Massachusetts Ocean Plan

Western Dredging Association, Eastern Chapter AND North Atlantic Division and South Atlantic Division U.S. Army Corps of Engineers

October 14, 2009

Deerin Babb-Brott, Asst. Secretary for Oceans and Coastal Zone Management
Executive Office of Energy and Environmental Affairs

Oceans Act of 2008

- Confirms EEA Secretary as trustee of the Commonwealth's oceans
- Directs Secretary to establish an ocean management plan by December 31, 2009
- Creates two consultative bodies:
  - Ocean Advisory Commission
  - Ocean Science Advisory Council
- Excludes fisheries management
- Contains a set of directives: "oceans 15"

Six of the "oceans 15"

The plan shall:	
Governance	…set forth goals, siting priorities and standards for ensuring effective stewardship of its ocean waters held in trust for the benefit of the public
	…identify appropriate locations and performance standards for activities, uses and facilities allowed under the Ocean Sanctuaries Act
Human use (ecosystem services)	…reflect the importance of the waters to its citizens who derive livelihoods and recreational benefits from fishing
	…foster sustainable uses that capitalize on economic opportunity without significant detriment to the ecology or natural beauty of the ocean
Ecosystem components	…identify and protect special, sensitive or unique estuarine and marine life and habitats
	…value biodiversity and ecosystem health

15 requirements of the Act

GOALS		OUTCOMES
• Balance and protect the natural, social, cultural, historic, and economic interests of the marine ecosystem	→	• Integrated ocean management plan
• Recognize and protect biodiversity, ecosystem health, and the interdependence of ecosystems	STRATEGIES →	• Special, sensitive, unique resources identified and protected
• Support wise use of marine resources, including renewable energy, sustainable uses, and infrastructure	STRATEGIES →	• Areas for renewables and other uses identified with performance standards
• Incorporate new knowledge as the basis for management that adapts over time to address changing social, technological, and environmental conditions	→	• Blueprint for Plan 2.0: science, stakeholder, policy/management adaptive frameworks

Translating the Oceans Act into an ocean plan through spatial data

Oceans Act → Draft Plan

Goals and strategies → Compatibility assessment → Screening criteria → Plan development

Plan objectives

Decision-making guidance

Siting preferences

Functional compatibility analysis

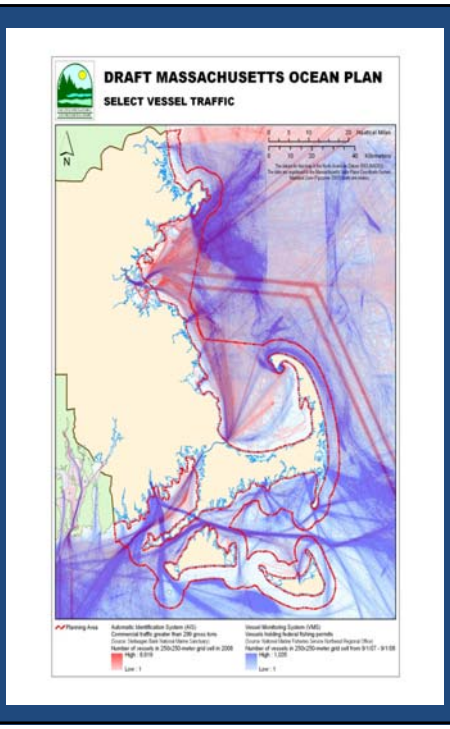
Policy decisions

Represent compatibility assessment with available spatially-explicit data

Develop plan based on synthesis of spatial and management elements

Connecting statutory mandate through goals, strategies to spatial information

Oceans Act requirement	Goal	Strategy	Data
Reflect the importance of the waters of the Commonwealth to its citizens who derive livelihoods and recreational benefits from fishing	Effective stewardship: Support wise use of marine resources, including renewable energy, sustainable uses, and infrastructure	Minimize conflicts with fishing by siting new development areas outside areas of: • Significant commercial fishing effort and value • Concentrated recreational fishing activity	• Commercial fishing: DMF catch reports, SAFIS data, NMFS vessel trip reports • Recreational fishing: DMF survey MMTA survey


DRAFT MASSACHUSETTS OCEAN PLAN
SELECT VESSEL TRAFFIC

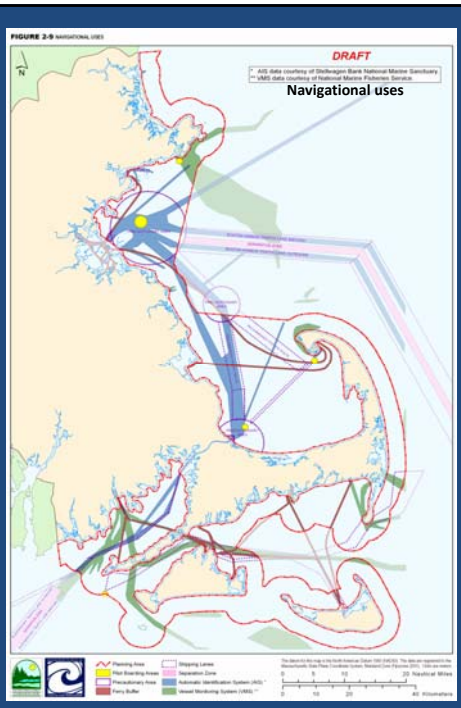
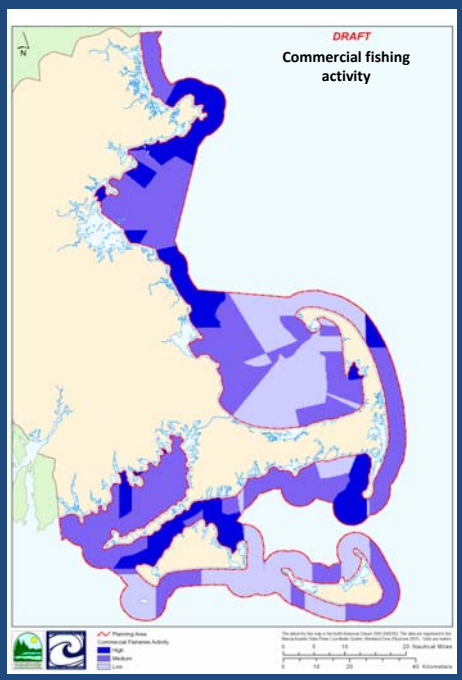


FIGURE 2-9
DRAFT
Navigational uses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Commercial fishing activity

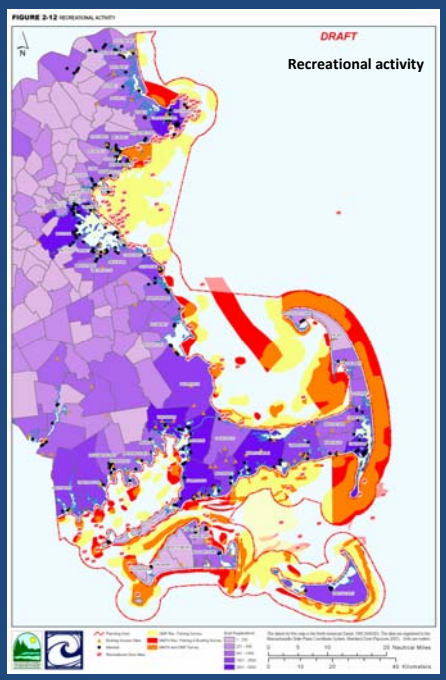
FIGURE 2-12
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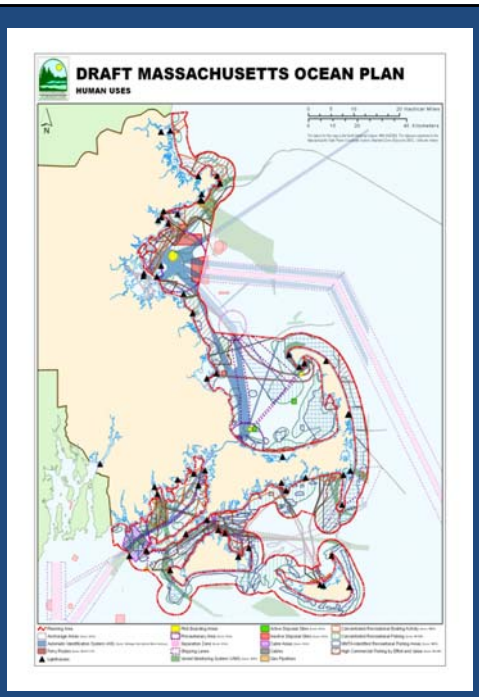
Recreational activity



Composite Human Uses

EVI

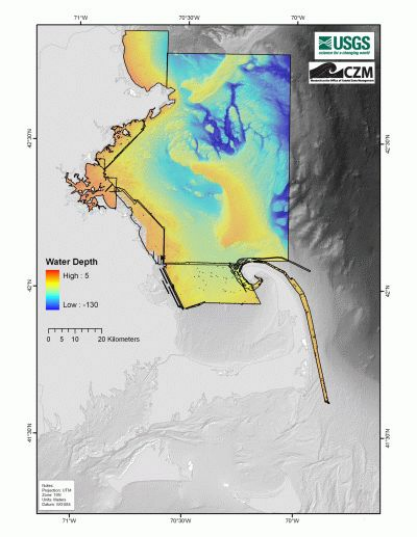
- Compile and analyze spatial data:
  - Marine mammals (4 species)
  - Birds (5 species)
  - Crustaceans (5 species)
  - Mollusks (8 species)
  - Fish (22 species)

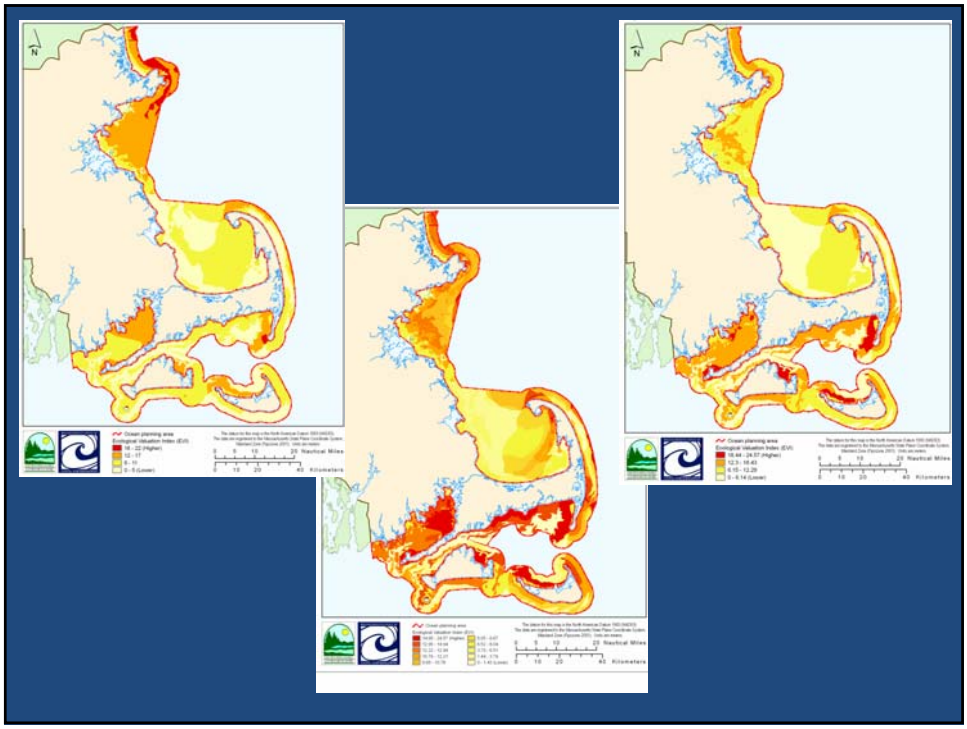
EVI

- Score individual datasets using a standard set of criteria:
  - Major contribution to fitness of population
    - For given species, its “habitat” provides important reproduction/survival benefit
    - I.e., spawning, nesting areas
  - Spatial rarity (10% of planning area)
  - Global and regional population importance (bpj)
- Combine individual dataset scores in each grid cell for composite value

EVI

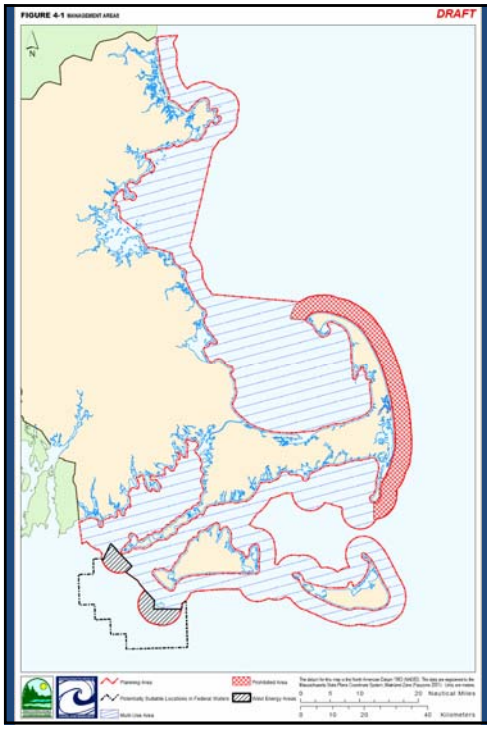
- Abiotic data
  - Seafloor mapping
  - Rugosity
  - Frontal probability
  - Shoals
  - Etc.





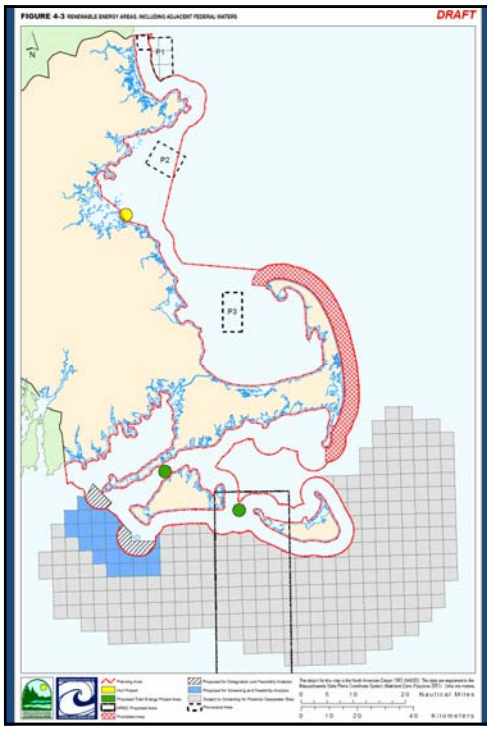
Management framework

- Prohibited: Fixed standard
  - Prohibited by law (CC OS)
  - Prohibited by plan (commercial-scale wind)
- Renewable Energy Area
  - Specifically designated for commercial wind energy facilities
- Multi-use
  - Uses, activities, facilities allowed by Ocean Sanctuaries Act
  - Managed based on siting and performance standards associated
  - Development directed away from important resources (SSUs) and concentrations of existing water-dependent uses



Management areas in draft ocean plan

- Planning Area
- Prohibited Area
- Potentially Suitable Locations in Federal Waters
- Wind Energy Areas
- Multi-Use Area



Renewable energy areas in draft ocean plan

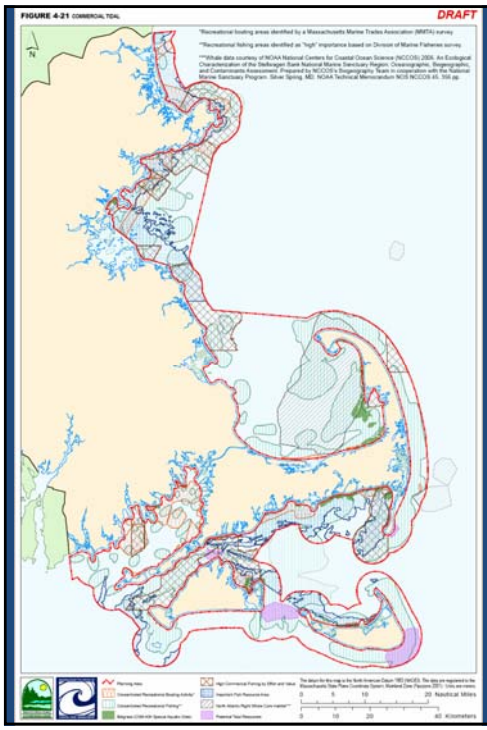
- Planning Area
- Hull Project
- Proposed Tidal Energy Project Area
- MREC Proposed Area
- Prohibited Area
- Proposed for Designation and Feasibility Analysis
- Proposed for Screening and Feasibility Analysis
- Subject to Screening for Potential Deepwater Sites
- Provisional Area

Siting and review of other UAFs

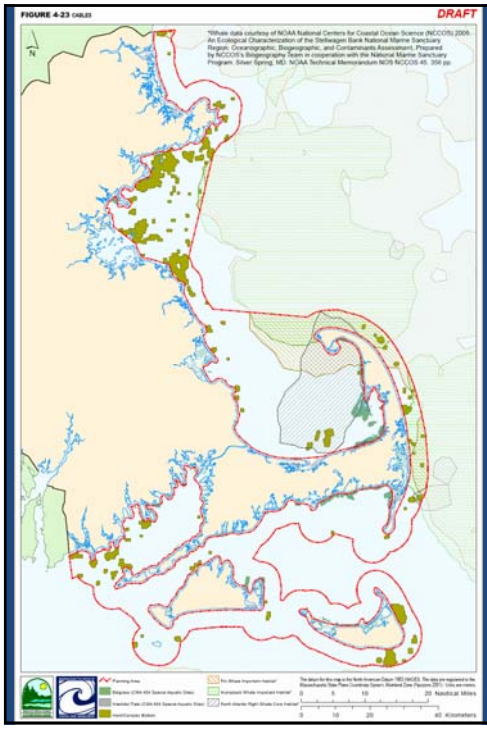
- Outside of Renewable Energy Area and Prohibited Area, remainder of uses, activities, and facilities (UAFs) allowed by Ocean Sanctuaries Act are directed away from high value resources and concentrations of existing water-dependent uses
- Review for new UAFs:
  - Primarily through MEPA, supported by agency authorizations
  - Avoid or demonstrate no less damaging practicable alternative

Project location within areas of special, sensitive or unique resources	Siting standard	Performance standard
• North Atlantic Right Whale core habitat area • Humpback and Fin Whale important habitat areas • Roseate Tern core habitat areas • Special concern (Arctic, Least, and Common) tern core habitat areas • Long-tailed Duck important habitat areas • Leach's Storm Petrel important nesting habitat areas • Colonial water birds important nesting habitat areas • Areas of hard/complex seafloor • Eelgrass • Intertidal flats • Important fish resource areas	Avoid, or demonstrate that there is no less damaging practicable alternative, or demonstrate that data does not accurately characterize resource or use	Meet all applicable permitting standards; minimum baseline standard is avoid, minimize, and mitigate impacts to the maximum extent feasible

Project location within areas of existing water-dependent uses	Siting standard	Performance standard
• Areas of high commercial fishing by effort and value • Areas of concentrated recreational fishing • Areas of concentrated commerce and commercial fishing traffic • Areas of concentrated recreational boating activity	Avoid, minimize, and mitigate impacts to the maximum extent feasible; use mapped areas to guide alternatives analysis and additional project-specific characterization of existing uses and potential impacts. Secretary may require higher siting standard, above, on project-specific review of potential significance of impacts to mapped commercial or recreational activity.	

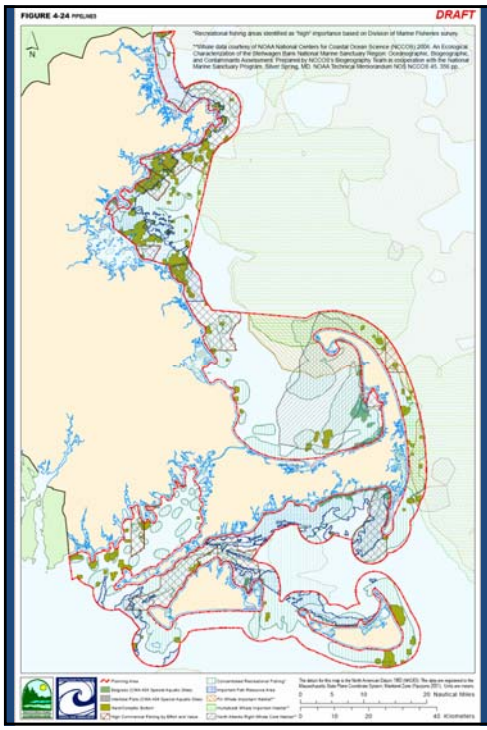


Resources and uses for siting/management: commercial tidal energy facilities



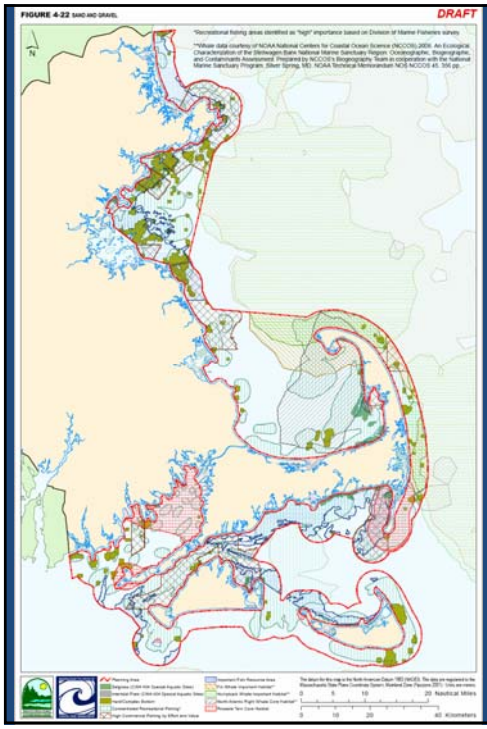
Resources and uses for siting & management: telecommunication & electric cables

- Planning Area
- Eelgrass (CWA 404 Special Aquatic Sites)
- Intertidal Flats (CWA 404 Special Aquatic Sites)
- Hard/Complex Bottom
- Fin Whale Important Habitat*
- Humpback Whale Important Habitat*
- North Atlantic Right Whale Core Habitat*



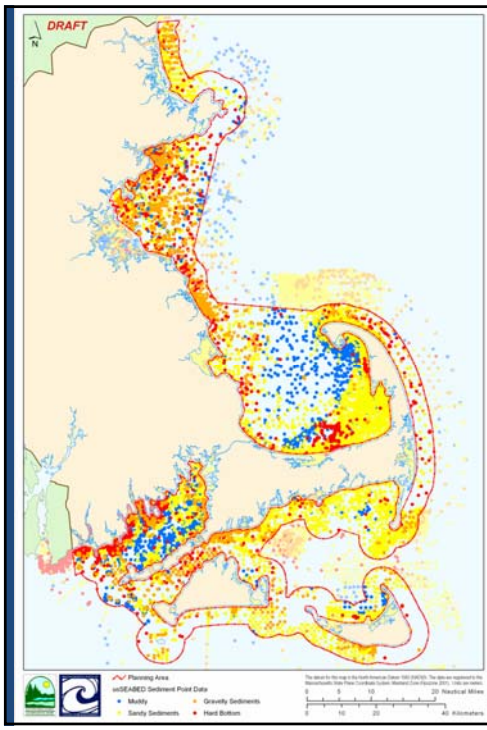
Resources and uses for siting & management: pipelines

- Planning Area
- Eelgrass (CWA 404 Special Aquatic Sites)
- Intertidal Flats (CWA 404 Special Aquatic Sites)
- Hard/Complex Bottom
- High Commercial Fishing by Effort and Value
- Concentrated Recreational Fishing*
- Important Fish Resource Area
- Fin Whale Important Habitat**
- Humpback Whale Important Habitat**
- North Atlantic Right Whale Core Habitat**



Resources and uses for siting/management: sand/gravel extraction

- Planning Area
- Eelgrass (CWA 404 Special Aquatic Sites)
- Intertidal Flats (CWA 404 Special Aquatic Sites)
- Hard/Complex Bottom
- Concentrated Recreational Fishing*
- High Commercial Fishing by Effort and Value
- Important Fish Resource Area
- Fin Whale Important Habitat**
- Humpback Whale Important Habitat**
- North Atlantic Right Whale Core Habitat**
- Roseate Tern Core Habitat



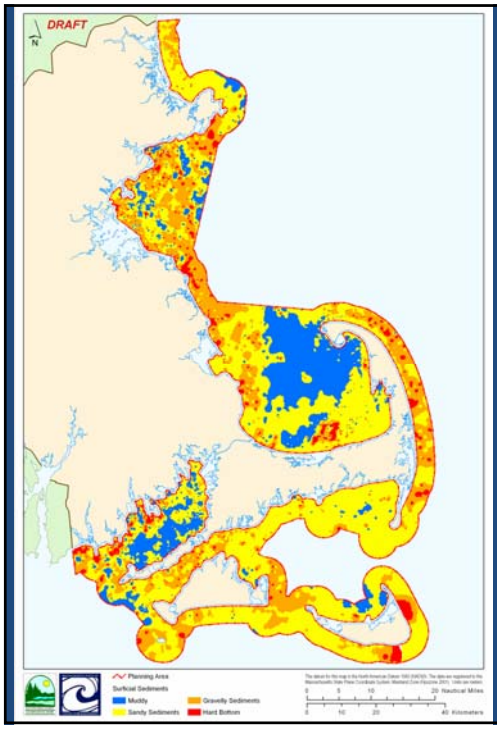
Sand/gravel extraction: sediment point data

- Source: USGS usSEABED sediment point data
- Collected using a variety of benthic sampling techniques
- State-wide coverage, but with varying degrees of point density
- Accuracy:
  - Areas of homogenous bottom sediment type, pretty accurate
  - Areas of heterogeneous bottom sediment type or rocky bottoms, not as

Planning Area

usSEABED Sediment Point Data

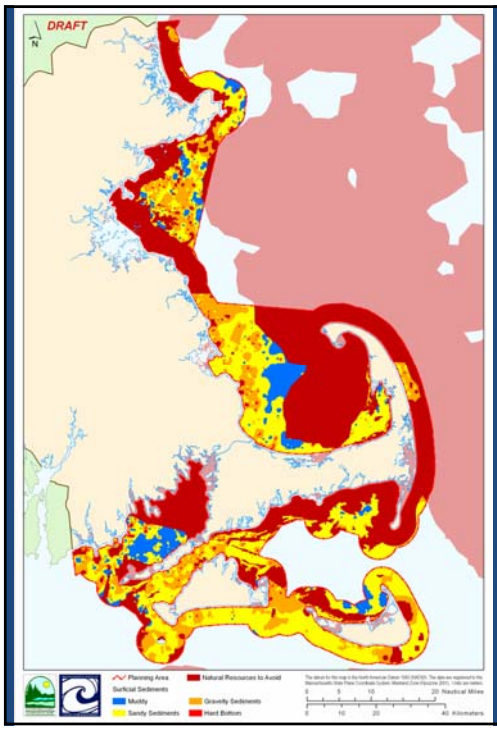
- Muddy
- Gravelly Sediments
- Sandy Sediments
- Hard Bottom



Sand/gravel extraction: sediment raster

- Sediment point data were spatially interpolated to create a surficial sediment raster
- Distribution of points not uniform, so some areas where interpolation occurs across far larger distances than others
- 4 categories:
  - Muddy
  - Sandy sediments
  - Gravelly sediments
  - Hard bottom

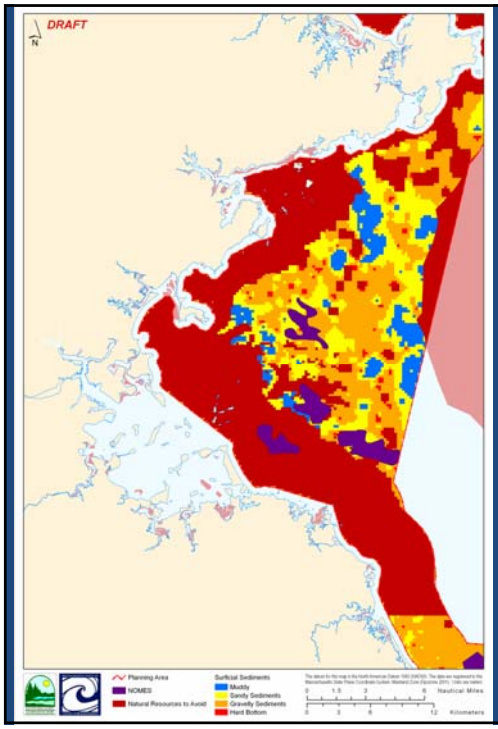
Planning Area
Surficial Sediments
Muddy | Gravelly Sediments
Sandy Sediments | Hard Bottom



Sand/gravel extraction: screening criteria

- Natural resources to avoid (shown in dark red):
  - North Atlantic Right Whale core habitat
  - Roseate Tern core habitat
  - Fin and humpback whale important habitat
  - Areas of hard/complex bottom
  - Eelgrass and intertidal flats
  - Important fish resource areas

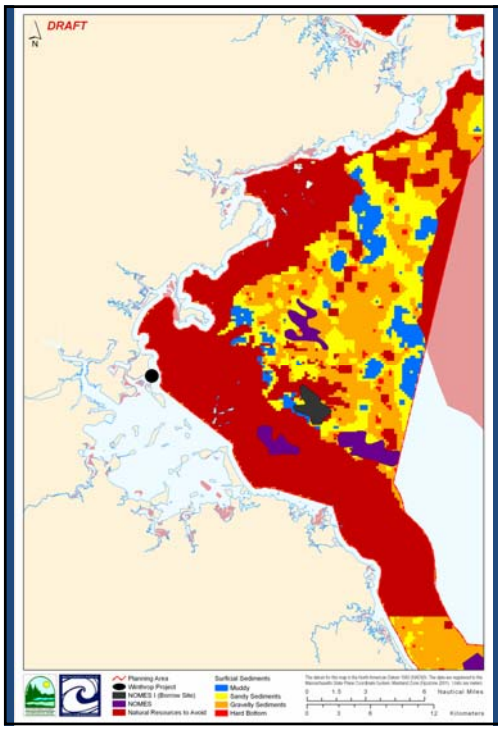
Planning Area | Natural Resources to Avoid
Surficial Sediments
Muddy | Gravelly Sediments
Sandy Sediments | Hard Bottom



Sand/gravel extraction: screening criteria applied

- Planning Area
- NOMES
- Natural Resources to Avoid

Surficial Sediments
- Muddy
- Sandy Sediments
- Gravelly Sediments
- Hard Bottom



Sand/gravel extraction: screening criteria applied

- Planning Area
- Winthrop Project
- NOMES I (Borrow Site)
- NOMES
- Natural Resources to Avoid

Surficial Sediments
- Muddy
- Sandy Sediments
- Gravelly Sediments
- Hard Bottom

For more information:

www.mass.gov/eea/mop

www.mass.gov/czm/oceanmanagement

www.massoceanpartnership.org