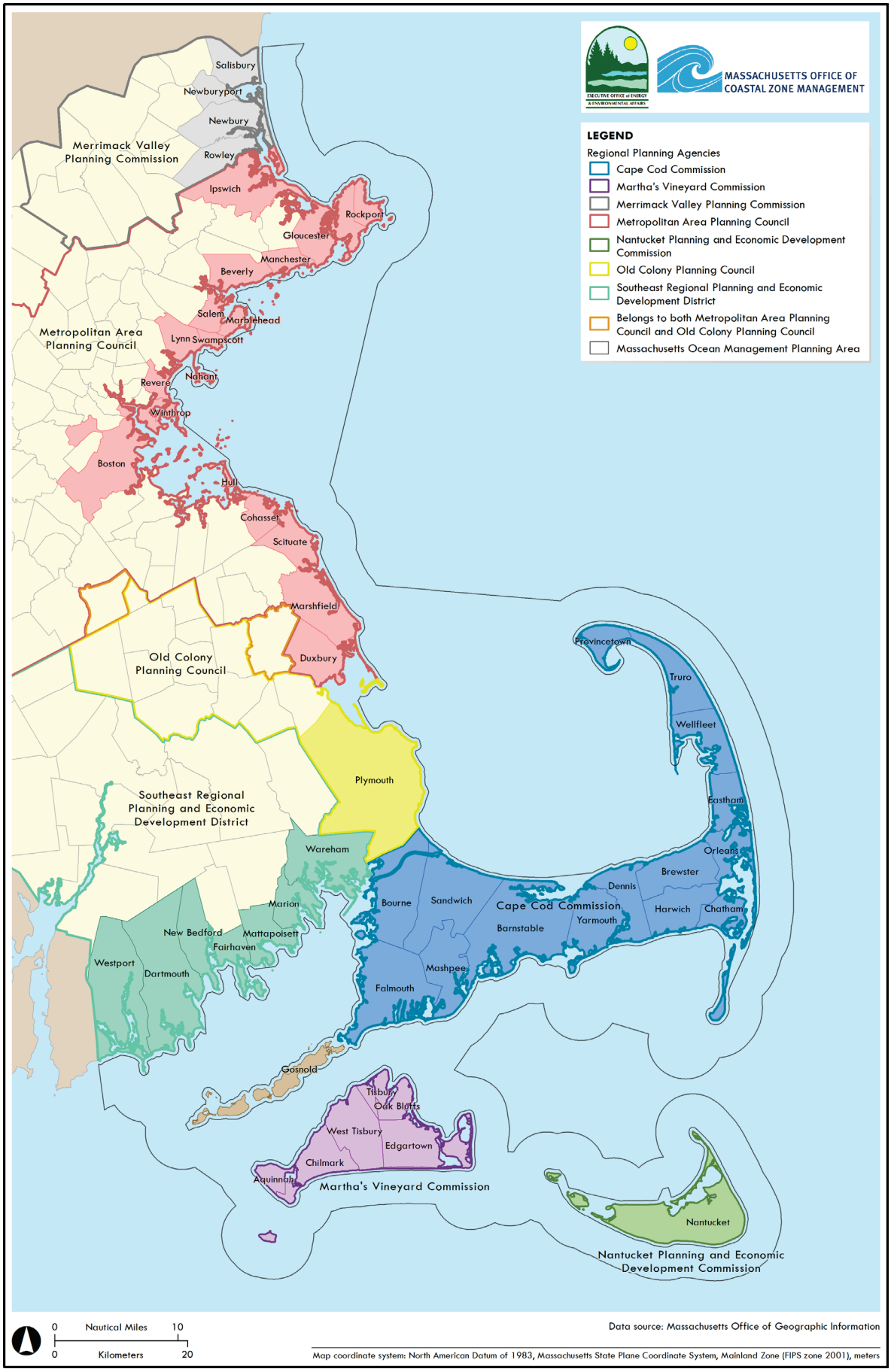

Figure 24. Regional planning agencies and municipalities adjacent to the planning area

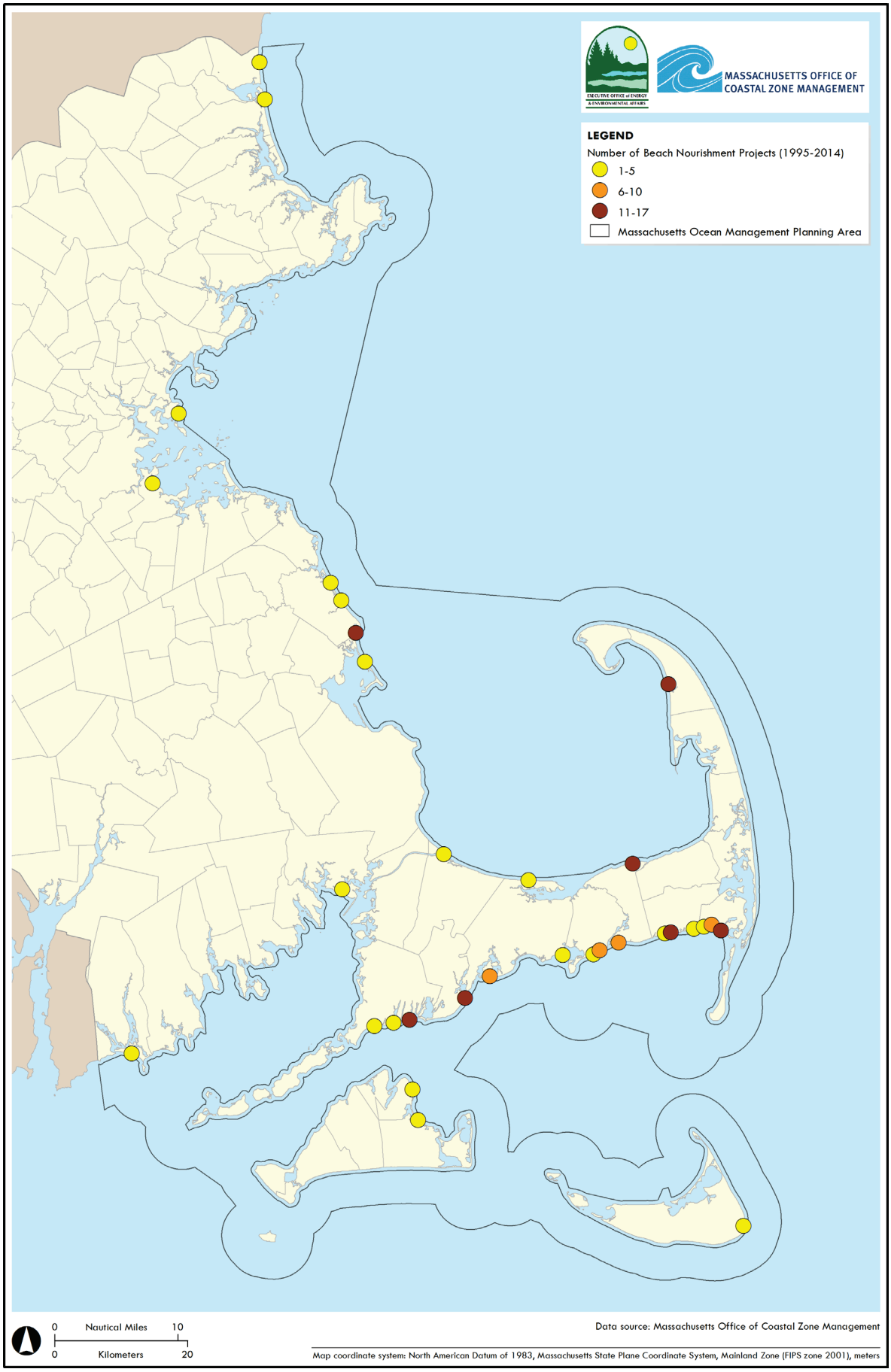

Figure 25. Beach nourishment projects in Massachusetts from 1995-2014

Figure 26. Communities with highest short-term erosion rates

Figure 27. Public beaches with highest short-term erosion rates

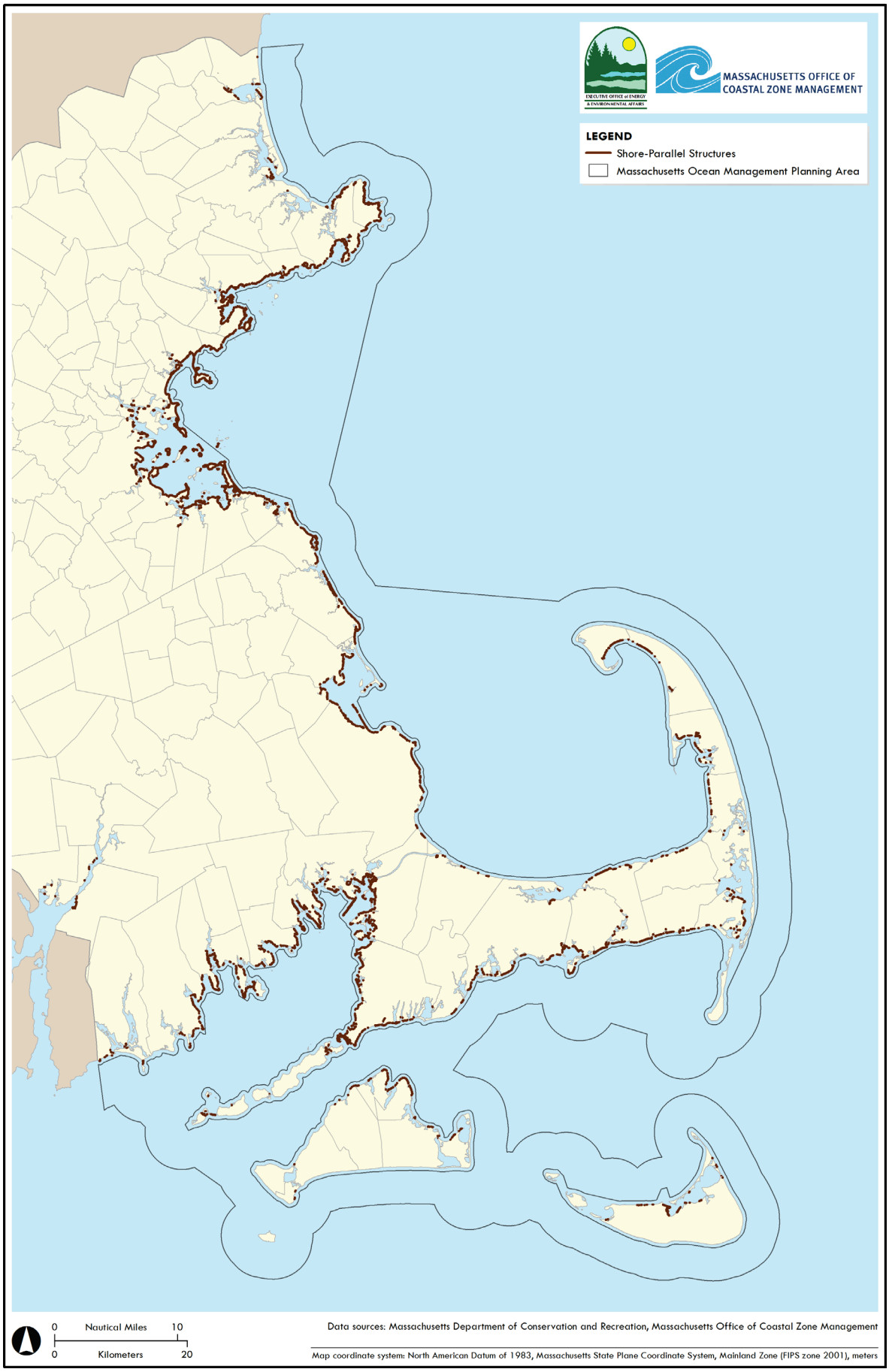

Figure 28. Extent of shoreline with shore-parallel structures

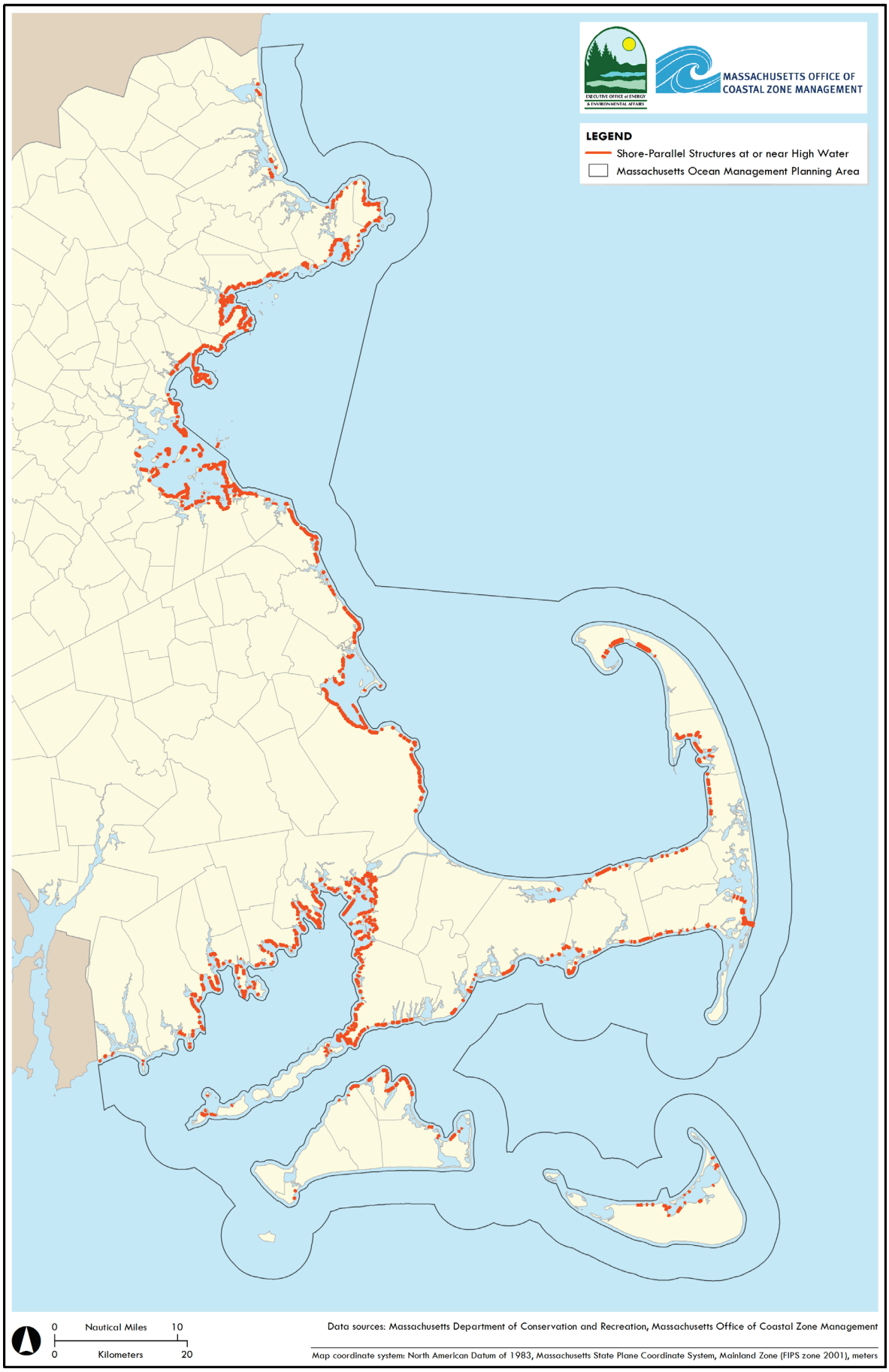

Figure 29. Areas where shore-parallel structures are at or near high water

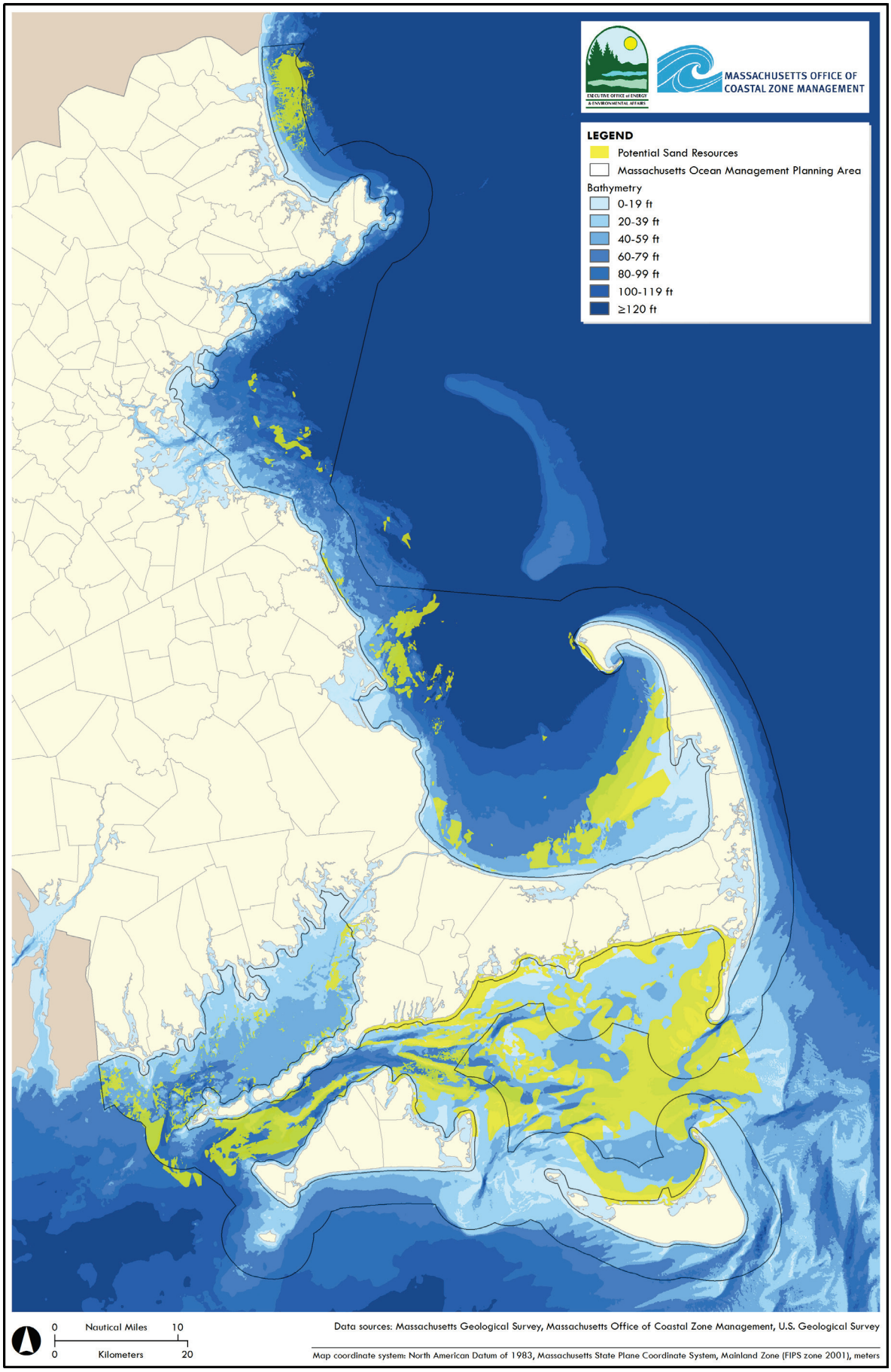

Figure 30. Potential sand resources

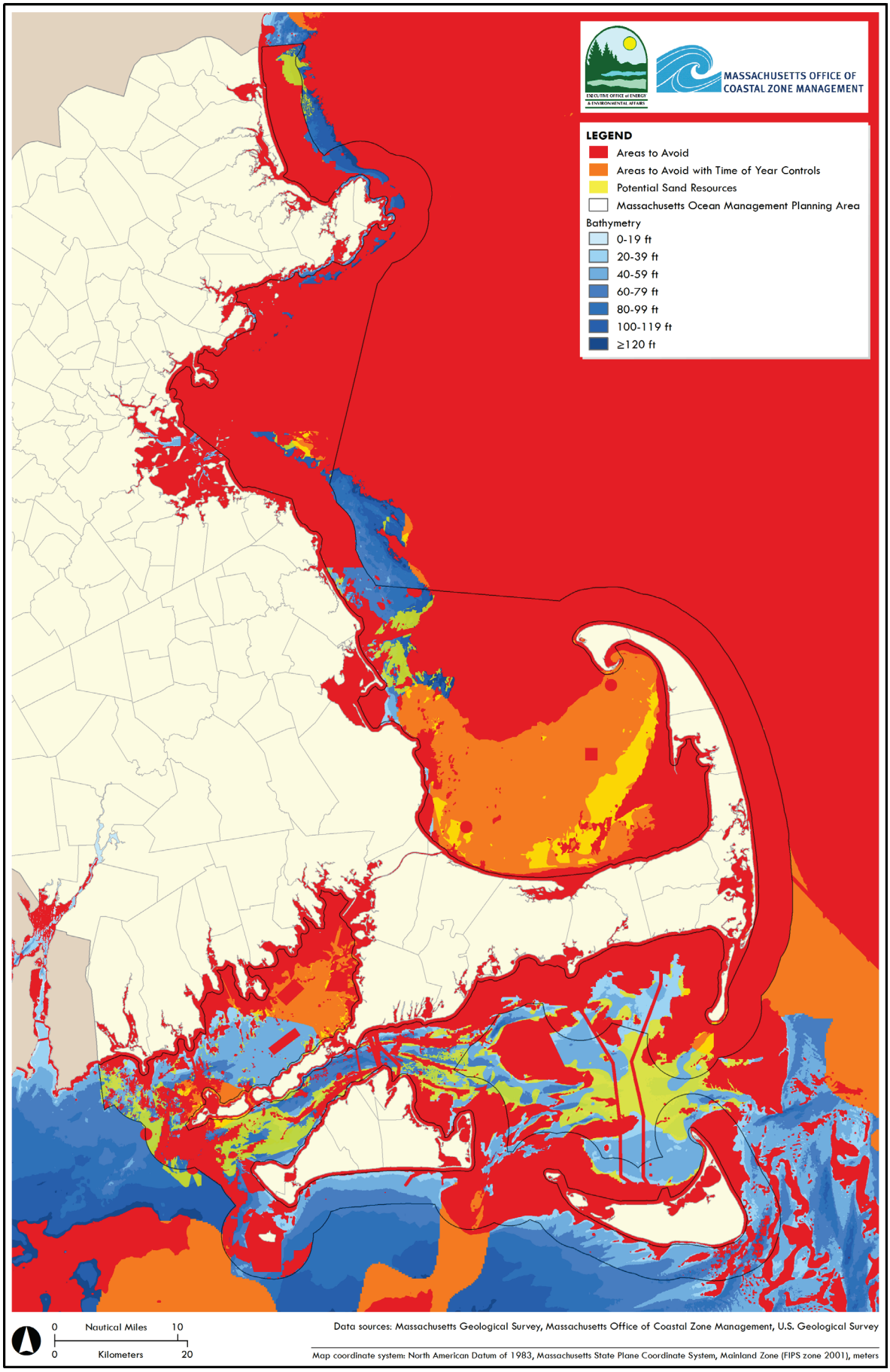

Figure 31. Areas to avoid for offshore sand projects for beach nourishment

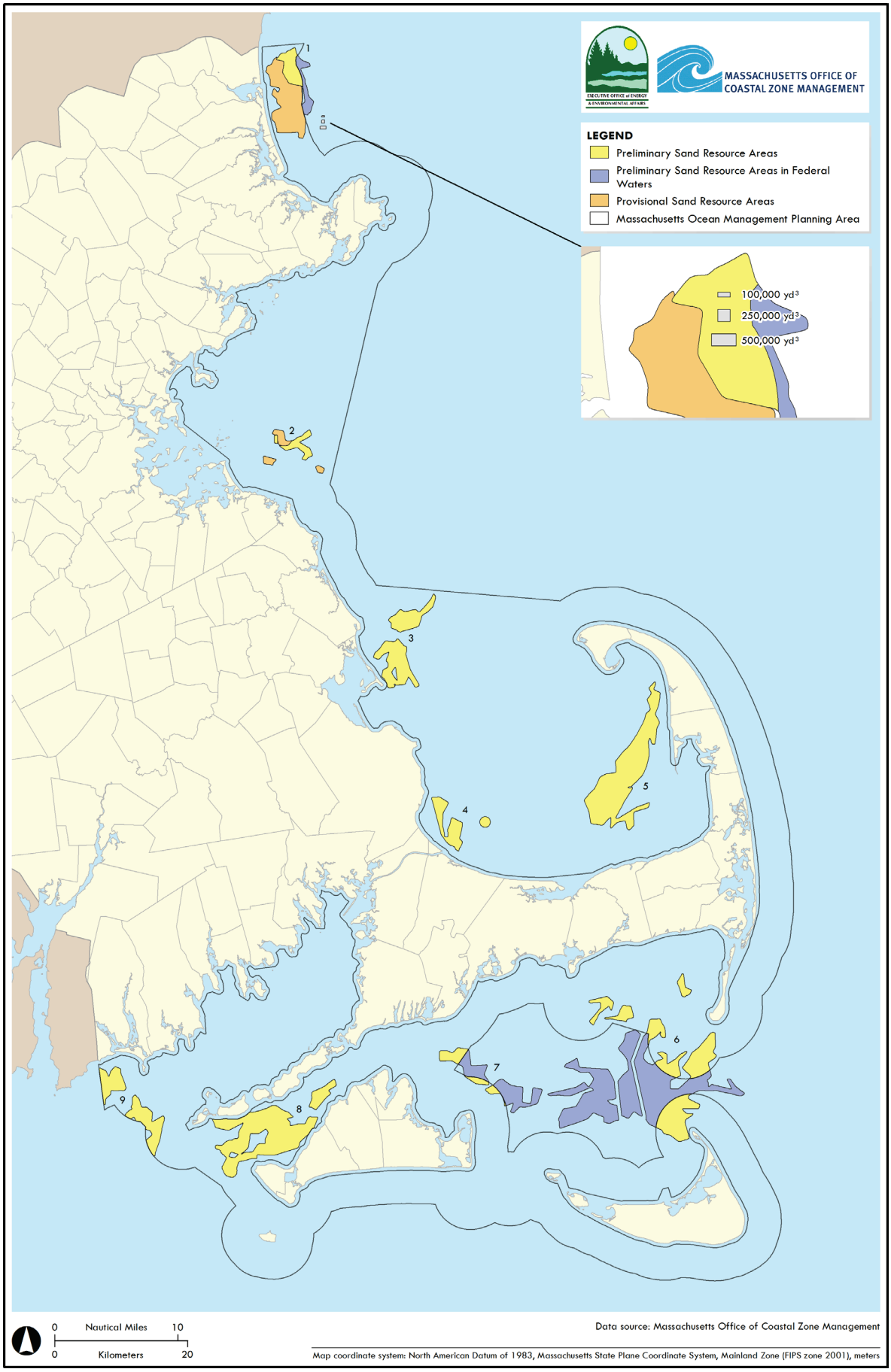

Figure 32. Preliminary and provisional sand resource areas for offshore sand projects for beach nourishment

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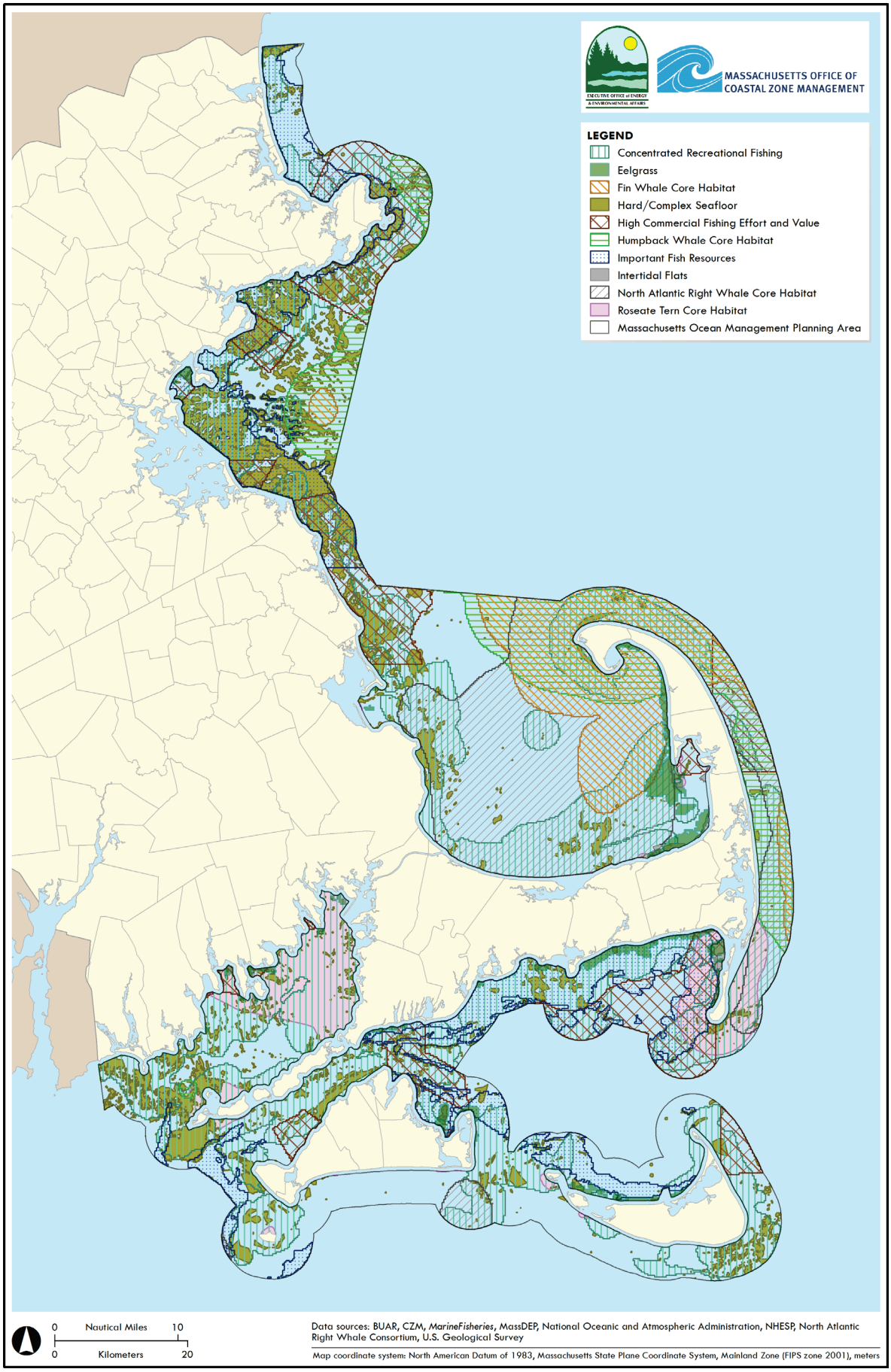

Figure 33. Special, sensitive, or unique resources and concentrations of water-dependent uses to be addressed for offshore sand projects for beach nourishment

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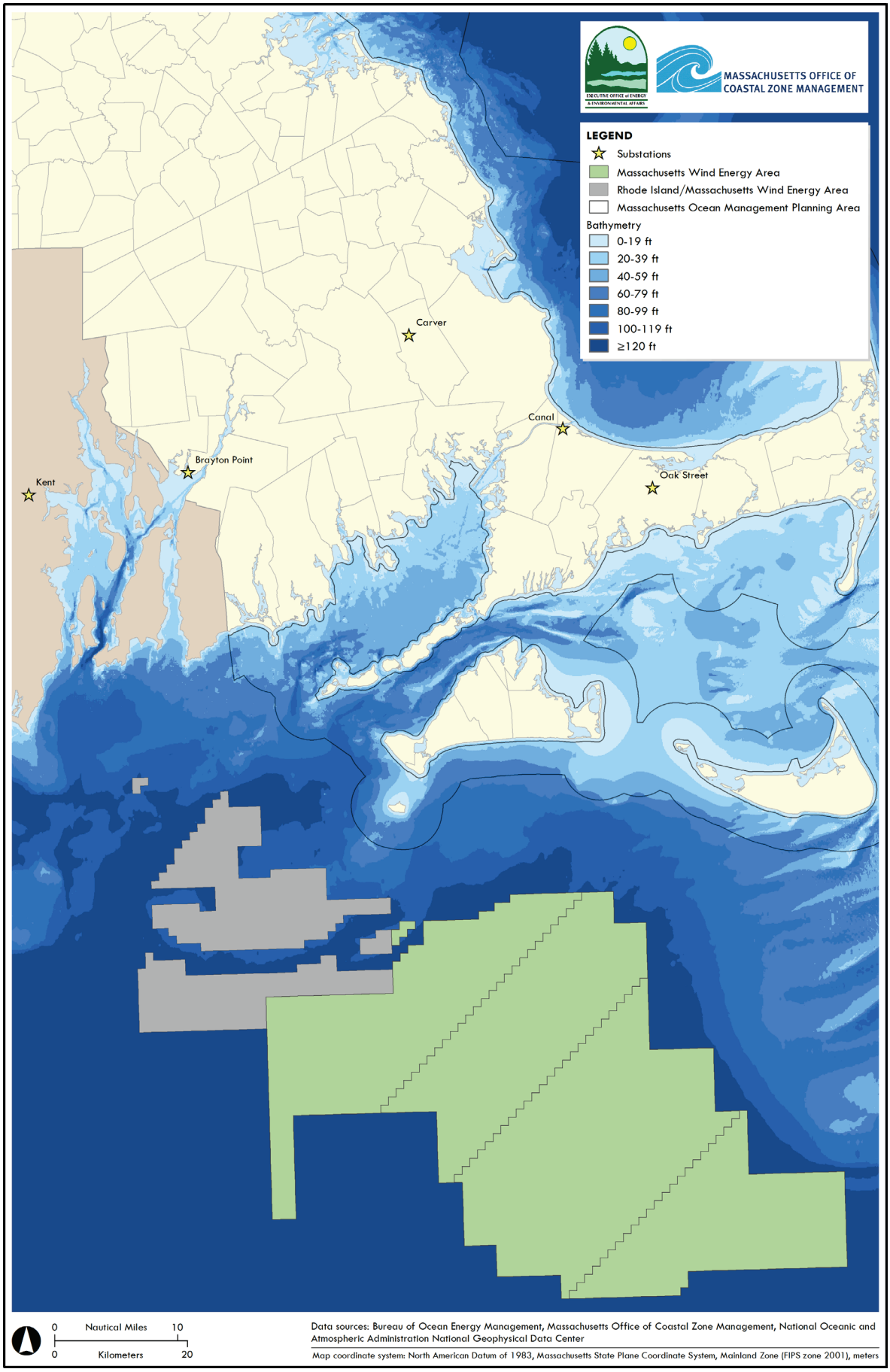

Figure 34. Federal Wind Energy Areas and priority substations

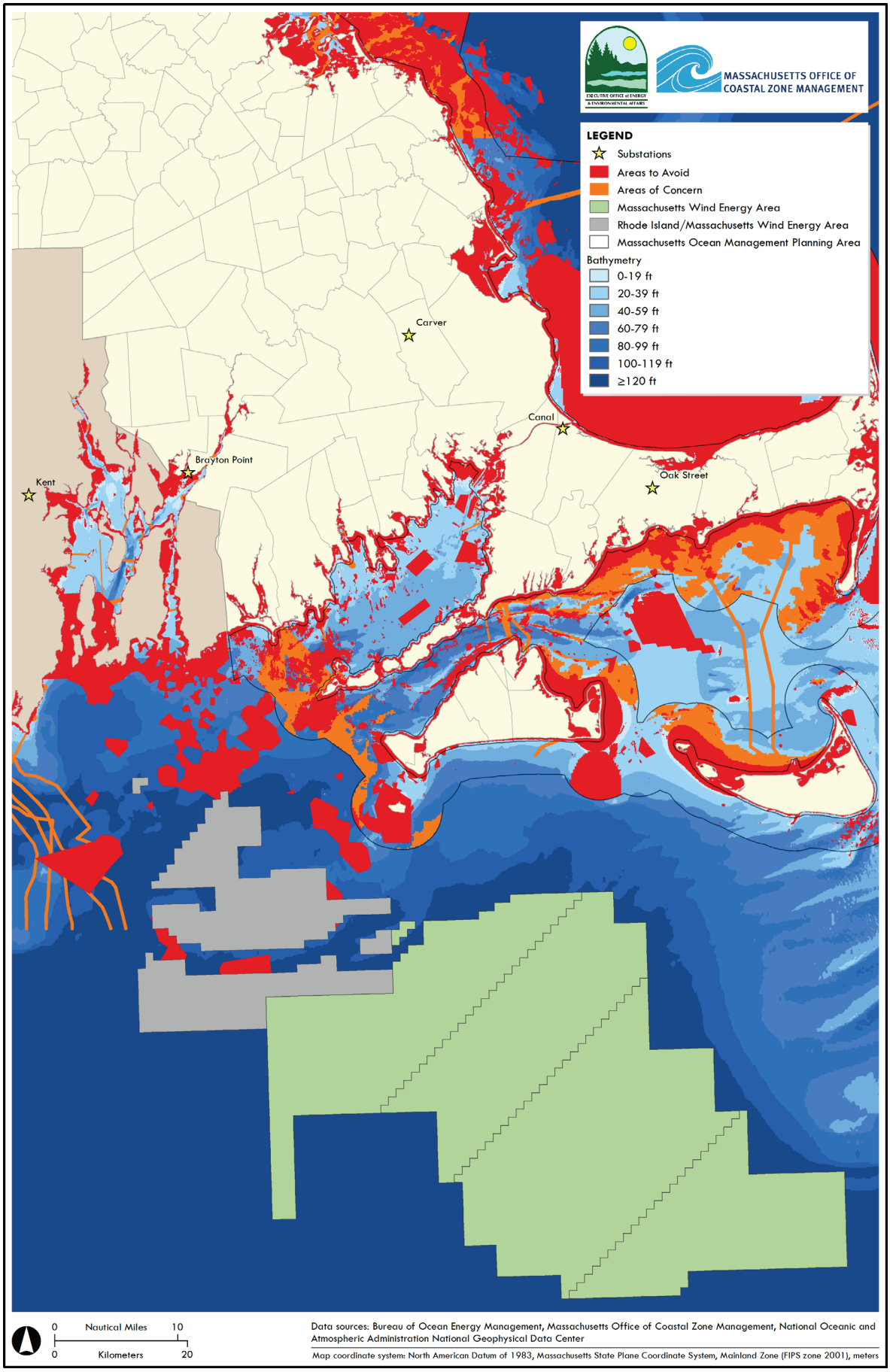

Figure 35. Areas to avoid and areas of concern for siting of potential offshore wind transmission cable corridors

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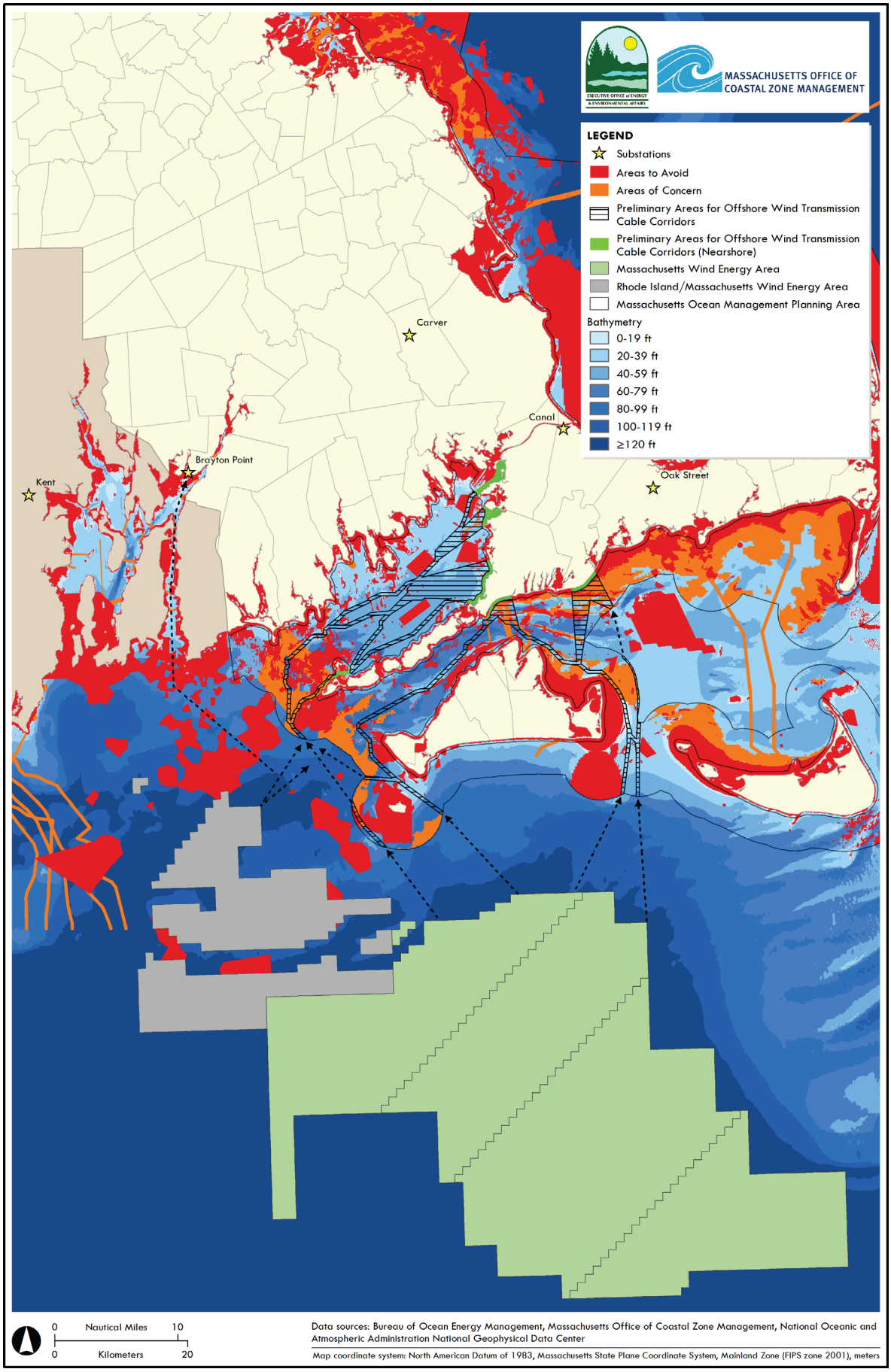

Figure 36. Areas to avoid, areas of concern, and preliminary areas for offshore wind transmission cable corridors

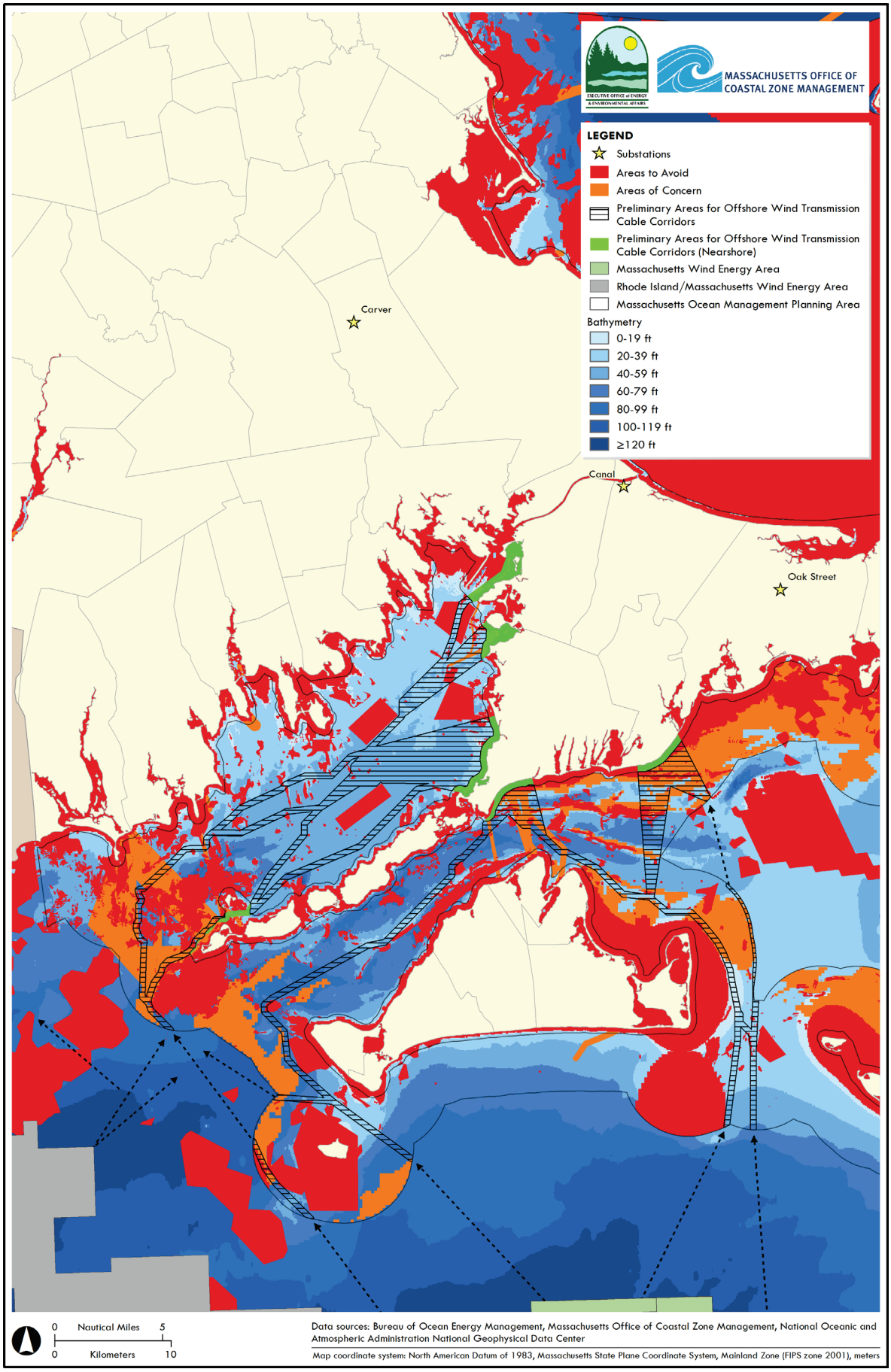

Figure 37. Close-up of areas to avoid, areas of concern, and preliminary areas for offshore wind transmission cable corridors

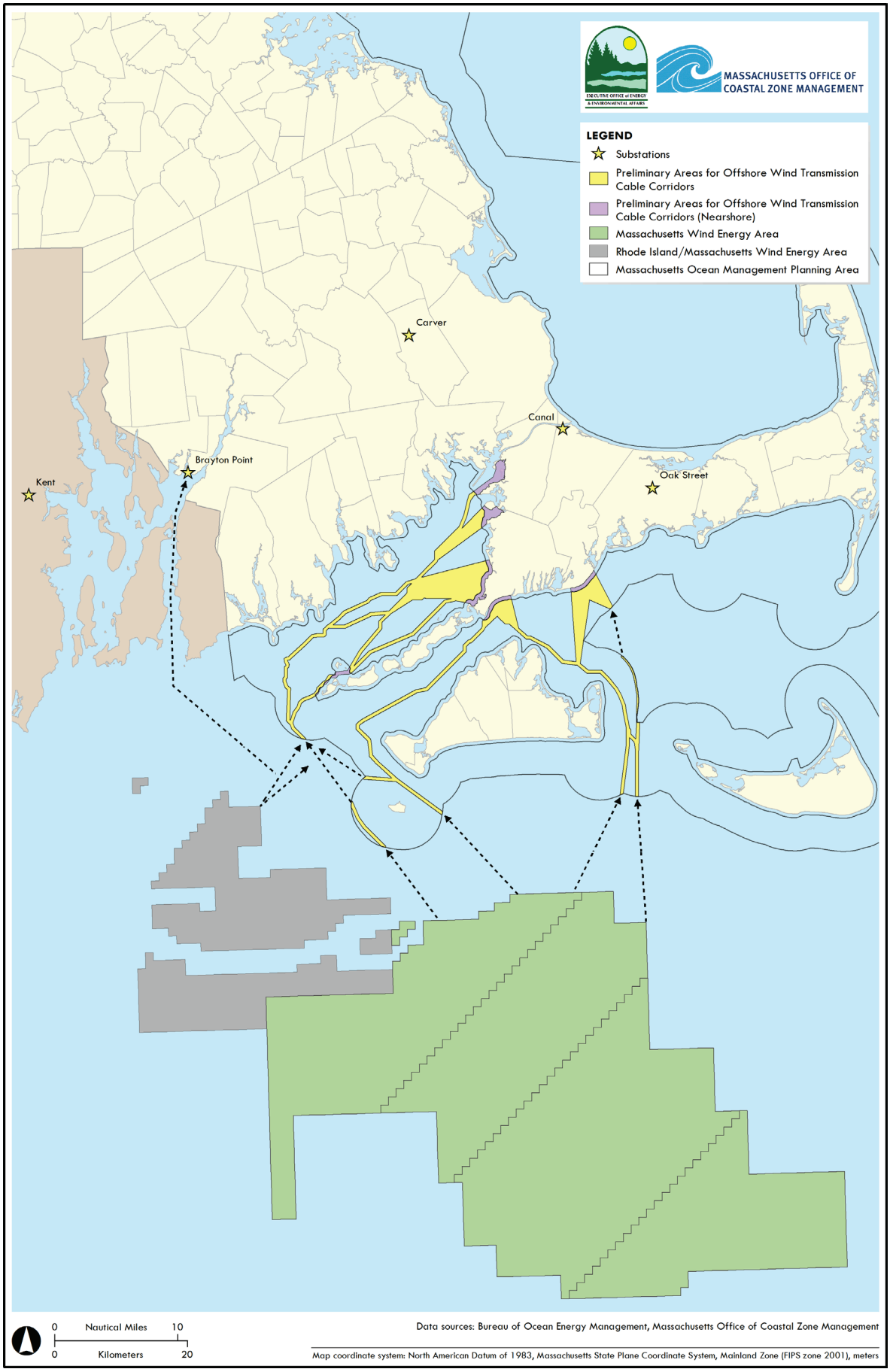

Figure 38. Preliminary areas for offshore wind transmission cable corridors

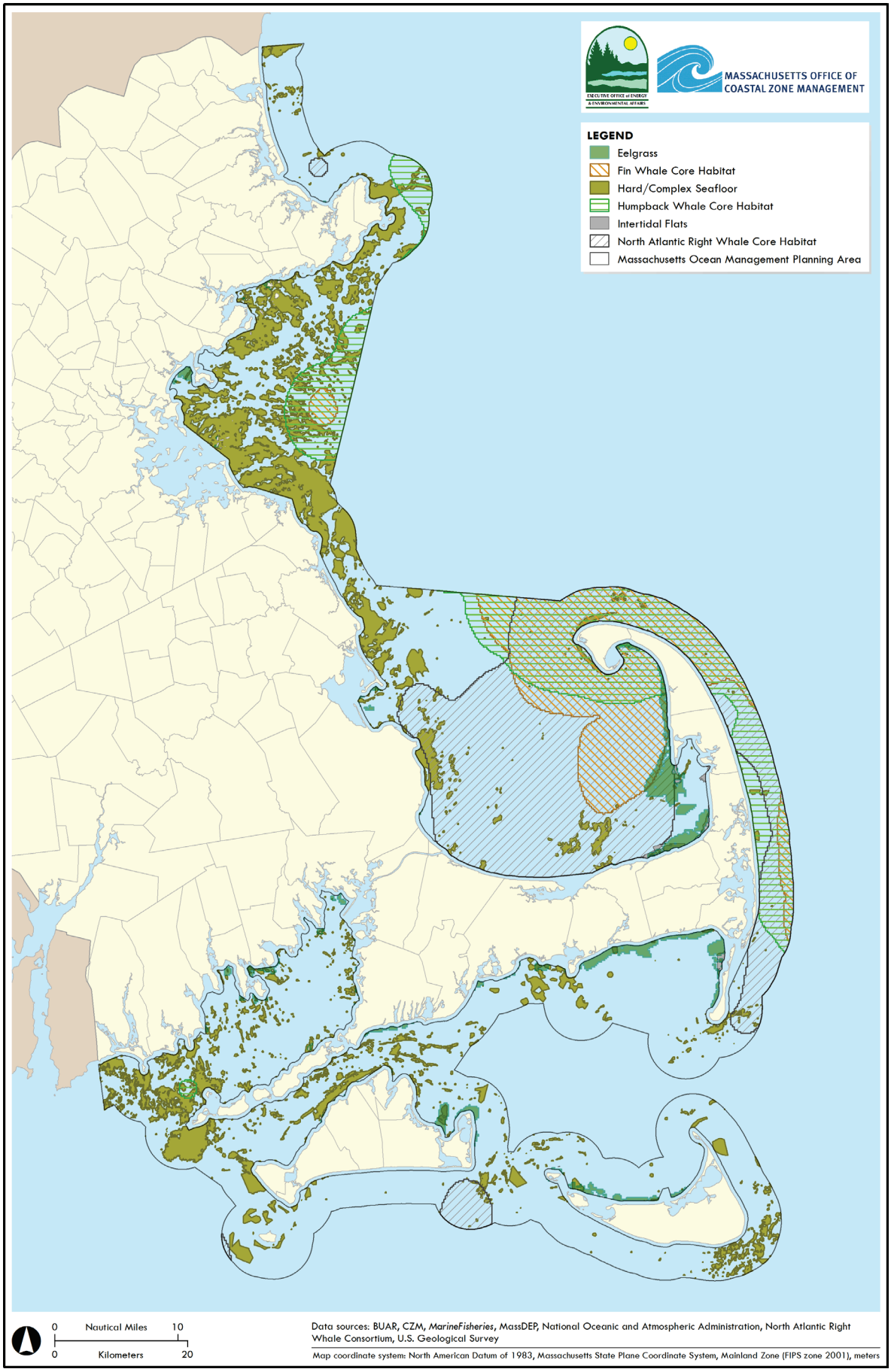

Figure 39. Special, sensitive, or unique resources and concentrations of water-dependent uses to be addressed for cables

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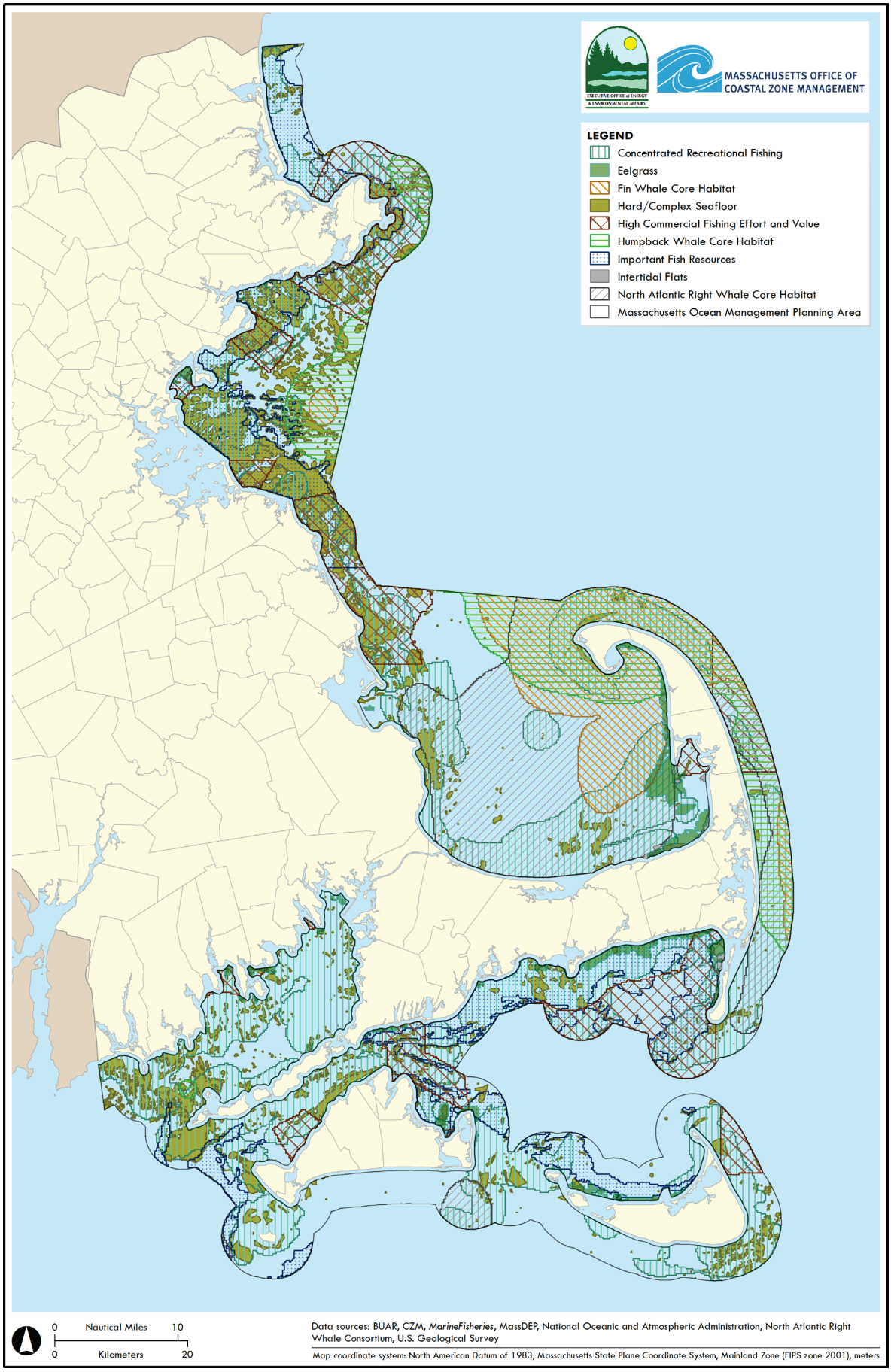

Figure 40. Special, sensitive, or unique resources and concentrations of water-dependent uses to be addressed for pipelines