



Ocean Health Index for the US Northeast – Reporting region boundary options

What are reporting regions?

A reporting region is a spatial unit for which an Ocean Health Index (OHI) score will be calculated. The OHI framework reports a score in each reporting region for every OHI goal individually (e.g. biodiversity, food provision, clean waters), as well as a single composite OHI score for each region based on the combined average of all individual goal scores.

In determining reporting regions for a Northeast OHI, the team seeks to balance biophysical boundaries with management boundaries, and the scale of decision-making with the scale of data availability. The team has developed four draft maps of potential reporting regions as options for discussion at the September workshop.

The spatial boundaries drawn at this early stage of the OHI project will be used to calculate scores for the assessment. Additionally, scores can be aggregated or summarized from several regions for reporting purposes. Decisions around how these scores will be aggregated and reported can be made later in the OHI project timeline.

Earlier in the year we heard comments about these potential reporting regions at the May 2, 2017 Stakeholder forum in Portsmouth as well as the May 24 RPB meeting in Gloucester. You can revisit those discussions in the meeting summary notes which are located on the neoceanplanning.org website and are linked below:

- [May 2, 2017 Stakeholder Forum Summary – pg. 18](#)
- [May 24, 2017 RPB Meeting Summary – pg. 20](#)

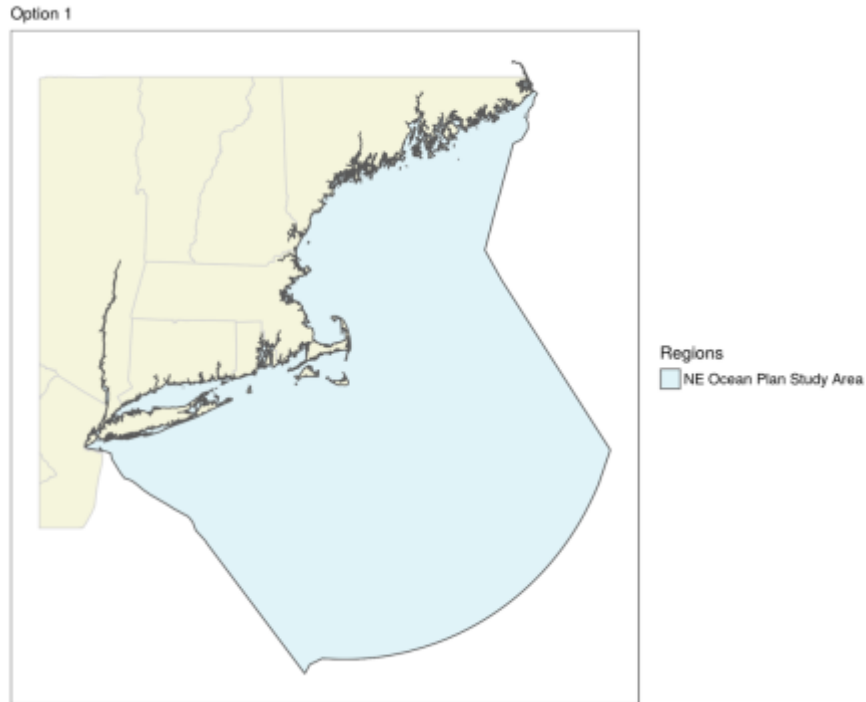
Key questions to consider when deciding how to define your reporting regions:

- Will the reporting regions be at the appropriate scale to be useful for management?
 - a. Does the scale of the assessment match the scale of decision-making?
 - b. Do the reporting regions have the right balance of biophysical and management boundaries?
- Are data available for all goals at the scales that we are using to assess ocean health?

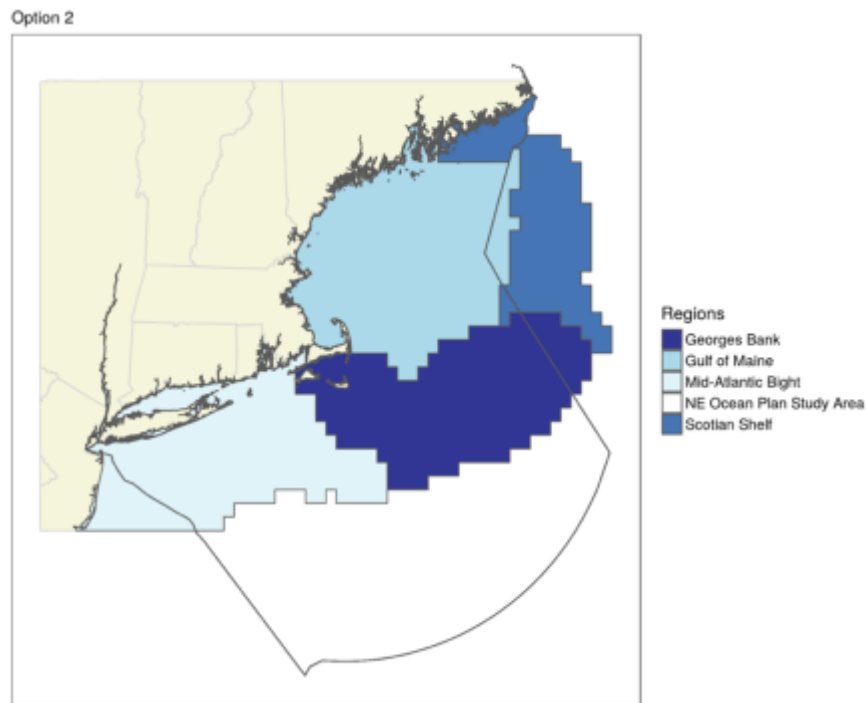


Note: Some participants have expressed interest in developing an OHI for state waters. The Northeast Ocean Plan provides context for decisions in the Northeast, and state waters are included in options 1 and 2 consistently with the Plan. Options 3 and 4 specifically separate out state waters.

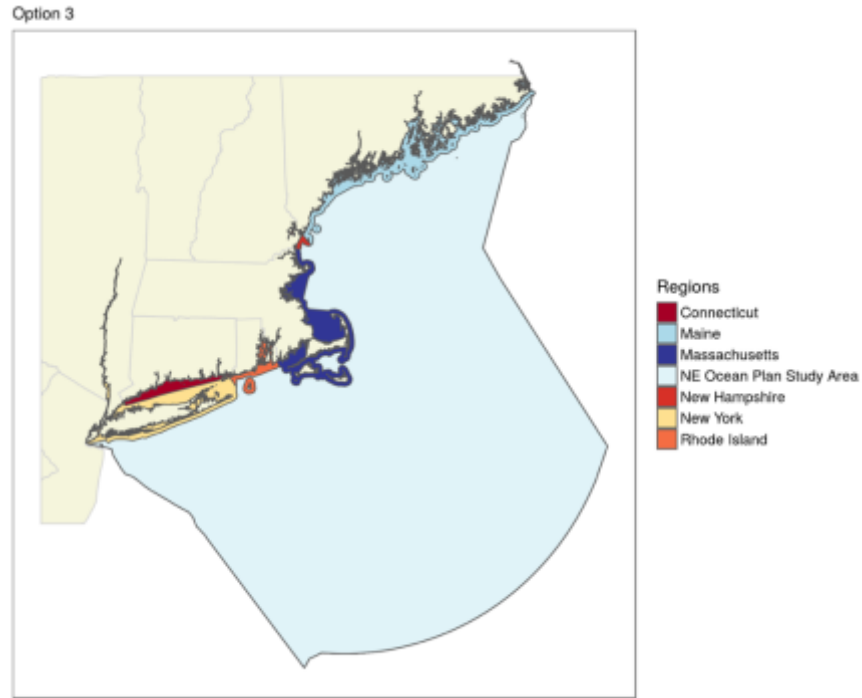
Option 1 - Scores calculated for whole Northeast Ocean Plan study area used for Plan data collection and stakeholder engagement



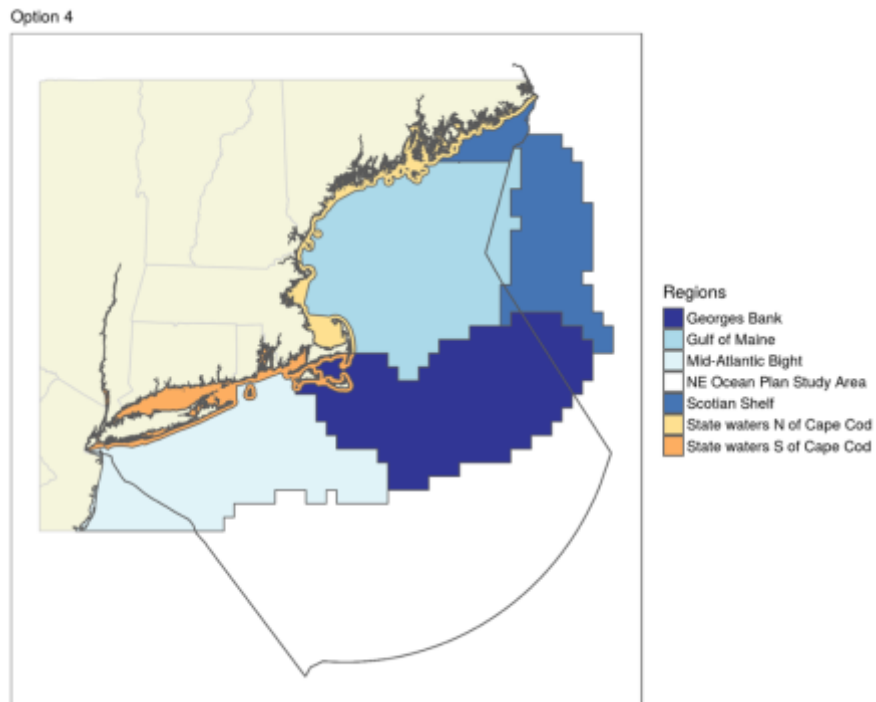
Option 2 - Scores calculated for Northeast Ocean Plan study area, and for each offshore NOAA-NMFS Ecological Production Unit (Note: The unlabeled offshore unit could also be assessed and additional area in the Gulf of Maine could be considered.)



Option 3 - Scores calculated for Northeast Ocean Plan study area, and for each individual state



Option 4 - Scores calculated for Northeast Ocean Plan study area, for each offshore NOAA-NMFS Ecological Production Unit, and for state waters north and south of Cape Cod (Note: The unlabeled offshore unit could also be assessed and additional area in the Gulf of Maine could be considered.)



Defining Ocean Health Index goals for the Northeast

In this document we provide an overview of how the Northeast Ocean Plan can be used to inform goal definitions for an Ocean Health Index assessment. Here we walk through how the OHI team has used the Ocean Plan Resources & Activities developed over the last few years by the RPB and engaged stakeholders as a list of priorities for the region that we then translate into draft OHI goal definitions.

First we briefly describe what OHI goals are and outline the priorities highlighted in each Resources & Activities chapter of the Ocean Plan (Table 1). We then show how the Ocean Health Index team would group these Resources & Activities into categories that can be assessed using the OHI Framework (Table 2). We then show the full crosswalk suggested by the OHI team to define OHI goals based on the priorities included in the Northeast Ocean Plan (Table 3). And finally, we briefly highlight some points that may require further discussion to make sure that the OHI is capturing all of the priorities that the RPB has highlighted throughout the development of the Northeast Ocean Plan.

Document Layout:

- a) What are OHI Goals?
- b) Northeast Ocean Plan priorities (Table 1)
- c) Translating Ocean Plan priorities into OHI goals (Table 2)
- d) Crosswalk: Ocean Plan Resources & Activities translated into potential OHI goals (Table 3)
- e) Discussion Points

a) What are OHI Goals?

Determining ocean health requires an approach that integrates social, economic, and environmental information. The Ocean Health Index does this by measuring progress towards widely held goals that represent key benefits and services provided by healthy marine ecosystems, such as seafood, tourism, recreation, and jobs. By analyzing these goals together, we obtain a comprehensive picture of the state of the ecosystem. As we begin our work in the Northeast, one of our first priorities is to define the goals that are most important to the people of the Northeast. Once these goals are established we can work to find ways to measure how well the ocean is providing these benefits and how close we are to meeting our targets.

b) Northeast Ocean Plan priorities

- Below is a list of the Ocean Plan Resources & Activities and the priorities that are highlighted in the plan (as identified by the OHI team)
 - *Note:* In developing this table the OHI team was cognizant of the fact that all chapters also call attention to the pressures that each activity has on other aspects of the plan, but those pressures are not explicitly included here and will be addressed later in the OHI Northeast project development
 - *Note:* Many priorities are highlighted multiple times throughout the plan, across activities, such as:
 - Cultural/Traditional/Native American connections to the marine environment
 - Economic importance of marine systems
 - Tourism and recreation
 - Importance of specific habitats and species in providing different services/functions

Ocean Plan Resources & Activities	Priorities Highlighted in the Plan							
Marine Life & Habitat	Habitats	Species	Biodiversity	Species richness	Ecosystem function	Culture	Livelihoods	Conservation Areas
Cultural Resources	Tourism and recreation	Seasonal employment	Working waterfronts	Maritime connection to sea	Coastal parks & reserves	Native Americans	Historic places	
Marine Transportation	Moving people and goods	Trade	National security	Jobs & revenue				
National Security	National security and military	Marine life & habitat pressures	Retaining Access					
Commercial & Rec Fishing	Economic importance	Cultural importance	Native American fisheries	Recreational fishing				
Recreation	Social importance	Economic importance	Access to the ocean	Park visitation	Designated conservation areas	Coastal parks & reserves	Spiritual enjoyment	
Energy & Infrastructure	Transportation & transmission of oil & gas	Offshore wind	Pilot hydrokinetic projects	Communication & electricity cables				
Aquaculture	Food	Jobs	Tribal importance for sustenance	Tribal importance of water quality				
Offshore Sand Resources	Addressing sea level rise	Addressing storm impacts	Offshore sand resources	Potential species & habitat impacts	*Note: Activity is not yet occurring			
Restoration	Estuaries	Restoring salt marsh tidal flow	Diadromous fish passage	Eelgrass	Oyster reefs	Clam flats	Native coastal vegetation	

c) Translating Ocean Plan priorities into OHI goals

- If we begin to look at the Ocean Plan Resources & Activities from an Ocean Health Index perspective where we focus on the benefits and services provided by a healthy ocean, some of these priorities can be grouped together to systematically capture the priorities the RPB has for healthy oceans
- Below is a suggestion of how we could capture all of these priorities from an OHI, service/benefit-first, perspective

OHI Goals	Definition - A healthy ocean provides:	Ocean Plan Resources & Activities
Biodiversity	A diversity of healthy marine species, habitats, and landscapes	Marine Life & Habitat
Sense of Place & Identity	A deep sense of identity and belonging provided through connections with our marine communities	Cultural Resources Commercial & Recreational Fishing Seafood Provision Marine Transportation Recreation Aquaculture Marine Life & Habitat Energy & Infrastructure
Coastal Livelihoods & Economies	High quantity and quality of ocean-dependent jobs and local revenue	Marine Transportation Commercial & Recreational Fishing Recreation Aquaculture National Security Energy & Infrastructure
Food Provision	Sustainably harvested seafood from wild-caught fisheries and mariculture	Commercial & Recreational Fishing Aquaculture
Tourism & Recreation	Opportunities for people to enjoy coastal areas through tourism and recreation	Recreation Cultural Resources Marine Transportation
Natural Products	Sustainably harvested ocean-derived living resources for purposes other than consumption	Energy & Infrastructure Offshore Sand Resources
Coastal Protection & Carbon Storage	Storage of carbon and protection of our coasts from storm damage by living natural habitats, such as seagrasses	Offshore Sand Resources Marine Life & Habitat Restoration
Local Fishing & Resource Access Opportunities	Opportunities for Native Americans and other local community members to access local natural resources	Cultural Resources Aquaculture Recreation Commercial & Recreational Fishing
Clean Waters	Coastal waters which are free of contaminants	Marine Life & Habitat Restoration

d) Crosswalk: Potential OHI goals and Ocean Plan Resources & Activities

OHI Goals	Definition - A healthy ocean provides:	Ocean Plan Resources & Activities	Priorities Highlighted in the Plan									
Biodiversity	A diversity of healthy marine species, habitats, and landscapes	Marine Life & Habitat	Habitats	Species	Biodiversity	Species richness	Ecosystem function					
Sense of Place & Identity	A deep sense of identity and belonging provided through connections with our marine communities	Cultural Resources Commercial & Recreational Fishing	Working waterfront	Maritime connection to the sea	Coastal parks & reserves	Native American fisheries	Historic places	Cultural importance of fishing	Recreational fishing	Designated protected areas	Access	
Coastal Livelihoods & Economies	High quantity and quality of ocean-dependent jobs and local revenue	Marine Transportation Commercial & Recreational Fishing Recreation Aquaculture National Security Energy & Infrastructure	Livelihoods	Jobs & revenue	Seasonal employment	Access						
Seafood Provision	Sustainably harvested seafood from wild-caught fisheries and mariculture	Commercial & Recreational Fishing Aquaculture	Food	Access								
Tourism & Recreation	Opportunities for people to enjoy coastal areas through tourism and recreation	Recreation Cultural Resources	Tourism & Recreation	Coastal parks/reserves	Social importance	Access	Park visitation	Designated protected areas				
Natural Products	Sustainably harvested ocean-derived living resources for purposes other than consumption	Energy & Infrastructure Offshore Sand Resources	Energy production	Offshore sand resources	Access							
Coastal Protection & Carbon Storage	Storage of carbon and protection of our coasts from storm damage by living natural habitats, such as seagrasses	Offshore Sand Resources Marine Life & Habitat Restoration	Natural vegetation to stabilize shorelines & dunes	Habitats	Estuaries	Eelgrass	Native coastal vegetation					
Local Fishing & Resource Access Opportunities	Opportunities for Native Americans and other local community members to access local natural resources	Cultural Resources Aquaculture Recreation Commercial & Recreational Fishing	Tribal importance for sustenance	Access to the ocean	Working waterfront	Native American fisheries	Cultural importance of fishing	Tribal importance for water quality restoration	Access to resources			
Clean Waters	Coastal waters which are free of contaminants	Marine Life & Habitat Restoration	Land-sea interface	Trash	Nutrients	Chemicals	Pathogens					

e) Discussion topics:

- **Clean Waters** stands out as a commonly held priority/goal for healthy oceans that does not find a natural fit into any of the Ocean Plan Resources & Activities, but can be considered important across all Resources and Activities
- **Carbon Storage** and **Coastal Protection** provided by marine habitats do not have a clear 1-to-1 match with the Resources and Activities, but could be considered as partially fitting into Marine Life and Habitat and Restoration
 - **Coastal Protection** may also be related to Offshore Sand Resources – see below
- **Local Fishing & Resource Access Opportunities** will require a re-envisioning of the goal definition and potentially a renaming of the goal- this may also be subsumed ultimately by Sense of Place and Seafood Provision
- The **Livelihoods and Economies** goal has connections to many of the Ocean Plan Resources & Activities, so we should discuss how to best communicate this information across themes
- **Marine Transportation, National Security, Energy and Infrastructure**: It is not immediately clear how we could develop metrics to measure how well the ocean is providing these services/benefits. Options for measures/metrics to help translate these activities into a benefits perspective may be:
Note: each of these has different implications for reference point/target setting, policy targets, MSP/compatibility
 - Economic-based (GDP, jobs, and wages)
 - Access-based
- **Offshore Sand Resources** offers some challenges within an OHI framework
 - How do we classify this as a benefit or service provided by the ocean?
 - Natural Products? Coastal Protection? Other?
 - How to measure something that is not yet happening in the region?