Executive Office of Energy and Environmental Affairs
Massachusetts Office of Coastal Zone Management

RECREATIONAL AND CULTURAL SERVICES

Work Group Report

2014 Massachusetts Ocean Management Plan Update

March 31, 2014

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Workgroup Leads' Acknowledgement: *We would like to thank the entire workgroup for their expertise and for their time and effort resulted in the preparation of this document. We would like to give special thanks to the team of GIS specialists at CZM, Dan Sampson and Emily Huntley, for their exceptional work in collating and analyzing the data and producing the maps presented here.*

SECTION TWO: INTRODUCTION

Based on the mandate of the Oceans Act of 2008, a comprehensive ocean plan was developed for Massachusetts waters and promulgated in December 2009. The foundation of the ocean plan was the identification of management areas within state waters with specific siting and performance standards established to protect existing natural resources as well as commercial and recreational uses. Twelve habitat types were designated as Special, Sensitive, or Unique (SSU) natural resources, while four human uses were designated as areas of concentrated water-dependent use. Spatial analyses of the best data available at that time resulted in the development of maps for the 2009 Plan.

The Oceans Act requires that the ocean plan and Baseline Assessment be reviewed at least once every five years. Six technical work groups were convened to review and update the data and maps in the current plan. The Recreational and Cultural Services (RCS) Work Group met in June to initiate discussions on the current representation of recreational and cultural resources and uses in the plan. The work group included experts in various recreational and cultural/archaeological fields (see Section One).

The work group discussions focused on:

1. *Revising the current representation of recreational and cultural services in the 2009 Plan.*
2. *Identifying new data to add to and/or change the representation of these services.*
3. *Describing noteworthy trends in the status or condition of recreational services and cultural resources in the Plan and Baseline Assessment.*
4. *Describing new science that advances the characterization of the planning area and its resources and uses.*
5. *Developing recommendations for priority research and data acquisition for the next five years.*

Cultural and recreational services discussed by the work group are outlined in Table 1. This table also includes how each topic under recreational and cultural services is addressed and/or depicted in the current plan.

SECTION THREE: DATA RESOURCES AND RECOMMENDATIONS

The RCS Work Group discussions and consultation with additional experts, as needed, resulted in a list of recommendations. These recommendations are based on a thorough review of the current plan and the baseline assessment, assessment of additional data to inform the plan, and a gap analysis to identify research and data to inform future plans. The recommendations are divided into two categories: short-term actions using available (and updated) data to update the plan for the current revision process; long-term actions refer to activities that require resources for further analyses and data mining of existing data, and for research purposes.

Table 1: Recreational use and cultural resource topics discussed by the RCS work group.

Topic		Data/info in the 2009 plan
Recreational		
Boating	Ancillary (ramps, marinas, mooring fields, boat races, etc)	Baseline Assessment (Chapter 6)
	Spatial navigational patterns (addressed by the Navigation and Transportation Work Group)	Areas of existing water-dependent uses: concentrated recreational boating activity (Volume 1 Figure 2-17)
Fishing	Addressed by the Fisheries Work Group	Areas of existing water-dependent uses: concentrated recreational fishing (Volume 1 Figure 2-15)
Marine beaches		Not addressed
Diving		Volume 2 Figure 6.4.
Wildlife viewing	Includes marine mammals, bird viewing, etc.	Not addressed
Public access infrastructure		Not addressed
Land use and scenic landscape		Visual assessment developed maps in Volume 1 Figures Appendix 3-19, 3-20, 3-21
Cultural		
Archaeological resources and cultural landscape	Includes submerged, paleocultural landscape and ancient Native American cultural resources, contact and post-contact period shipwrecks, and coastal infrastructure	Archaeological and Cultural Sites (Volume 2 Chapter 5) addresses: ancient Native American sites, and Shipwrecks and other historical resources Maps: submerged wrecks, National Register of Historic Places and open space combined with land use and land cover (see above)
Tribal engagement		Tribal government engagement: Mashpee Wampanoag Tribe, and the Wampanoag Tribe of Gay Head (Aquinnah)

The Work Group suggested that the importance of these data in providing information for ocean planning, resource protection, and community wellbeing makes these activities ideal candidates for future research but depend on support by the state. Information related to human uses serves to inform various aspects of ocean planning, from use in compatibility analysis to determination of appropriate mitigation measures associated with a specific project.

RECREATIONAL

The RCS Work Group discussed the existing uses depicted in the 2009 ocean plan and the Baseline Assessment. Most recreational uses take place outside the planning boundary, which starts approximately 1,800 feet from Mean High Water (MHW) and excludes most harbors and embayments. However, nearshore and coastal activities often have direct and indirect impacts on resources and activities within the planning area. Conversely certain uses and activities in the planning area may affect or are dependent on nearshore and coastal resources and uses. Chapter 6 of the Baseline Assessment includes a comprehensive description of recreational uses in Massachusetts state waters. This Chapter will be revised as part of the Baseline Assessment review to include changes and trends over the last five years.

Recreational boating

In addressing recreational boating, the RCS Work Group discussed ancillary services related to this activity while navigation and spatial patterns were addressed by the Transportation/Navigation Work Group. The 2009 ocean plan includes a map depicting areas of concentrated recreational boating (Volume 1. Figure 2-17). This map was developed from a survey of expert recreational boaters conducted by the Massachusetts Marine Trades Association (MMTA) using NOAA charts to mark boat routes, recreational boating areas, and sail boat race areas (Volume 2. Figure 6.3). Recognizing the need to have better data depicting recreational boating patterns, the 2009 ocean plan prioritized the need to develop new data on traffic patterns and associated intensity of use. In response, two recreational boating surveys were conducted by SeaPlan (formerly Massachusetts Ocean Partnership) in 2010 and 2012 to gather statistically robust data on traffic patterns, use hotspots, and economic impacts. In addition, MMTA repeated its 2008 survey in June 2013 to provide additional expert knowledge on this use. Following discussion of the findings of the Transportation/Navigation work group with the RCS work group leads, the Transportation/Navigation work group will include recommendations on updating the areas of concentrated water-dependent use: recreational boating map in their report. For details on findings, analyses and recommendations please refer to the Transportation/Navigation Work Group report.

Data and information on recreational vessels registered in Massachusetts, and on ancillary structures including public and private ramps, marinas and mooring fields, were included in the Baseline Assessment. Updated data identified by RCS Work Group members are compiled to update the Baseline Assessment and a map showing the locations of these structures is included in this report

(Figure 1). Sources of these data include Department of Fish and Game, the Department of Conservation and Recreation, MMTA, MA Office of Coastal Zone Management and groups or NGOs such as the Surfrider Foundation.

Diving

Recreational diving (SCUBA) is mainly associated with shipwrecks, and recreational extraction of lobster and scallops. In addition to its importance as a recreational activity, diving has also been instrumental in providing information on submerged wrecks and other historic artifacts, fish censuses and invasive species monitoring. The Baseline Assessment includes background information on diving which takes place mainly in water depths ranging from 3 to 40 m. The Baseline Assessment includes a map (Volume 2. Fig. 6.4) provided by the Board of Underwater Archeological Resources (BUAR) indicating popular dives sites listed by recreational and commercial groups. BUAR maintains a list of 40 recreational diving sites (commonly referred to as Exempted Sites) which are member sites of the National System of Marine Protected Areas. These sites are held in trust by the Commonwealth for continued public access; major disruption of these sites is strictly prohibited by BUAR. Unfortunately, a comprehensive database of all diving locations does not exist, except for these 40 sites. The Work Group recommends compiling data to develop a comprehensive database of recreational diving sites in Massachusetts state waters. In the short term, the Work Group suggests that the Exempted Sites should be considered as a recreational use (Figure 2).

Recreational fishing

Recreational fishing activity in the planning area was discussed by the Fisheries Work Group. The 2009 ocean plan includes a map of areas of concentrated water-dependent use: recreational fishing in the planning area (Volume 1. Figure 2-15). In the absence of spatial data on recreational fishing patterns that could be used in the ocean plan, a rapid assessment of about 17 expert recreational fishermen was conducted by MA Division of Marine Fisheries (DMF) in 2009 to identify areas important for recreational fishing. These areas were classified as areas of high concentration of recreational fishing.

For revision of the map showing areas of concentrated water-dependent use: recreational fishing in the 2009 ocean plan, the Fisheries Work Group looked at available data (data from the Marine Recreational Information Program (March to June 2013), data on recreational fishing from the 2012 recreational boating survey conducted by SeaPlan) and recommended that DMF repeats the expert survey in fall 2013 using a larger pool of participants. Details of the 2013 survey, data analysis, and recommendations for updates to the map of areas of concentrated water-dependent use: recreational fishing, as well as long-term work are provided in the Fisheries Work Group report.

Public access infrastructure

Various infrastructures have been built to facilitate access to public beaches and shores. The RCS Work Group identified the most relevant structures associated with recreational uses and pertaining

to ocean planning including ramps, quays, and piers. The public right of access is inherently part of the ocean planning effort and therefore part of the discussions. Data on location of quays and piers are compiled by the Massachusetts Department of Environment Protection (DEP) as part of the Chapter 91 licensing process however the data are not at this time available in a comprehensive dataset that is usable for the plan revision. However, information is available to update the Baseline Assessment. A longer-term priority recommended by the Work Group is to work with DEP to identify a means of developing a database for piers and similar infrastructure.

Marine beaches

Although a popular recreational area for many users, marine beaches in Massachusetts are located outside of the planning area. The RCS Work Group believes data and information on the location of these beaches is important and recommends that these data be incorporated in the revised ocean plan. A major management aspect of ocean planning is the extraction of sediment for beach nourishment, specifically for public beaches subjected to significant erosion as a result of storm events. With an increase in the incidence of such events, perceived sea level rise, and other climate change related impacts, sediment extraction has become a priority and one of the main management aspects under discussion for the revision of the plan. Information on the location of marine beaches is therefore important given this is a factor for consideration when selecting borrow sites. Details on how data on location of public and semi-public marine beaches may be incorporated and used in the revised ocean plan will be discussed later in conjunction with other management decisions. Figure 3 shows the extent of marine public beaches with tidal frontage in Massachusetts.

Wildlife viewing

Wildlife viewing forms a significant component of the coastal and marine tourism and recreation industry in Massachusetts. The Baseline Assessment provides a comprehensive description on whale watching and birding as the most popular wildlife viewing activities. Efforts are underway to update information on whale watching activities and possibly develop a map with spatial information on whale watching hotpots. This information will be used to update the Baseline Assessment. The 2012 Recreational Boating survey conducted by SeaPlan identified the activities conducted by recreational boaters. Wildlife viewing was one of the categories and some data on popular hotspots for this activity were gathered. SeaPlan made these data available to CZM and a preliminary map was produced (Figure 4). It is important to note that this map is still a work in progress as further data may be included to characterize this activity within the planning area.

Hunting

Hunting was addressed briefly in the Baseline Assessment. Hunting is regulated by the MA Division of Fish and Wildlife. In addition, the planning area is adjacent to the Coastal Waterfowl Hunting Zone defined by the Migratory Game Bird Regulations. Waterfowl are protected by Migratory Bird Treaty Act of 1918 and all bag limits are set by the U.S. Fish and Wildlife Service.

Hunting for sea ducks (including Long-tailed Ducks, mergansers, scoters, and eiders) and Atlantic Brant takes place both from land and boat between November 1 and February 15. Several other duck, goose and other avian species are hunted along the coast, in the planning area, and on and near the islands within the planning area including Nomans Land Island. Data on hunting as a recreational activity are reported in the National Survey of Fishing, Hunting, and Wildlife-Associated Recreation conducted by the U.S. Fish and Wildlife every five years (latest published 2011). The survey provides information on the intensity of the recreational activity as well as economic valuation and impacts but does not include data from which information on hunting within the planning area can be obtained. The RCS Work Group is exploring the best way of using relevant data and information to update and expand on the information in the current Baseline Assessment.

Scenic/Visual

The 2009 Plan took a hard look at the visual aspect of the planning area recognizing the importance of this information in relation to wind energy development at that time. Although no data on visual impacts of such installations were included, potential commercial areas were screened using a 1-mile buffer from populated areas in response to the Oceans Act mandate to consider "proximity to the shoreline".

Land cover was used to depict the general pattern of development on land within a project's viewshed. A map of land cover was developed using NOAA Coastal Change Analysis Program (C-CAP) data, the Cape Cod National Seashore data layer, and the National Wildlife Refuge dataset (Volume 1, Figure Appendix 3-21). Two additional pieces of information on this map included sites on the National Register of Historic Places, last updated in 2007, and public open spaces. This map provides a first attempt at a basic visual assessment. The RCS Work Group recommends that updating this map (Figures 5 and 6) and/or incorporating data from MA Department of Conservation and Recreation's (DCR) scenic landscape inventory available on MassGIS (Figure 7) may be a useful piece of information in the plan revision process. However, at this time the RCS Work Group recommends that the map may not need to be incorporated into the ocean plan itself. One possible use would be in combination with information on the layout of a proposed project. If the need to consider visual aspects becomes important in the future as part of an ocean planning related issue, the RCS Work Group recommends that a comprehensive study may be conducted at that time.

Gaming boats

There are currently three gambling boats in Massachusetts. Atlantic Casino Cruises operates out of Gloucester and runs daily from Rowe Square in Gloucester's Inner Harbor. Aquasino and S.S. Horizon's Edge Casino Cruises operate out of Lynn. These data will be used to update the relevant section in the Baseline Assessment.

RCS Work Group recommendations for the 2014 ocean update

Short-term actions:

- Boating: revise and update data on boat access sites (MA Office of Fishing and Boat Access), marinas (CZM), and mooring fields. All these data are available in MORIS and MassGIS.
- Diving: work with the Massachusetts diving association to update existing map that will be more representative of this activity in the planning area; use locations of the Exempted Sites to develop a recreational use map.
- Marine beaches: revise and update data on public marine beaches. Data are available in MORIS and MassGIS.
- Scenic/visual: revise and update existing maps of land use/land cover and national historic sites; consider what other data may be important including protected and recreational open space layers (MORIS) and NOAA C-CAP land cover change maps (NOAA). Use to develop a map but include in the Baseline Assessment rather than the ocean plan itself.
- Wildlife viewing: revise and update information of whale watching from the whale watch industry and Stellwagen Bank NMS

Long-term actions:

- Diving: Develop a comprehensive database of diving locations and examine the best spatial representation of the most popular diving sites.
- Public access infrastructure: work with DEP to develop an inventory of small docks and piers that will be useful for ocean planning.

CULTURAL

The RCS Work Group discussed the three main elements to the cultural aspect of ocean planning: archaeological resources, heritage infrastructure and tribal engagement. Chapter 5 of the Baseline Assessment provides an overview of these elements and stresses the importance of giving due consideration to the submerged maritime legacy within Massachusetts waters. This chapter will be revised to incorporate any updates since 2008. No SSU or concentrated areas of water-dependent use maps for cultural resources are included in the 2009 ocean plan.

Archaeological resources

Archaeological resources include ancient Native American and historical resources. Most notably among these resources are shipwrecks. The location of submerged shipwrecks and related artifacts is an important piece of information. There is currently no comprehensive or complete database of these resources. The mapped information in the Baseline Assessment (Volume 2 Figure 5.1) is

incomplete and not an accurate representation of this resource. It is comprised chiefly of modern shipwrecks considered potential hazards to navigation and lack precision for location; there is a need to groundtruth the data. Given the potential impacts on these fragile non-renewable by human activities (vandalism and looting), archaeological site locations, for the most part the location of submerged shipwrecks and other artifacts are not public records under state law and, thus, not usually divulged or publicized. In addition, the information available at the state level needs extensive work to identify the exact location of each shipwreck, and many need ground-truthing. Further discussion among some work group members is currently underway on options to best incorporate the data once the exact locations are available.

While reliable locations with sufficient precision are not readily available for most historic period marine casualties (shipwrecks), most descriptions provide locale or community for location of loss. To overcome this lack of precision for historic shipwreck site locations, David Robinson (University of Rhode Island) in 2006 developed a proto-type sensitivity map utilizing the frequency of reported vessel casualties by the nearest coastal municipality between 1614 and 1978. The RCS work group recommended that an updated version of this map would serve to provide a less temporally biased depiction of the approximate location of submerged shipwreck than in the 2009 plan, and would provide a more reliable depiction of the occurrence probability within the planning area. A sensitivity map is shown in Figure 8.

In order to identify the location of ancient Native American archaeological sites associated with early coastal and maritime adaptation and occupation that could now be submerged and/or possibly buried by ocean sediments, attempts have been made to reconstruct the post glacial coastal landscape, paleo-landscape, that once existed offshore prior to modern sea level.

A proto-type paleo-landscape interpretive map was developed by the U.S. Geological Survey (USGS) for a portion of the planning area. Through the CZM-USGS Seafloor Mapping Cooperative, USGS collected and interpreted bathymetry and backscatter data in Buzzards Bay and Vineyard Sound. However, USGS noted that further data collection (including ground-truthing via sediment cores) and analyses of the USGS seafloor mapping data in Buzzards Bay and Vineyard Sound is needed to develop a reliable post-glacial landscape(s) to model and ultimately identify potential locations of ancient Native American sites. These data may be useful in identifying the locations of submerged paleo-cultural landscapes as well as for shipwrecks and other historical resources. Such a submerged paleo-landscape project is currently being conducted by the University of Rhode Island (David Robinson and John King) for the Bureau of Environmental Management (BOEM) in the RI-MA Wind Energy Area. Additionally, BOEM conducted a pilot study in the Massachusetts Wind Energy Area south of Martha's Vineyard. This information would be a vital piece in the identification of potential corridors for transmission cables and pipelines.

RCS Work Group recommendations for the 2014 ocean update

Short-term actions:

- Replace submerged shipwreck map with a sensitivity map of density of reported vessel casualties
- Explore access to proprietary data sets of submerged wrecks, etc. and identify resources needed to obtain the data. The work group has identified a possible data source and is currently working on identifying resource needs and availabilities.

Long-term actions:

- Revise and update the state inventory into a geo-referenced database of submerged wrecks (including ground-truthing)
- Develop paleolandscape sensitivity map and predictive model of ancient Native American land use. This would require additional cores and data analyses to supplement existing USGS data. Development of a reliable model also requires active collaboration with tribes.

Tribal engagement

Although the Tribal Historic Preservation Offices (THPOs) of the two federally-recognized coastal tribes in Massachusetts (Wampanoag Tribe of Gay Head [Aquinnah] and the Mashpee Wampanoag Tribe) were invited to join the RCS Work Group, no formal responses were received. In addition, neither the Massachusetts Historical Commission nor the Commission on Indian Affairs responded to the invitation. The Work Group expressed concern especially in view of existing executive orders (Massachusetts EO 126) requiring these groups to be involved in cooperation and consultation. This issue was discussed exhaustively and a number of recommendations and next steps were discussed on how best to engage the tribal community as well as how to bridge the gap in the data. There is a need for a mechanism between the state and tribes to allow for conversation that is in addition to and helps inform the formal "consultation" process.

RCS Work Group recommendations for the 2014 ocean update

Short-term actions:

- Continue working to (re-)engage the state and federally recognized tribes
- Develop a set of recommendations on state-to-tribal engagement (Appendix 1).

Heritage infrastructure

The RCS Work Group discussed the results of climate change models which indicate that impacts to shoreline may drastically affect coastal cultural resources. In face of a threat from sea level rise, the RCS Work Group recommended the need for further discussions on types of resources at risk, their locations, and what the anticipated impacts may be. Further discussion on the needs and capabilities to assess these resources and address anticipated impacts are needed.

RCS Work Group recommendations for the 2014 ocean update

Short-term actions:

- Re-engage the Massachusetts Historical Commission as a key partner.

Long-term actions:

- Assess USGS and NOAA climate change data showing short-term and long-term impacts on sites/regions, and the anticipated strength of the impact.
- Identification of historic properties and explore the feasibility of an anticipated impact assessment.

SECTION FOUR: MAP PRODUCTS

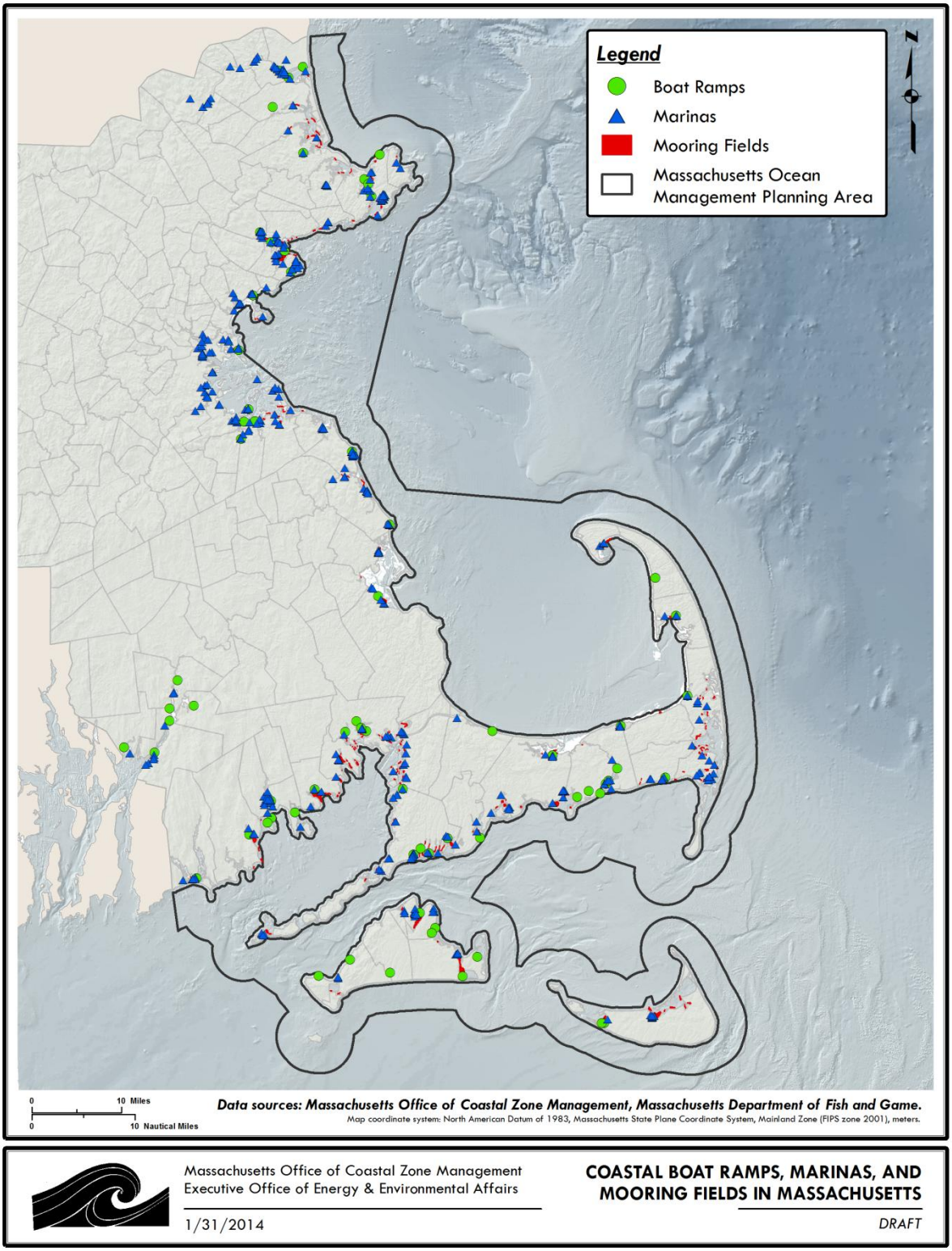

Figure 1. Coastal public boat ramps, marinas, and mooring fields

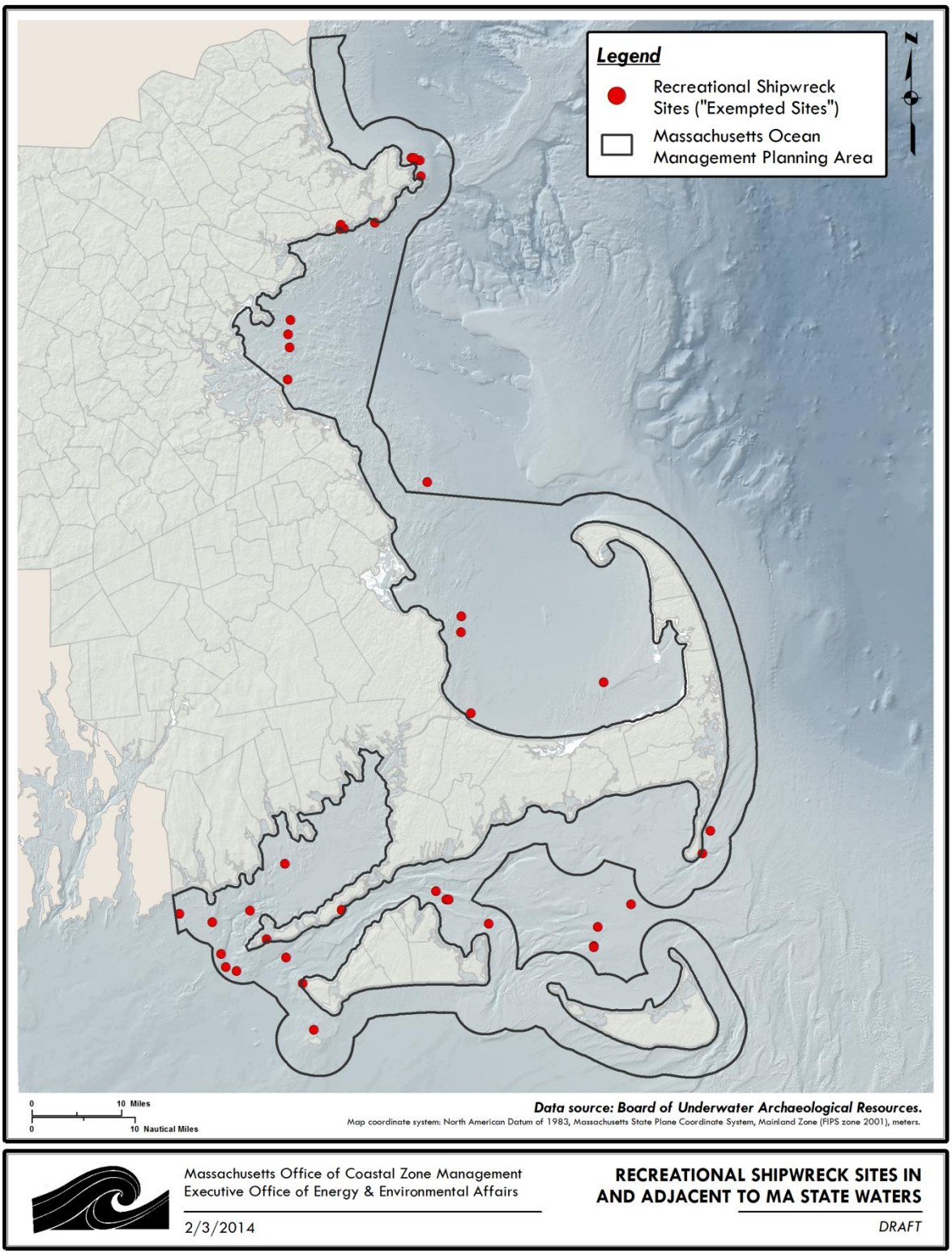

Figure 2. Exempted Sites/recreational shipwreck sites

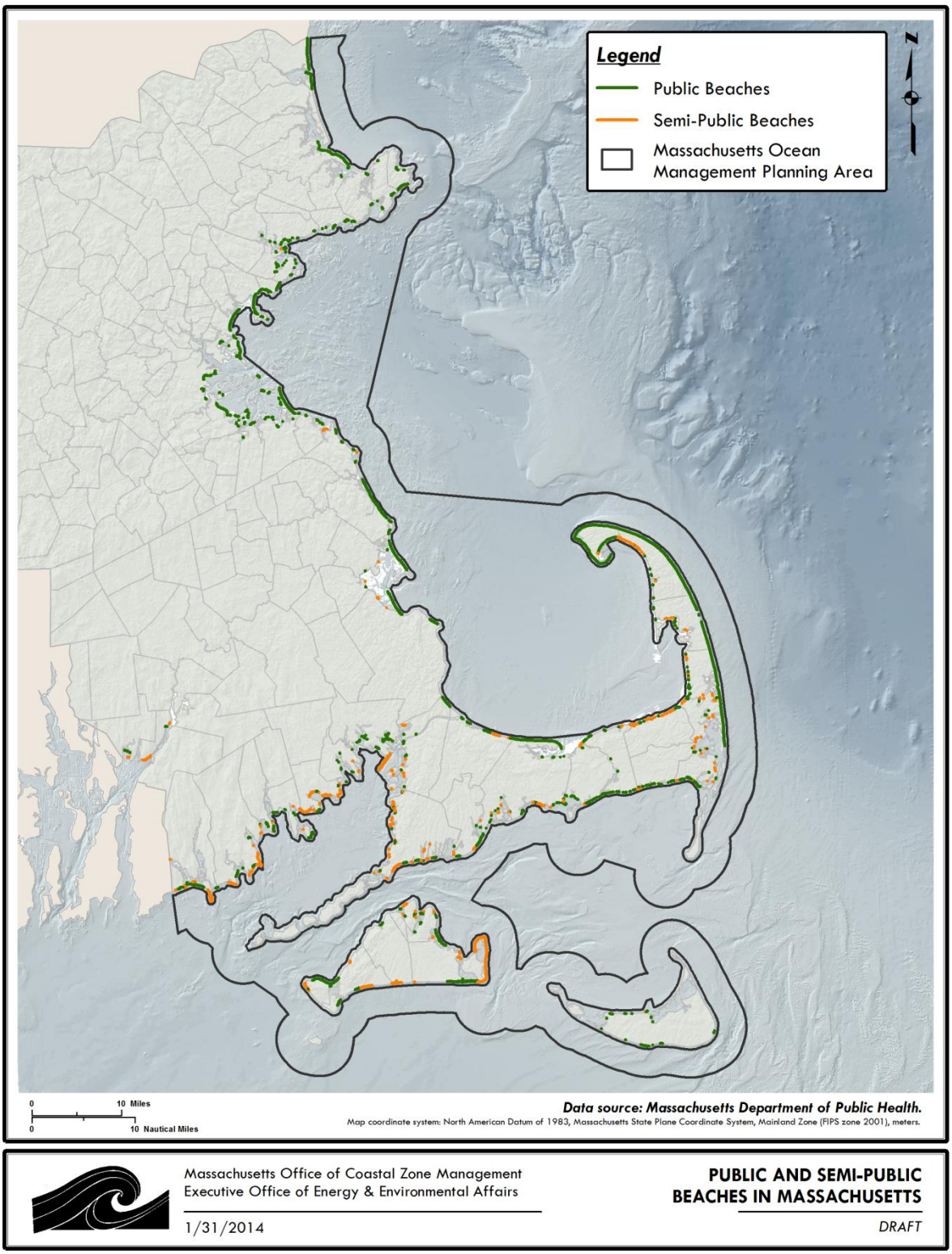

Figure 3. Marine public beaches

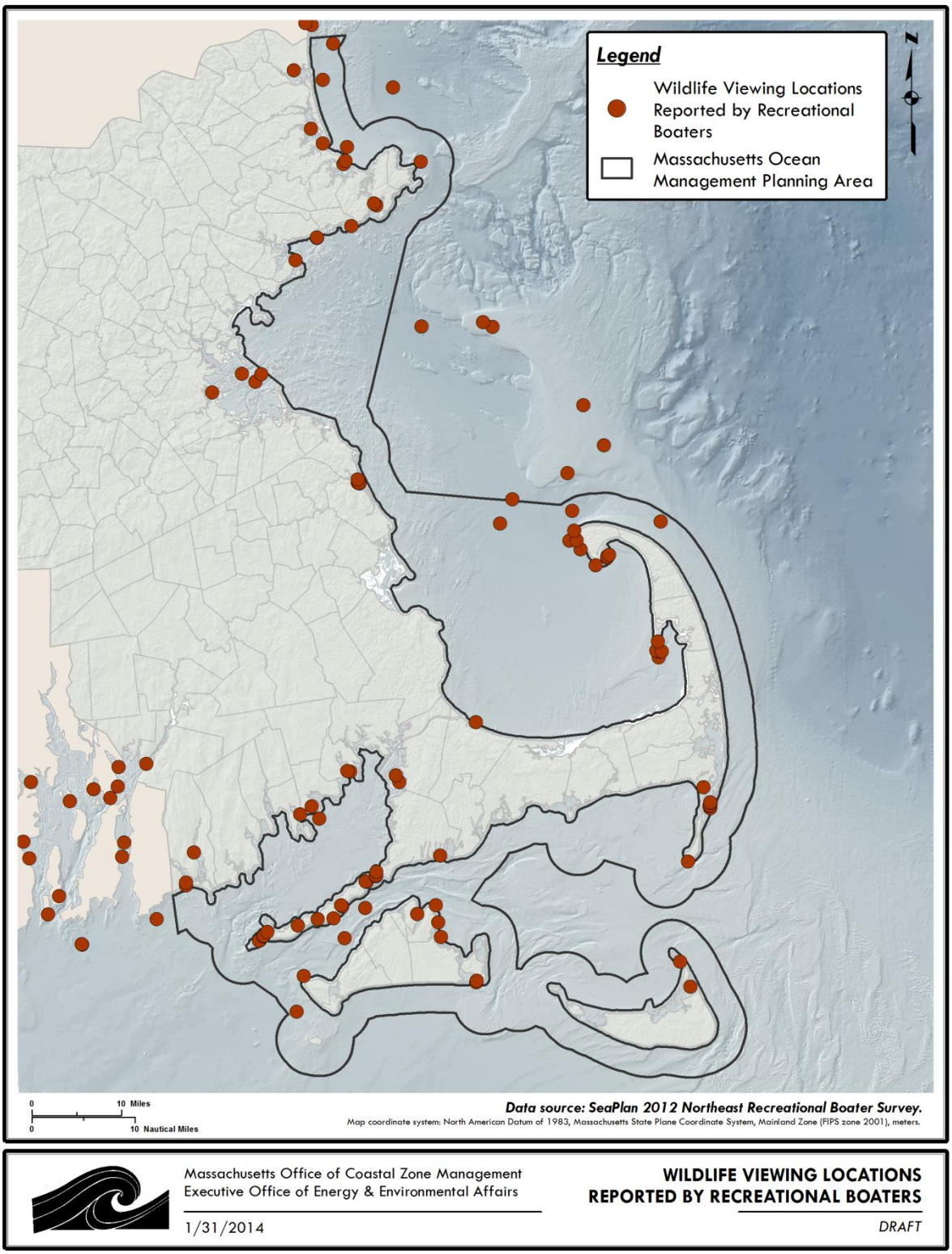

Figure 4. Wildlife viewing locations reported by recreational boaters in 2012

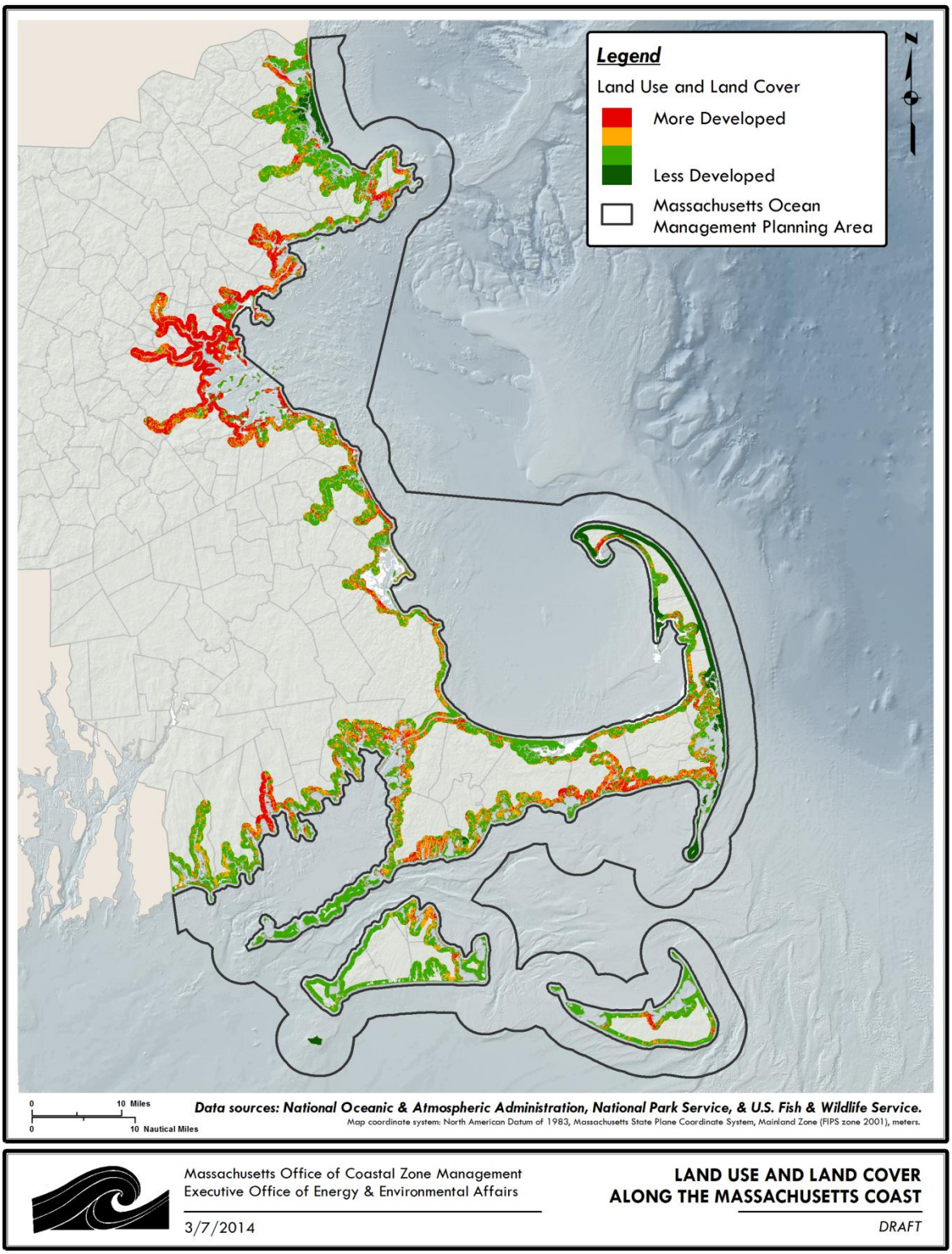

Figure 5. Land use and land cover along the Massachusetts coast

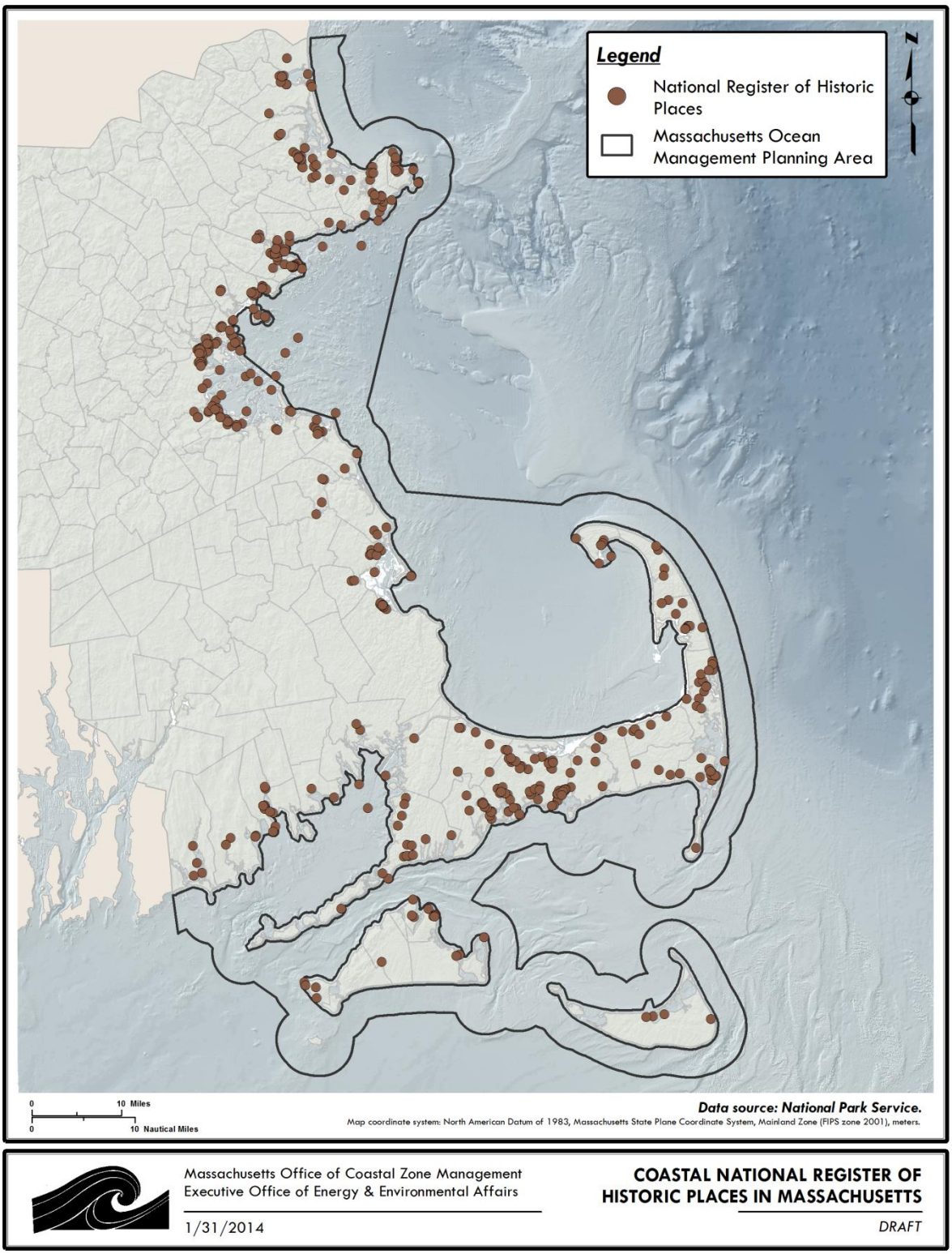

Figure 6. National Register of Historic Places in coastal Massachusetts

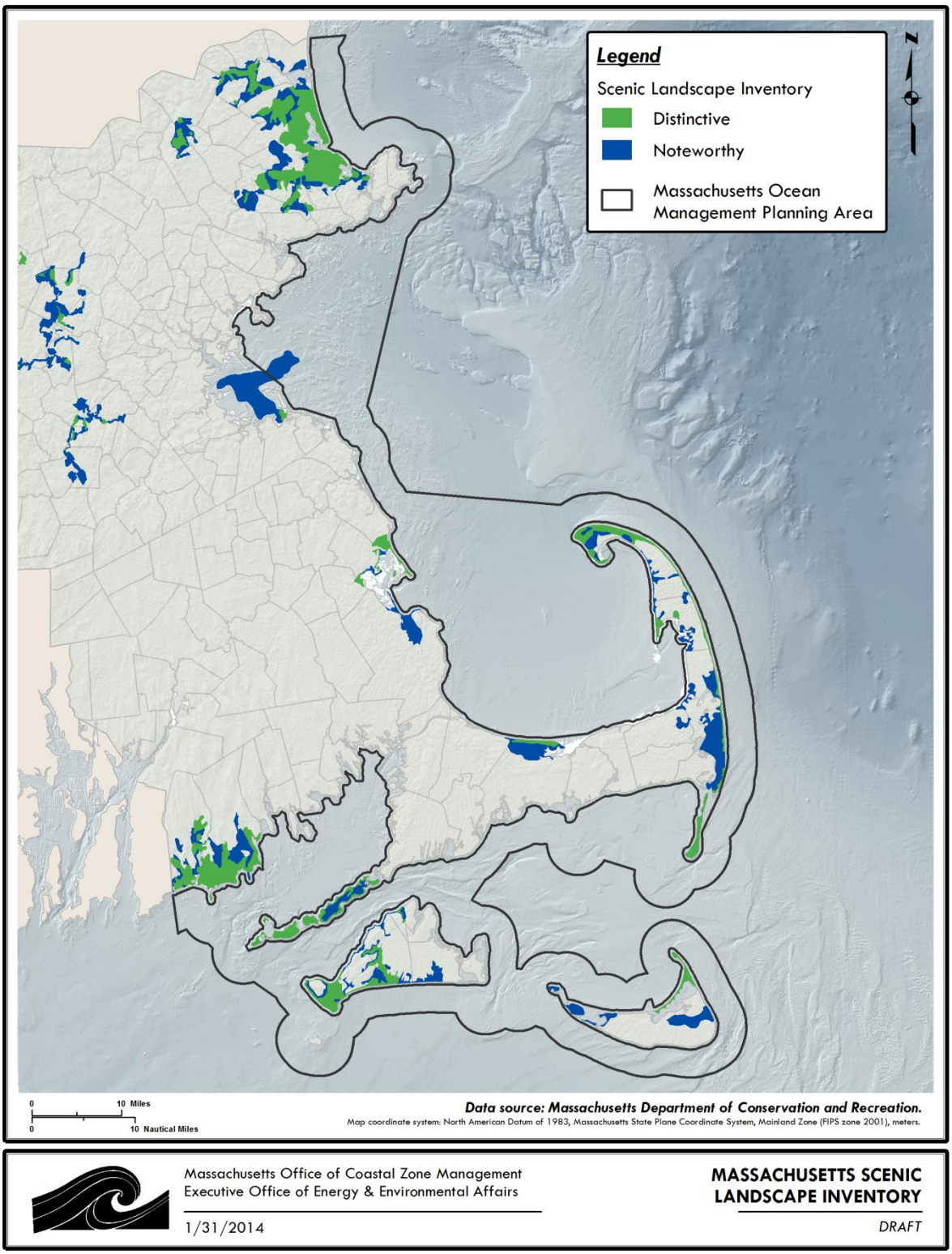

Figure 7. Scenic Landscape Inventory

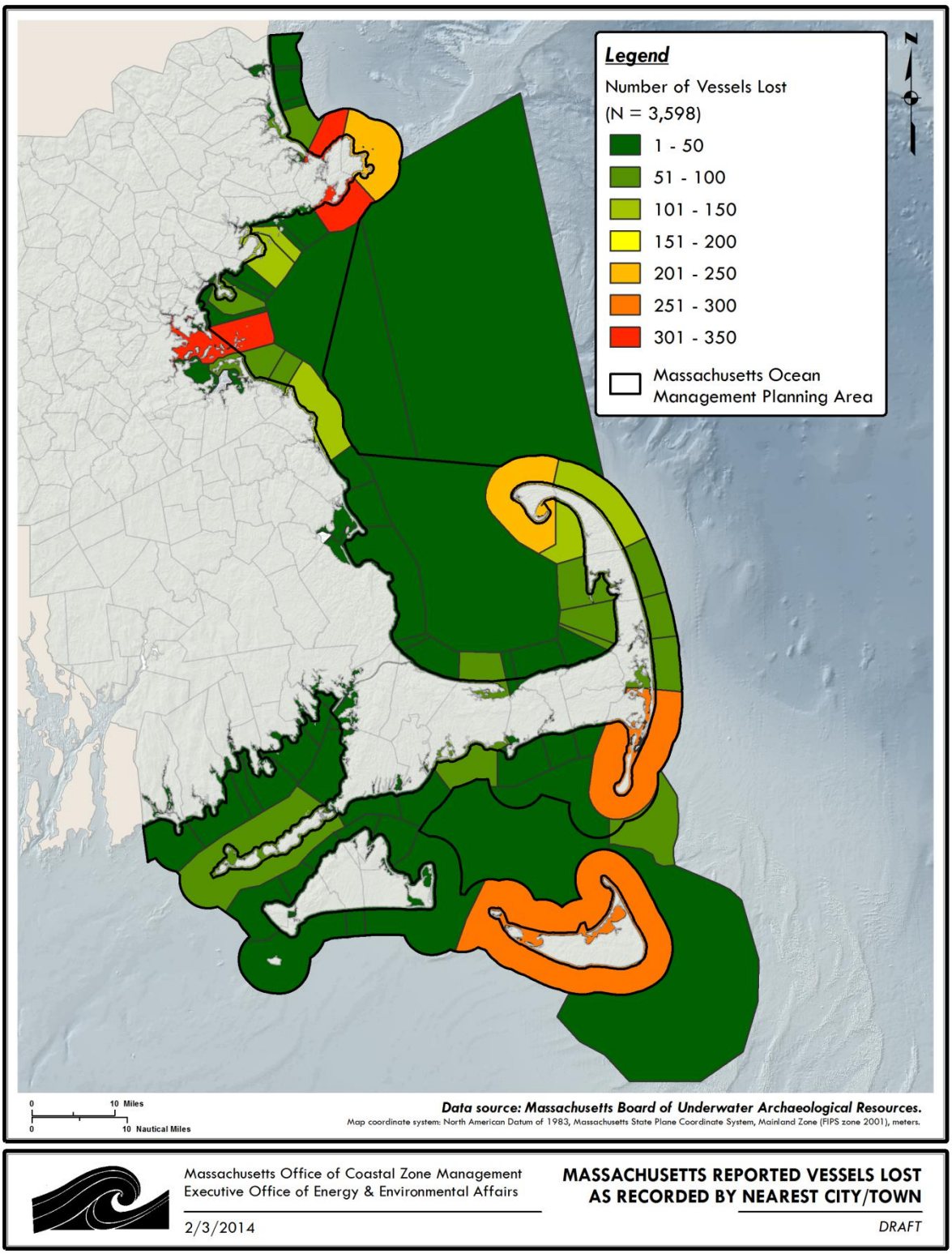

Figure 8. Reported vessels lost by town (1614 to present)

SECTION FIVE: TABLES COMPARING DATA SOURCES AND ANALYSES FOR THE 2009 PLAN TO THE PROPOSED 2014 PLAN

Table 2. Mapping of coastal public boat ramps, marinas, and mooring fields. Comparison of 2009 Ocean Plan to Proposed 2014 Ocean Plan.

	2009 Ocean Plan	Proposal for 2014 Ocean Plan
Data Source	Not applicable.	*Public boat ramps:* Created by the Office of Fishing and Boating Access (OFBA) within the Massachusetts Department of Fish and Game (DFG). The principal source for this layer was *Public Access to the Waters of Massachusetts*, published by the OFBA. Additional sites were digitized from U.S. Geological Survey topographic quadrangles. The data were last updated in August 2013. *Marinas:* Created by CZM. The data were last updated in 2007. *Mooring fields:* Created by CZM. The data were last updated in 2007.
Data Description	Not applicable.	*Public boat ramps:* These data indicate the locations of public boat and canoe launch sites for marine coastal waters in Massachusetts. These data will be used in the Baseline Assessment Five-Year Review. *Marinas:* This dataset includes sites of marinas, yacht clubs, and boat yards along the Massachusetts coast. The data were compiled from public lists, databases, and visual inspection of ortho-imagery. Data are represented as points with associated attribute data. Marina types were subdivided into marinas, yacht clubs, boat yards, municipal facilities, and unknown. All the mapped marinas have tidal frontage. These data will be used in the Baseline Assessment Five-Year Review. *Mooring fields:* These data show the approximate location of large mooring fields on the coast of Massachusetts. Large mooring fields are defined as a contiguous cluster of ten or more moorings. These data do not show exact mooring field boundaries but instead give a general idea of where large aggregations of boats are moored. These data will be used in the Baseline Assessment Five-Year Review.

	2009 Ocean Plan	Proposal for 2014 Ocean Plan
Data Extent	Not applicable.	*Public boat ramps:* Inland and adjacent to the ocean planning area. *Marinas and mooring fields:* Adjacent to the ocean planning area.
Data Adjustment and Pre-processing	Not applicable.	*Public boat ramps:* CZM removed ramps that were inland and/or pertaining to fresh water. *Marinas and mooring fields*: None.
Data Analysis	Not applicable.	None.
Data Classification	Not applicable.	Not applicable. The data were not classified.
Selection of Water-Dependent Use Area	Not applicable.	Not applicable. These data are not mapped as water-dependent use areas.

Table 3. Mapping of dive sites/recreational shipwreck sites. Comparison of 2009 Ocean Plan to Proposed 2014 Ocean Plan.

	2009 Ocean Plan	Proposal for 2014 Ocean Plan
Data Source	Dive sites were compiled by the Massachusetts Office of Coastal Zone Management using data from the Massachusetts Board of Underwater Archaeological Resources (BUAR) and web searches of popular diving locations listed by recreational and commercial groups. The data were last updated on July 2, 2007.	These data were mapped using the BUAR recreational shipwreck sites designated as "exempted sites."
Data Description	These data show popular dive sites for recreational SCUBA divers including reefs, wrecks, jetties, and breakwaters off the coast of Massachusetts.	These data show the 40 recreational shipwreck sites designated as "exempted sites" (these are member sites of the National Oceanic and Atmospheric Administration/U.S. Department of the Interior National System of Marine Protected Areas).
Data Extent	In and adjacent to Massachusetts state waters.	In and adjacent to Massachusetts state waters.
Data Adjustment and Pre-processing	None.	None.
Data Analysis	None.	None.
Data Classification	Not applicable. The data were not classified.	Not applicable. The data were not classified.
Selection of Water-Dependent Use Area	Not applicable. These data are not mapped as water-dependent use areas.	Not applicable. These data are not mapped as water-dependent use areas.

Table 4. Mapping of Marine Public Beaches. Comparison of 2009 Ocean Plan to Proposed 2014 Ocean Plan.

	2009 Ocean Plan	Proposal for 2014 Ocean Plan
Data Source	Not applicable.	These data were created by the Massachusetts Department of Public Health (MDPH), Center for Environmental Health (CEH), Environmental Toxicology Program (ETP). The data were last updated in January 2005.
Data Description	Not applicable.	This dataset shows the linear extents of public and semi-public beaches in Massachusetts' oceanfront communities. The locations of the beaches were collected in 2003. These data will be used in the Baseline Assessment Five-Year Review.
Data Extent	Not applicable.	Adjacent to the ocean planning area.
Data Adjustment and Pre-processing	Not applicable.	None.
Data Analysis	Not applicable.	None.
Data Classification	Not applicable.	Not applicable. The data were not classified.
Selection of Water-Dependent Use Area	Not applicable.	Not applicable. These data are not mapped as water-dependent use areas.

Table 5. Mapping of wildlife viewing. Comparison of 2009 Ocean Plan to Proposed 2014 Ocean Plan.

	2009 Ocean Plan	Proposal for 2014 Ocean Plan
Data Source	Not applicable.	These data are from the 2012 Northeast Recreational Boater Survey conducted by SeaPlan and partners.
Data Description	Not applicable.	This dataset shows wildlife viewing locations reported by recreational boaters in the 2012 Northeast Recreational Boater Survey.
Data Extent	Not applicable.	North Atlantic from New York to Maine.
Data Adjustment and Pre-processing	Not applicable.	None.
Data Analysis	Not applicable.	None.
Data Classification	Not applicable.	Not applicable. The data were not classified.
Selection of Water-Dependent Use Area	Not applicable.	Not applicable. These data are not mapped as water-dependent use areas.

Table 6. Mapped scenic/visual resources. Comparison of 2009 Ocean Plan to Proposed 2014 Ocean Plan.

	2009 Ocean Plan	Proposal for 2014 Ocean Plan
Data Source	*Land use/land cover:* National Oceanic and Atmospheric Administration's (NOAA) 2006 Coastal Change Analysis Program (C-CAP) land cover data (published in 2007), National Park Service's (NPS) Cape Cod National Seashore administrative boundary (last updated on August 3, 2009), and U.S. Fish and Wildlife Service's (USFWS) National Wildlife Refuges datasets (Mashpee last updated in 2004, Monomoy in 2009, Nantucket in 2004, Nomans Land Island in 2001, Parker River in 2005, and Thacher Island in 2008). *National Register of Historic Places:* NPS. The data were last updated in 2007. *Scenic Landscape Inventory:* Not applicable.	*Land use/land cover:* NOAA's 2010 C-CAP land cover data (published in 2013), NPS's Cape Cod National Seashore administrative boundary (last updated on March 6, 2014), and the USFWS's National Wildlife Refuges simplified boundaries (last updated in February 2014). *National Register of Historic Places:* NPS. The data were last updated in 2007. *Scenic Landscape Inventory:* Massachusetts Department of Conservation and Recreation. The information was digitized from maps contained within the Landscape Inventory Project report (1982). The data were last updated in June 2012.

	2009 Ocean Plan	Proposal for 2014 Ocean Plan
ata Description	*Land use/land cover:* This dataset was created by combining reclassified NOAA 2006 C-CAP data, the NPS's Cape Cod National Seashore data layer, and the USFWS's National Wildlife Refuges datasets. *National Register of Historic Places:* This dataset illustrates sites on the National Register of Historic Places at which specific visual assessments might be required. The National Register is the official federal list of districts, sites, buildings, structures, and objects significant in American history, architecture, archeology, engineering, and culture. *Scenic Landscape Inventory:* Not applicable.	*Land use/land cover:* This dataset was created by combining reclassified NOAA 2010 C-CAP data, the NPS's Cape Cod National Seashore data layer, and the USFWS's National Wildlife Refuges dataset. *National Register of Historic Places:* The National Register of Historic Places is the official federal list of districts, sites, buildings, structures, and objects significant in American history, architecture, archeology, engineering, and culture. *Scenic Landscape Inventory:* This data layer may be used as a state-wide overview of scenic areas as identified in the Massachusetts Landscape Inventory Project, 1982. The data provide the distribution of scenic areas across the six physiographic regions of Massachusetts.
Data Extent	*Land use/land cover:* Massachusetts land within a half mile of the shoreline. *National Register of Historic Places:* Communities adjacent to the planning area. *Scenic Landscape Inventory:* Not applicable.	*Land use/land cover:* Massachusetts land within a half mile of the shoreline. *National Register of Historic Places:* Communities adjacent to the planning area. *Scenic Landscape Inventory:* Massachusetts.

Table 6. Continued.

	2009 Ocean Plan	Proposal for 2014 Ocean Plan
Data Adjustment and Pre-processing	*Land use/land cover:* None. *National Register of Historic Places:* Sites on the National Register of Historic Places located in communities in the Massachusetts coastal zone, excluding those adjacent to Mount Hope Bay, were extracted and mapped. *Scenic Landscape Inventory:* Not applicable.	*Land use/land cover:* None. *National Register of Historic Places:* Sites on the National Register of Historic Places located in communities in the Massachusetts coastal zone, excluding those adjacent to Mount Hope Bay, were extracted and mapped. *Scenic Landscape Inventory:* None.
Data Analysis	*Land use/land cover:* CZM grouped the 2006 C-CAP data into three classes (from more to less developed): high and medium intensity developed; low intensity developed, developed open space, cultivated land, and pasture/hay; and all other land use and land cover classes. The Cape Cod National Seashore and National Wildlife Refuges were overlaid on the reclassified C-CAP data as the least developed land cover class, and these four classes were displayed. The data were clipped to within a half mile of the coast. *National Register of Historic Places:* None. *Scenic Landscape Inventory:* Not applicable. The 2009 ocean plan used a 1-mile buffer along the Massachusetts coast as a proxy visual assessment.	*Land use/land cover:* CZM grouped the 2010 C-CAP data into three classes (from more to less developed): high and medium intensity developed; low intensity developed, open space developed, cultivated crops, and pasture/hay; and all other land use and land cover classes (grassland/herbaceous, deciduous forest, evergreen forest, mixed forest, scrub/shrub, palustrine forested wetland, palustrine scrub/shrub wetland, palustrine emergent wetland, estuarine forested wetland, estuarine scrub/shrub wetland, estuarine emergent wetland, unconsolidated shore, bare land, palustrine aquatic bed, and estuarine aquatic bed). The Cape Cod National Seashore and National Wildlife Refuges were overlaid on the reclassified C-CAP data as the least developed land cover class, and these four classes were displayed. The data were clipped to within a half mile of the coast. *National Register of Historic Places:* None. *Scenic Landscape Inventory:* None.

Table 6. Continued.

	2009 Ocean Plan	Proposal for 2014 Ocean Plan
Data Classification	*Land use/land cover:* See data analysis. *National Register of Historic Places:* Not applicable. The data were not classified. *Scenic Landscape Inventory:* Not applicable.	*Land use/land cover:* See data analysis. *National Register of Historic Places:* Not applicable. The data were not classified. *Scenic Landscape Inventory:* **Distinctive** - Areas of the highest visual quality. Typically consists of openness, low population density, high relative relief, historical structures and land uses, agriculture, surface water, significant vegetation, important geological features, and lack of contemporary development. **Noteworthy** - Areas of lesser, but nevertheless important, visual quality. Typically contains the same factors as Distinctive landscapes but in lesser amounts or in lower quality. Region specific descriptions can be found in the Massachusetts Landscape Inventory report. All remaining portions of Massachusetts are considered "Common."
Selection of Water-Dependent Use Area	Not applicable. These data are not mapped as water-dependent use areas. The data were depicted as follows: 1) relationship between distance and visibility (Vol. 1, Figure Appendix 3-19), 2) land use/land cover (Vol. 1, Figure Appendix 3-20), and 3) Natural Register of Historic Places and open spaces combined with land use and land cover (Vol. 1, Figure Appendix 3-21).	Not applicable. These data are not mapped as water-dependent use areas.

Table 7. Mapped submerged shipwrecks. Comparison of 2009 Ocean Plan to Proposed 2014 Ocean Plan.

	2009 Ocean Plan	Proposal for 2014 Ocean Plan
Data Source	Department of Commerce (DOC), National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), Office of Coast Survey (OCS), Hydrographic Survey Division (HSD)	Massachusetts Board of Underwater Archaeological Resources (BUAR)
Data Description	Office of Coast Survey's Automated Wreck and Obstruction Information System (AWOIS) catalogues reported wrecks and obstructions that are considered navigational hazards within U.S. coastal waters. The AWOIS database is updated prior to hydrographic surveys to identify potential features that require further study. AWOIS is not a comprehensive record of wrecks or obstructions in any particular area. Historical research is constantly being conducted to improve the quality of the file, but it will never completely address every known or reported wreck or obstruction.	BUAR maintains an inventory of known and reported vessel casualties (shipwrecks) within and/or near Massachusetts waters. These site files are a literature derived dataset which include primary and secondary archival accounts and lists, AWOIS, and survey derived information. It is constantly being updated. It contains over 3,500 potential sites.
Data Extent	In and adjacent to Massachusetts state waters.	In and adjacent to Massachusetts state waters
Data Adjustment and Pre-processing	None.	Assigned reported vessel casualties (shipwrecks) locale information to seaward municipal boundaries and/or adjacent geographic location.
Data Analysis	None.	Reported frequency of vessel casualties (shipwrecks) by municipal boundary or adjacent geographic location.
Data Classification	Not applicable. The data were not classified.	Sensitivity for vessel occurrence is based on assigned municipality or adjacent geographic location.
Selection of Water-Dependent Use Area	Not applicable. These data are not mapped as water-dependent use areas.	Not applicable. These data are not mapped as water-dependent use areas.

APPENDIX 1: DRAFT RECOMMENTATIONS FOR STATE-TRIBAL ENGAGEMENT

Principles for Consultation, Cooperation and Collaboration with Tribal/Indigenous Peoples[1]

Most tribes and indigenous groups have an inherent authority to designate areas of cultural importance to their people. These designations typically do not extend beyond their own members or the legally recognized geographic boundaries under tribal or indigenous authority. Heritage sites and areas designated and valued by native peoples are vital components of the rich maritime heritage of what is now the United States. Respecting the traditional authority and ability of native peoples to manage and maintain their cultural and natural heritage will serve to strengthen the Massachusetts Ocean Plan. The Massachusetts Ocean Plan is not intended to replace or supplant obligations mandated by federal law.

Government-to-government consultation process with federally recognized tribes

In a Presidential Memorandum regarding tribal consultation (November 5, 2009), President Obama re-affirmed Executive Order 13175[2], enacted by President Clinton (November 6, 2000), and directed that "executive departments and agencies (agencies) are charged with engaging in regular and meaningful consultation and collaboration with tribal officials in the development of Federal policies that have tribal implications, and are responsible for strengthening the government-to-government relationship between the United States and Indian Tribes."[3] Regular, meaningful consultation occurs when tribes and indigenous groups are consulted from the beginning of, and continuing throughout, any process or proposed policy that may affect their rights.

The Massachusetts Ocean Plan and activities undertaken in accordance with the plan occurring within any Indian Tribe's historic marine area could have broad implications that may include: treaty rights, fishing rights, subsistence rights and culturally important areas. Treaties with the U.S. government form a trustee relationship that, in addition to consultation requirements, requires federal agencies to uphold the rights of Indian Tribes and to assist in the maintenance of their treaty resources. Indian Tribes have legal authority and responsibility to protect their cultural and natural resources. Indian Tribes may have treaty rights that extend well into the ocean.

Traditional/historical custodians and authorities, including non-federally recognized tribes

Over the last two decades, a global movement has emerged that seeks recognition under international law for the human rights of indigenous peoples. The United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), adopted in March 2008, acknowledges the importance of collective rights for indigenous peoples to carry out their distinct ways of life. In an

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[1] Adapted from Marine Protected Areas Federal Advisory Committee. (2011). *Recommendations for Integrated Management Using a Cultural Landscape Approach in the National MPA System.* Retrieved from: http://www.mpa.gov/pdf/helpful-resources/mpafac_rec_cultural_landscape_12_11.pdf

[2] Executive Order 13175, 65 FR 67249 (November 6, 2000).

[3] Presidential Memorandum (November 5, 2009). Retrieved September 30, 2011 from: http://www.whitehouse.gov/the-press-office/memorandum-tribal-consultation-signed-president

announcement at the White House Tribal Nations Conference, December 16, 2010, the President stated that the United States would now support the UNDRIP; those provisions are non-binding.
The Commonwealth of Massachusetts has maintained a long-standing and special relationship with Native American Tribes. In 1976, Massachusetts Executive Order 126[4] (EO 126) affirms this relationship with the Massachusetts Commission on Indian Affairs, Tribal Councils and Inter-tribal organizations. EO 126 declares the state has not ceased to recognize the indigenous tribes or its treaties with them. It specifically orders state agencies to:

- deal directly with tribes on matters affecting the tribes.
- seek advice and cooperate with the Massachusetts Commission on Indian Affairs, tribal councils and inter-tribal organizations.
- include Native Americans on state boards and commissions.

In consideration of federal and state executive orders and UNDRIP, the Massachusetts Ocean Plan process should embraces the following Principles of State-Tribal Relations :

- Cooperation and collaboration
- Mutual understanding and respect
- Regular and early communication [consultation]
- Accountability in addressing issues of mutual concern
- Preservation of the state-tribal relationship [government-to-government]

Government managers and project proponents should acknowledge and respect the authority and rights of those peoples that occupied marine coastal areas before colonization, and recognize that indigenous peoples have a sacred connection to the land and waters. These principles for consultation, communication, cooperation and collaboration with tribal peoples are not intended to create, limit, waive, expand, or interpret existing laws or regulations.

[4] Massachusetts Executive Order 126, Michael S. Dukakis, Governor, July 8, 1976.